



Studies on brachyuran crabs from mallipattnam (Palk Strait) southeast coast of India

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ABSTRACT

Brachyuran crabs for the present investigation were collected from offshore region of Mallipattinam (Lat. 10°12' NS. and Long. 79°20' EW) which is situated near sethubhava ghatiam on sethusamudram canal. Ashvini River enters into Palk Strait at Mallipattinam, which carries large amount of nutrients flushing into the probably promotes the species biodiversity both racially and individually. In the present investigation nearly 23 species of marine crabs are landing at Mallipattinam coast. Out of these twenty three species frequency of landing restricted to 12 species alone. They are *Portunus pelagicus*, *P. sanguinolentus*, *C. lucifera*, *C. feriata*, *C. callinosa*, *Podophthalmus vigil*, *Galene bispinosa*, *Ocypoda macrocera*, *Ocypoda platytarsis*, *Calappa lophos*, *C. bicornis*, and *Philyra globasca*. In these groups some species are non-edible and others are edible but the non-edible species are commercially important because of their use in aqua and poultry feed industry. The population density, distribution frequency, sex ratio, fecundity of these crabs showed significant variation with reference to seasons. The study critically focusing the fact, that the biodiversity of brachyuran species and even other species may decline in future due to the deposition of sand into the Palk Strait region. In these areas indicates that this area suitable for crab inhabiting and propagation.

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Introduction

Crab are the most advanced members of the phylum Arthropoda. The crabs belonging to the suborder brachyura of order Decapoda under class Crustacea and show the greatest size range of all arthropods. Brachyuran crabs are available all over the world. A total of 133 species of brachyuran crabs have been recorded from the Indian water (Kannathasan, 2011). According to Leene (1938) and Stephenson and Campbell (1957) The portunid comprises of a large number of species. Crab fishery resources from Indian coasts have been reported by many workers (Sethuramalgam, 1983; Soundrapandian *et al.*, 2008). Prasad and Tampi (1951) described the fishery and fishing method for swimming crab *Neptunus pelagicus*. Menon (1952) reported the crab fishery of Malabar Coast. Chhapgar (1962) demonstrated crab fishing at Bombay. Haley (1969 and 1973) studied the relative growth and sexual maturity of the Taxar ghost crab. Observations on breeding biology of some crabs from south west coast of India have been made (Pillai and Nair, 1973).

Decapod crustaceans are very common invertebrates inhabiting the marine environment. The diversity of the brachyuran crabs were abundant in littoral and deep sea regions (Sethuramalgam and Ajamal Khan, 1991; Kathreson, 2000;) crab fishery resources of the calicate coast have been reported (Saradha, 1998). The occurrence and distribution of crabs from Bay of Bengal and nearby estuaries have been reported by many workers (Ravichandran and Kannupondi, 2004; Kathirvel and Gukul, 2006; Ravichandran *et al.*, 2007; Varadharajan *et al.*, 2009). The biodiversity of many brachyuran crabs from Nagapattinam southeast coast of India (Kannathasan and Rajendran, 2011). The present study is an attempt to assess the biodiversity of brachyuran crabs in Mallipattinam coast, the southeast coast of the Bay of Bengal, India.

Materials and Methods

The brachyuran crabs for the present study were collected from littoral zone, tidal region and commercial fishing landing centre of Mallipattinam coast (Lat. 10°12' NS. and Long. 79°20' EW) Bay of Bengal. The study was made from April-2009 to March-2011. The availability of the berried crabs was also recorded from the total crabs landed during the study period. The crabs were collected and preserved in 70% alcohol for identified. The species identification were done based on (Leene, 1938 and Kannathasan, 2011).

Result

A primary survey along a littoral zone tidal region and fish lading centre of Mallipattinam coastal area of crab fishery resources indicated a total of 23 species of brachyuran crabs. Crabs belonging to the family *Potunidae* species were most dominant forms. In the landing centre and tidal zone many other species of crabs were landed from sea by trawlers and catamarans some. Out of these twenty three species frequency of landing restricted to 12 species. The list of species are given in to the Table 1. From the data it clearly indicates that the crab fishery resources are high in Mallipattinam coast. The predominant species they are follows. *Portunus pelagicus*, *P. sanguinolentus*, *C. lucifera*, *C. feriata*, *C. callinosa*, *Podophthalmus vigil*, *Galene bispinosa*, *Ocypoda macrocera*, *Ocypoda platytarsis*, *Calappa lophos*, *C. bicornis*, and *Philyra globasca*.

