THE VERTICAL DISTRIBUTION OF RECENT BENTHIC OSTRACODA IN MARAKKANAM AND ODINUR, EAST COAST, SOUTH INDIA.

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ABSTRACT

A distribution study of South Indian east coast Ostracoda was made, based on 22 bottom sediment samples collected over a year from the estuaries of Marakkanam and Odinur, Tamil Nadu, east coast of India. A total of 10 species belonging to 10 genera were identified. The fauna shows a close similarity to other ostracoda assemblages of Indo-pacific region. The distribution of ostracoda in the Marakkanam and Odinur estuaries seems to be controlled by salinity.

ألانتشار العمودي للادرعيات القاعية الحديثة في مصبات مركانم واودينور في الساحل الشرقي جنوب الهند

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الخلاصة

أجريت دراسة انتشار الأوستراكودا اعتمادا على 22 عينة من الرواسب القاعية التي جمعت من مصبات مركانم واودينور في مدينة تاميل نادوا في الساحل الشرقي من الهند. و قد أعطي توزيع الأنـواع في كل عينة بصورة كاملة و شخصت عشرة انواع تابعة الى عشرة اجناس. الحشود الحيوانية بينت تشابه قريب من التجمعات الأخرى من الأستراكودا في منطقة المحيط الهندي والهادي. انتشار الأوستراكودا في مركانم واودينور محدد بواسطة الملوحة.

INTRODUCTION

The fact that Indian Peninsula is bordered by a 6000 km long coastline, the recent Ostracoda at this region are still inadequately known. The major papers are those of Brady (1868); Scott (1905); James (1973); Honnappa

(1975); Jain (1976, 1978, 1981); Misra and Shrivastva (1979); Bhatia and Kumar (1979); Guha (1980); Khosla et al. (1982); Varma et al. (1993);Vaidya and Mannikeri (1994); Shyam Sunder et al. (1995); Hussain and Rajeshwara Rao (1996)Hussain et al. (1996); and Hussain et al. (1997). Casual references to the occurrence of certain species a long the west coast of Indian have been made also by Gramann (1975) and Paik (1977), while some few taxa have been described from Indian waters by Maddocks (1969a,b) and Benson (1972). Among these authors, Jain (1978) gave comprehensive account of 56 species of recent ostracoda from the beach sands. The aim of this paper is to provide more detailed about the distribution of benthic ostracoda in the east coast of south Indian.

MATERIAL AND METHODS

The area under investigation is off the coast of Marakkanam (Core I 79°58'E; 12°13'N) and Odinur (Core II 79°58'E; 12°13'N) (Fig1), along the east coast of Tamil Nadu in the Bay of Bengal, Tamil Nadu. Chennai. Two sediment cores sample were collected from two regions along east coast of Tamil Nadu in Marakkanam and Odinur at a depth ranging between 150cm-200cm (Fig1), the slope of Marakkanam and Odinur in the Bay of Bengal is 0.001 degree. The sediment are highly admixed with sand and fine fraction such as fine silt and silty clay sediment, the grain size obtained from Marakkanam and Odinur differs considerably with other sites along east coast, the sand comprised mainly quartz with small amount of feldspar, simllimanite and rock fragments. Admixed with these were mollusk shell debris, root fragment, gastropoda, crabs and oyster tests. The collections were made using puncturing PVC pipes (2-inch diameter) in the spot sites . All the sediments samples were subjected to standard micropalaeontological techniques. The ostracoda fauna were separated by weight of 100g sample and counted. The distribution of each species, in all 22 samples (9 in core1 and 13 in core2) are presented.

RESULT AND DISCUSSION

Ten species belonging to 10 genera were identified (Plate 1).Ostracoda specimens were recovered from all the 22 sediment samples collected and studied. Their faunal count showed that the population size ranges between 13 and 50 individual per 100g of the sediment in core 1 (Marakkanam) (Table1), with the minimum at sample 1 and the maximum at sample 6 followed by sample 5 and sample 4. On the other hand, in core2 (Odinur) (Table2) the population size ranges between 8 and 17 individual per 100g of the sediment, with the minimum at sample 5 and sample 6 and the maximum at 1 followed by sample 3and sample. The sample collected near the shore recorded the lowerest population in each core, this may be due to the constant agitation caused by the ebb and flow of the water (surf action). All the species recorded were benthic, shallow water and tropical forms. Only *Tanella gracilis* Kingma occurred in all the samples in core 1 (Marakkanam).Where as the other species like *Keijella reticulata* Whatley and Zhao, *Chrysocythere keiji* Jain, *Loxoconcha mandviensis* Jain, *Hemicytheridae reticulata* Kingma, *Miocyprideis spinulosa* Brady, *Paijenborchellina prona* Lubimova and Guha were absence in some samples (Table1), indicating their preference from brackish water to shallow open marine. And also forms like *Hemicytheridae reticulata* Kingma and *Tanella gracilis* Kingma prefer an estuarine (brackish water) biotope (Sreenivas et al. 1991; Kumar and Hussain 1997).In Core 2 (Odinur) the species are distributed in among appearance and absence this is may be due to the salinity values decrease from the mouth of estuary upstream, the population of brackish to fresh water taxa like *Hemicytheridae reticulata* Kingma are observed to be abundant, i.e., the samples collected from the latter segment of transect in the estuary (Hussain and Mohan, 2000). Hence, it is pertinent to mention that salinity has considerable effect on the distribution of ostracoda of the present area. The persistent occurrence of *Tanella gracilis* Kingma in all the samples in Core 1 the samples suggest their wide range of tolerance to the observed environmental parameters, in

the study area. Hence, it may be assumed that *Tanella gracilis* Kingma encountered in the study area fall under euryhaline species (Wagner, 1957)

CONCLUSION

1.The occurrence of *Tanella gracilis* Kingma is considered to be the first record in the present area.

