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ABSTRACT

*The Palk Bay along the Indian coast is well known for their faunistic richness and variety. A number of species of previously unknown marine animals have been discovered thriving in one of the strangest habitats on Earth. In the present study the species *Lucosia anatum* Herbst, 1783 is also described and recorded from the Indian coast in recent years, raising the number of Leucosiid crabs in the coastal region. This species collected naturally via marine debris and ocean currents. Most introduced marine species are benign, causing no known adverse effects. However some species become invasive in a new environment.*

KEY WORDS: Decapoda, Leucosiidae, Leucosia, *Lucosia anatum*

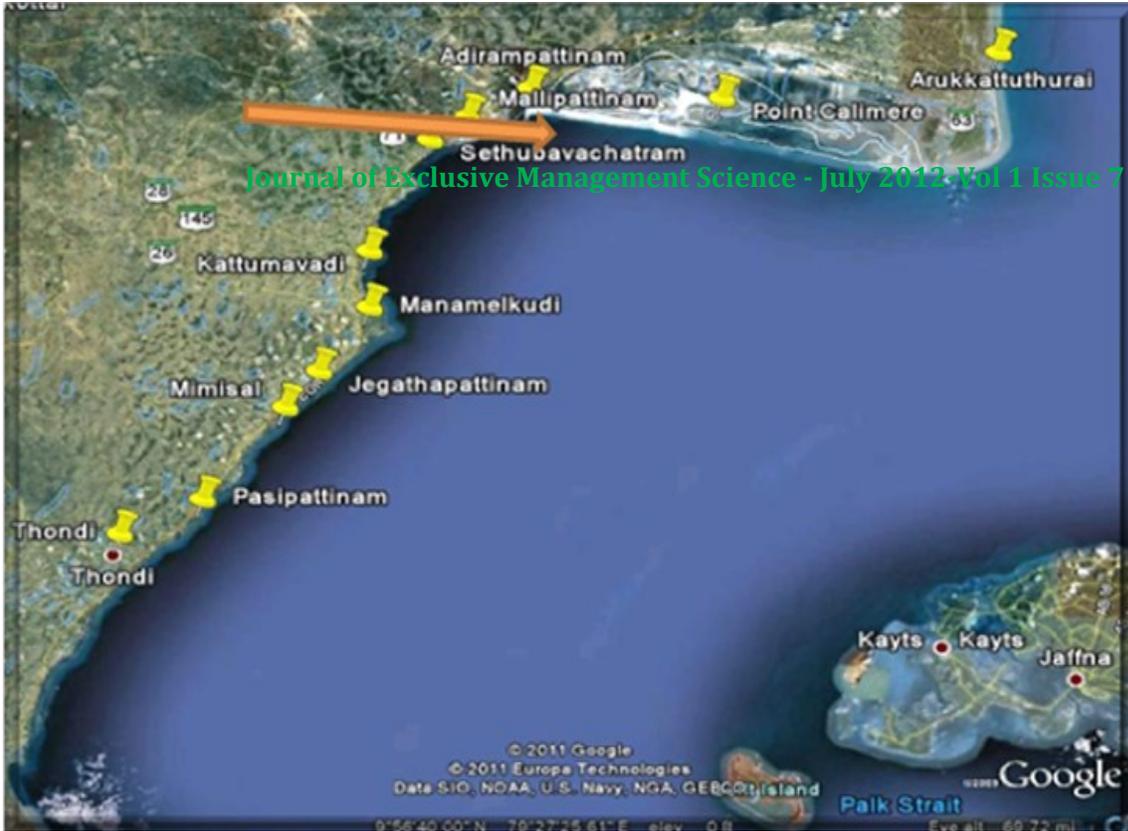
INTRODUCTION

Biodiversity is the variation of life forms within a given ecosystem, biome or for the entire Earth. Crabs are one of the fascinating groups in Decapoda (Varadharajan *et al.*, 2009). The infraorder Brachyura contains 6,793 species in 93 families, as many as the remainder of the Decapoda. Venkataraman and Mohideen Wafar (2005) reported 254 species of crabs belonging to 120 genera which represented 24 families. A total number of 990 species of marine brachyuran crabs belonging to 281 genera and 36 families are found in Indian waters

(Kathirvel, 2008). Leucosiid crabs constitute one of the commonest but least known brachyuran taxa in the Indian coastal region. Family Leucosiidae is containing currently four subfamily Cryptocneminae Stimpson, 1858, Ebalinae Stimpson, 1871, Leucosiinae Samouelle, 1819 and Philyrinae Rathbun, 1937. There are 13 species belonging to genus *Leucosia* Weber, 1795 was recorded around the world. Stephensen (1945) identified 21 species of Lucosidae crabs from Indo-pacific coastal regions. Alcock (1900) reported 9 species and Sankarankutty (1962) reported 7 species of Lucosidae crabs from Andaman and Nicobar Islands. However, the Leucosiid fauna of the Indian coast remains poorly unknown. Hence, there is a need to update the by collected newly recorded species from Mallipattinam, east coast of India.