Discussion

In the present study, as many as 23 species of crabs were recorded in offshore region of Mallipattinam coast which indicates crab biodiversity. Similar observation reported by earlier workers (Leene, 1938; Stephenson and Campbell, 1957; Kannathasan, 2011). The minimum density of crab population was observed during summer and maximum density during

monsoon is related to nutrients (Kathreson, 2000; Ravichandran and Kannupondi, 2004). In the present study majority of the species was contributed by the members of the family Portunidae. Similar observing were reported earlier worker (Kannathasan and Rajendran, 2011).

Prasad and Tampi (1951) described the fishery and fishing method for swimming crab *Neptunus pelagicus*. Menon (1952) reported the crab fishery of Malabar coast. Chhapgar (1962) reported that *Portunus pelagicus* supports fishery throughout the year on both the coast. Haley (1969 and 1973) studied the relative growth and sexual maturity of the Taxar ghost crab *Ocypoda quadrata*. Pillai and Nair (1973) were recorded *S. serrata*, *P. sanguinolentus* and *C. ferriata* in south west coast. In India best potentials of crab resources are seen in coast of Tamil Nadu, Kerala and Karnataka and to certain extend in Mahuashtra and Gujarai (Kathirvel and Gukul, 2006; Soundrapandian et al., 2008; Kannathasan, 2011). Decapod crustaceans are very common invertebrates in habiting the marine environment. The diversity of the brachyuran crabs were abundant in littoral and deep sea regions (Sethuramalingam and Ajamal Khan, 1991; Ravichandran et al., 2007).

Saradha (1998) recorded berried crabs of *P.sanguinolentus* from December to May and July to August. Crab population was high during monsoon and pre monsoon months and low during summer months (Kannathasan and Rajendran, 2011). According to Varadharajan et al., (2009) The coast from Arukkattuthurai to Aiyampattinam supports a major crab fishery along south east coast of India. Kannathasan (2011) recorded a total of 133 species of crabs belonging to 58 genera, 18 family, 16 sub family and 8 super families available at Nagapattinam coast. In the present study more species of marine crabs landed from sea indicating the biodiversity of brachyuran species in these areas and is suitable for crab inhabiting and propagation. Hence the study suggested that the conservation measures should be made to avoid over exploitation of these crabs. Crabs of Mallipattinam coast, Southeast coast of Bay of Bengal.

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Table 1. List of marine crabs during April 2009 to march 2011 in mallipattinam southcoast of India

| S.No. | SPECIES NAME | S.No. | SPECIES NAME |
|-------|--------------------------------|-------|-----------------------------|
| 1. | <i>Portunus pelagicus</i> | 13. | <i>Scylla tranquebarica</i> |
| 2. | <i>Portunus sanguinolentus</i> | 14. | <i>Calappa lophos</i> |
| 3. | <i>Portunus gladiator</i> | 15. | <i>Calappa bicornis</i> |
| 4. | <i>Podophthalmus vigil</i> | 16. | <i>Philyra globulosa</i> |
| 5. | <i>Charybdis lucifera</i> | 17. | <i>Galene bispinosa</i> |
| 6. | <i>Charybdis feriata</i> | 18. | <i>Doclea gracilipes</i> |
| 7. | <i>Charybdis truncata</i> | 19. | <i>Leucisiia pubscens</i> |
| 8. | <i>Charybdis variegata</i> | 20. | <i>Dorip astuta</i> |
| 9. | <i>Charybdis natator</i> | 21. | <i>Ixa cylindus</i> |
| 10. | <i>Charybdis granulata</i> | 22. | <i>Ocypode macrocera</i> |
| 11. | <i>Charybdis callinosa</i> | 23. | <i>Ocypode platytarsis</i> |
| 12. | <i>Scylla serrata</i> | | |