2. The maximum ostracoda population noticed is correlated with higher temperature and salinity of the bottom sediments and higher calcium carbonate (Achyuthan et al.2002).

3.The ostracoda fauna of the present area exhibit close affinity with the ostracoda assemblage of the Indo-Pacific region, viz., other parts of east and west coasts of India, Arabian Gulf, Gulf of Aqaba (Red Sea), South China, Malacca Straits, Jason Bay and Indo-Malayan areas (Hussain and Rajeshwara Rao, 1996).

4.As a whole, the faunal assemblages are characteristic of shallow water, neritic and tropical in nature.

ACKNOWLEDGEMENTS

The Author place on record their deep sense of gratitude to the Dr. Hema Achyuthan, assistant Prof. for her able guidance and constant encouragement throughout the work. The author thanks Prof.S.P.Mohan, Director, School of Earth and Atmospheric Science, University of Madras, for facilities and encouragement during this work. The major part of the work was done during the scholarship, financed by I.C.C.R (Indian Council of Culture and Relations). New Delhi. The manuscript was written while the author was working at Department of Geology, Anna University, Chennai, India.

Table.1-Distribution of ostracoda in the Marakkanam estuary, Chennai. (Actual number of specimens per 100g of the sediments.)

Species Name Samples (core1)	1	2	3	4	5	6	7	8	9
Tanella gracilis Kingma	2	5	16	20	21	33	8	2	4
Keijella reticulata Whatley and Zhao	1	1	2	1	3	4		1	1
Chrysocythere keiji Jain	2	1		1	3	3	2	2	1
Loxoconcha mandviensis Jain	6	1	3	2	4	1	1		
Hemicytheridae reticulata Kingma	1	2	4	6	3	2	1	3	2
Miocyprideis spinulosa Brady				1	2		3	1	
Paijenborchellina prona Lubimova and Guha	0	2	1		1	1			
Total	13	14	29	35	42	50	22	17	17

Table.2-Distribution of ostracoda in the Odinur estuary, Chennai. (Actual number of specimens per 100gm of the sediments.)

Species Name Samples (core2)	1	2	3	4	5	6	7	8	9	10	11	12	13
Hemicytheridae reticulata Kingma	2	2	2	1			1	1	1		1	1	
Miocyprideis spinulosa Brady	4	1	1	1	1				1				
Actinocythereis scutigera Brady	6	1	2	2	2	1	1	1	1		1	1	
Phlyctenophora orientalis Brady	2	4	3	4	1								
Propontocypris (*Propontocypris*) *crocata* Maddocks	2	1	2			1	1	1					
Total	17	11	13	12	8	8	10	11	12	10	12	14	13

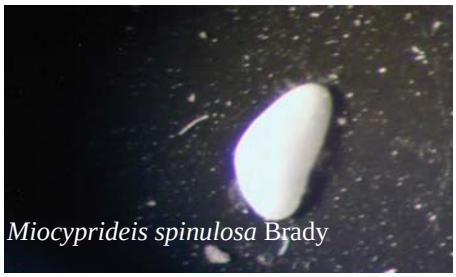

Actinocythereis scutigera Brady

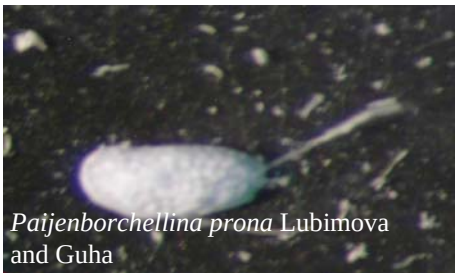

Chrysocythere keiji Jain

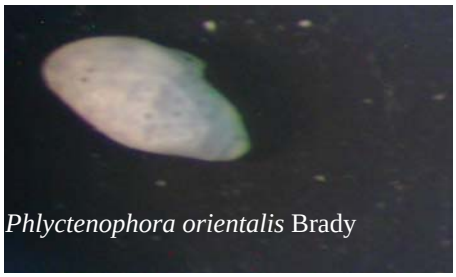

Hemicytheridae reticulata Kingma

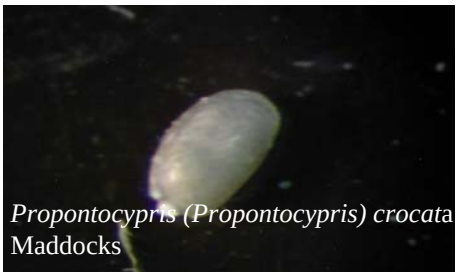

Keijella reticulata Whatley and Zhao


Loxoconcha mandviensis Jain


Miocyprideis spinulosa Brady


Paijenborchellina prona Lubimova and Guha


Phlyctenophora orientalis Brady


Propontocypris (Propontocypris) crocata Maddocks

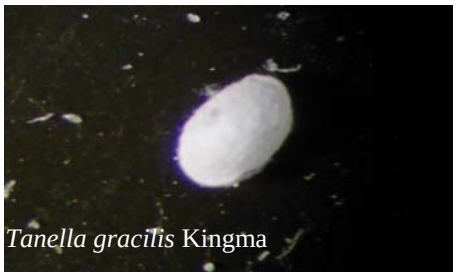

Tanella gracilis Kingma

Plate 1 Recent Benthic ostracoda in Marakkanam and Odinur, South India

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