Study area

Mallipattinam (10° 16' 35 N"; 79° 19' 12" E) in Tanjore district is situated in the Palk Strait, about 350 km south of Chennai. The Palk Bay itself is about 110 km long and is surrounded on the northern and western sides by the coastline of the State of Tamilndau in the mainland of India. The Palk Bay waters merge with those of the Bay of Bengal in the northeast and the Gulf of Mannar waters in the south. The Palk Strait is just 35 km of water that is narrower than the English Channel and separates the northern coast of Sri Lanka from the southeast coast of India. Mallipattinam is a muddy shore that serves as a protective shelter for many invertebrates. It is mainly dominated by mangroves, sandy beaches, mudflats, coral reefs, seaweed and seagrass beds. This is one of the major fish landing center and considered to be largest of the coastal villages in the surroundings of Tamil Nadu coast (Map-1).



Map1: Study area

Taxonomy hierarchy

Kingdom Animalia Linnaeus, 1758

Phylum Arthropoda Latreille, 1829

Class Malacostraca Latreille, 1802

Order Decapoda Latreille, 1802

Family Leucosiidae Samouelle, 1819

Genus *Leucosia* Weber, 1795

Species *L. anatum* Herbst, 1783



Dorsal view



Ventral view

Plate 1. *Leucosia anatum* (Pebble crab) (Herbst, 1783)

Common Name: Painted pebble crab

Synonyms: *Cancer anatum* Herbst, 1783(Amboina), *Cancer urania* Herbst, 1801(Amboina), *Leucosia australiensis* Miers, 1880, *Leucosia longifrons* De Haan, 1841(Japan), *Leucosia neocaledonica* A. Milne-Edwards, 1873 (New Caledonia), *Leucosia ornata* Miers, 1877 (Ceylon), *Leucosia polita* Hess, 1865(Sydney), *Leucosia splendida* Haswell, 1879 (Australia).

Description: Dorsal surface of the carapace is smooth and polished with some granules on anterolateral margins and hepatic region; frontal region narrowed and produced anteriorly; Eyes very minute. Anterior part of pterygostome ending with circular depression behind the orbit; the chelipeds are robust and symmetrical; the arm is somewhat depressed and its upper and lower surfaces covered with several granules toward the proximal end; thoracic sinus present in front and above bases of chelipeds. Third maxillipeds with merus shorter than half length of ischium measured along inner border. Chelipeds with palm swollen; fingers are distinctly shorter than the palm; dactylus typically closing vertically, but some times in horizontal plane; the ambulatory legs are stout and regularly decrease in length; each segment is quite smooth and cylindrical; but the propodus and dactylus are compressed, the latter being longer than the former and is lanceolate in shape; Female abdomen enlarged discoid.

Colour: Carapace brownish-grey, sometimes with orange circles on dorsal side; legs white with orange rings; chelae with an orange band at base of fingers.

Size: Carapace length of the male is 13.8 mm and breadth 12.5 mm. The female length is 11.3 mm and breadth 10.1 mm (excluding lateral and posterior marginal spines).

Habitat: Inhabits the littoral and sub littoral regions. The specimens were collected from in 30m depth of Mallipattinam from the sandy clay substratum.

Species collected: 12 males and 9 females in Mallipattinam (10° 16' 35N"; 79° 19' 12" E), 25th in May, 2011.

Remarks: They are slow-moving and hide under soft mud during the day. Like most leucosiids, they feed on small animals in the muds. This crab is very new to Indian waters but recorded other parts of the world.

Distribution: Madagascar, Persian Gulf, Pakistan, Sri Lanka, Mergui, Japan, , Peninsula, Korea, Taiwan, China, Philippines, Indonesia, Australia and New Caledonia.

CONCLUSION

The actual Leucosiid species recorded from the Indian coast are *L. craniolaris* Linnaeus, 1764 from mouth of Hooghly River (Alcock, 1896), *L. haematosticta* Adams & White, 1848 from Palk Strait (Alcock, 1896), *L. obtusifrons* de Haan, 1841 from Coromandel coast (Alcock, 1896) and Gulf of Mannar (Laurie, 1906), *L. perlata* de Haan, 1841 from Andaman Islands (Alcock, 1896) , *L. unidentata* de Haan, 1841 from off Malabar coast (Alcock, 1896), *L. vittata* Stimpson, 1858 from Andaman Islands (Alcock, 1896), *L. rhomboidalis* de Haan, 1841 from Coromandel coast (Alcock, 1896). The crab *L. anatum* was recorded for the first time along Palk bay in west the east coast of India (Plate-1).

A number of species of previously unknown marine animals have been discovered thriving in one of the strangest habitats on Earth. This contribution is offered as a preliminary step toward compiling the necessary information for a synthesis on the distribution and evolution of crabs in the Indian coastal region (Varadharajan *et al.*, 2009). The species *L. anatum* Herbst, 1783 are also described and recorded from the Indian coast in recent years, raising the number of Leucosiid crabs in the coastal region. In the present study should be remembered that important areas of this vast region still remain insufficiently explored and that new recorded of crabs are sure to be discovered as collection efforts intensify in remote areas and as taxonomic skills become more refined.

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