ISSN 0375-1511

Rec. zool. Surv. India : **113**(Part-3): 55-58, 2013

MANGROVE ASSOCIATED SIPUNCULID (SIPUNCULA : PHASCOLOSOMATIDAE) AND ECHIURID (ECHIURA: THALASSEMATIDAE) FROM ODISHA COAST, INDIA

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INTRODUCTION

The Sipuncula and Echiura form important groups of intertidal invertebrate distinguished by their members dwelling in burrowed substrata. They are found in the temporarily exposed intertidal limits to the abyssal depths of vast seas and also certain tropical estuaries of the globe. Though they are typically of marine origin but a few apparently well adapted to the estuarine environment. This paper deals with a single species of Sipuncula, *Phasolosoma* (*Phasolosoma*) *arcuatum* (Gray, 1928) and a single species of Echiura namely *Annelassorhynchus microrhynchus* (Annandale and Kemp, 1915) which were collected during the recent faunal survey (2011-2012) of the estuaries and mangrove fringed coastal districts of Odisha. Haldar (1985, 1989 & 1995) reported *Phascolosoma arcuatum* from Sundarbans and Hugly Matla Estuary and Haldar (1991) reported this species from different regions of Indian coast. *Annelassorhynchus microrhynchus* was first described from the estuarine zone of Chandipore by Prasad (1919). Both the species were described from the estuarine zone of Subarnarekha estuary by Mitra *et. al.,* (2010). Here both the species are first time reported from the other estuaries of Odisha.

MATERIALS AND METHODS

The collections were made from hard and sticky mud or black humus soil or mixed with fine sand granules. Specimens were picked up carefully and brought to the camp laboratory in estuarine water. The animals were narcotized by sprinkling some quantity of menthol crystals or adding a few drops of 70% ethyl alcohol in the water containing specimens at frequent intervals for the period of more than one hour. The narcotized specimens with fully expanded condition were initially fixed in 4% formaldehyde and permanently preserved in 70% ethyl alcohol for further studies.

SYSTEMATIC ACCOUNTS

Phylum SIPUNCULA
Class PHASCOLOSOMATIDEA
Order PHASCOLOSOMATIDA
Family PHASCOLOSOMATIDAE

Phasolosoma* (*Phasolosoma*) *arcuatum
(Gray, 1928)
(Fig. 1)

1828. *Sipaculus arcuatus* Gray, *Spicilegia Zoologica*, London, Trietel, WurtZ & Co. and W. Wood , (1)**: 8**

1995. *Phascolosoma arcuatum*: Haldar, *Estuarine Ecosystem Part* 2: *Hugli Matla Estuary* : *Zool. Surv. India*: **37**.

***Material examined*:** Bandar, Devi river estuary, Puri District, Odisha; 01.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP396/2; 2 ex; Balaramgadi, Budha Balanga estuary, Balasore District, Odisha; 13.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP397/2; 3 ex, Subarnapur, Subarnarekha estuary, Balasore District, Odisha;

Fig. 1 : *Phascolosoma arcuatum*

Fig. 2 : *Anelassorhynchus microhynchus*

15.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP398/2; 2 ex; Talsari, Subarnarekha estuary, Balasore District, Odisha; 16.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP399/2; 2 ex;

Diagnosis: Trunk length 30-50mm, introvert is slender. Tentacles 10 in number, finger like, arranged in a horse-shoe shaped pattern and placed dorsally to mouth. Hooks are arranged in 50-60 closely set complete rows. Each hook is dark in colour with sharpely bent apex forming an obtuse angle. Rectum is short and without caecum. Nephridium is 1/3 as long as trunk and attached to body wall by 2/3 of their length.

Distribution: This species was described by Gray from the material collected from the Indian Ocean, no specific type locality was mentioned there, however this is an Indo west Pacific species found in tropical shallow water.

India: Subarnarekha estuary, Budha Balanga estuary, Devi river estuary (Odisha); Hooghly –Matla estuary (West Bengal); Kakinada & Visakhapatnam (Andhra pradesh); North Andamans.

Elswhere: Southern China to Northern Australia, Malaysia, Indonesia and Bangladesh.

***Habitat and associated fauna*:** These animals were found in hard clayey soil (blackish in colour) at a depth of 25-35 cm from the surface. A bivalve namely *Glouconeme scluptata* and one species of brachiopod (*Lingula anatina*) are found in the same habitat. Polychaetes namely *Iphione* sp. is encountered in the same burrows of this sipuncula. This association appears as first time observation where as *Euclymene annandale* and *Parheteromastus tenuis* are very common in relatively soft mud of the same habitat. One small gastropod, *Assiminea* sp. are noticed to crawl on the surface soil of this area.

Remarks: The species was described from the estuarine zone of Subarnarekha estuary by Mitra *et. al.,* (2010). Here it is first time reported from the other estuaries of Odisha.

Phylum ECHIURA
Class ECHIUROIDEA
Order ECHIURIDA
Family ECHIURIDAE
Subfamily THALASSEMATINAE

Anelassorhynchus microhynchus (Annandale and Kemp, 1915)
(Fig. 2)

1915. *Thalassema microhynchus* Annandale and Kemp, *Mem. Indian Mus.*, 5: 55-63.

1919. *Thalassema microhynchus, Prasad, Rec. Indian Mus., **16** : 399-400.*

1946. *Anelassorhynchus microhynchus: Fisher, Proc. U. S. natn. Mus., **96** : 222.*

1995. *Anelassorhynchus microhynchus*: Haldar, *Estuarine Ecosystem Part 2*: *Hugli Matla Estuary* : *Zool. Surv. India*: 35-36.

Material examined: 1 ex; Balaramgadi, Budha Balanga estuary, Balasore District, Odisha; 15.xii.2009, S. Mitra & J.G. Pattanayak, Reg. No. MP029/3; 2 ex; Astaranga, Devi river estuary, Puri District, Odisha; 30.iii.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP030/3; 1 ex; Bandar, Devi river estuary, Puri District, Odisha; 02.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP031/3; 1 ex; Balaramgadi, Budha Balanga estuary, Balasore District, Odisha; 13.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP032/3; 3 ex, Subarnapur, Subarnarekha estuary, Balasore District, Odisha; 15.iv.2011, S. Mitra & J.G. Pattanayak, Reg. No. MP033/3.

***Diagnosis*:** The trunk ranges from 13 to 30 mm long (after full narcotisation). Proboscis varies from 1 to 13 mm in length. In live condition the anterior part of the trunk is somewhat translucent, posterior part each quite opaque. Proboscis is rudimentary, its two lateral margins at the proximal end fused ventrally free and end each truncate. Circumanual region possesses papillae. Ventral hooks are well developed and their free ends are broad and curved. Color of the trunk is grayish white, proboscis cream coloured.

***Geogrphical Distribution*:** Chandipore (type locality), Balaramgadi, Subarnapur (Balasore District, Odisha); Bandar, Astaranga, (Puri District, Odisha); South 24 Parganas (West Bengal).

***Habitat and associated fauna*:** These animals were found in soft and sticky mud or black humus soil or mixed with fine sand granules at a depth of 15-25 cm from the surface. A polychaete *Glycera tesselata* and one species of unidentified capitellids are frequently found in this habitat.

Remarks: The species was described from the estuarine zone of Chandipore by Prasad (1919) and after that by Mitra *et. al.,* (2010) from Subarnarekha estuary. Here it is first time reported from the other estuaries of Odisha.

ACKNOWLEDGEMENTS

The authors wish to express their deep felt gratitude and thanks to Dr. K. Venkataraman, Director, Zoological Survey of India, Kolkata, for providing facilities to complete this work. All staffs of General Non-Chordata section and Publication division of Zoological Survey of India also acknowledged for their sincere help.

SUMMARY

The present paper deals with the diagnostic features, habitat and distribution of one species of sipuncula and one species of echiura available in some estuaries and mangroves of Odisha. A Polynoid polychaete, *Iphione* sp. was found in the same burrows of this sipanculids. Literature review suggests that globally there is no any report of such association.

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Manuscript received : 19-12-2012; *Accepted* : 19-09-2013