INTRODUCTION

Actiniarians, popularly called as ‘Sea-Anemones’, belongs to the phylum Cnidaria form an important group of intertidal invertebrate distinguished by their habit, habitat and beautiful colouration. This group was not elaborately studied from India. However Annandale (1907 & 1915), Carlgren (1925 & 1949), Parulekar (1968 & 1990), Seshyia and Cuttress (1971), Misra (1975 & 1976) and Bairagi (1998, 2001) worked on this group and a total 40 species of sea anemones belongs to 33 genera and 17 families so far recorded from India. During the recent faunal survey (2010-2011) of Estuaries and Mangrove fringed coastal districts of Odisha, the authors encountered a quite good number of specimens of this group. After proper identification these reveals 5 species belonging to 4 genera and 3 families. Earlier recorded four species are also included in this paper. A short description, habitat-choice and distribution of a total of 9 species are provided in this paper.

MATERIALS AND METHODS

As the species are burrowing, the collection was done by inserting spade into the muddy or sandy substrata without disturbing the animals and lever up to the mud along with the Anemone. Specimens were picked up carefully and brought to the camp laboratory in estuarine water. Giant anemone Paracondylactis sinensis (Carlgren) was collected by digging the sandy mud 20-25 cm around the specimens up to depth of about 70-120 cm depending on the size of the anemone. The animals were detached from the substratum by lifting the basal disc manually and narcotized with 1% formalin for the period of 6-8 hours. The narcotized anemones with fully expanded condition were preserved in 10% formalin for further studies.

SYSTEMATIC ACCOUNTS

Phylum CNIDARIA  
Class ANTHOZOA  
Subclass HEXACORALLIA  
Order ACTINIARIA  
Family EDWARDSIIDAE
1. Edwardsia jonesii Seshayia & Cuttress, 1969  
2. Edwardsia tinctrix Annandale, 1915

Family HALIACTIIDAE  
3. Pelocoetes exul Annandale, 1915  
4. Phytoceetes gangeticus Annandale, 1915*

Family DIADUMENIDAE  
5. Diadumene schilleriana (Stoliczka, 1869)

Family HALCAMPIDAE  
6. Mena limnicola (Annandale, 1915)*  
7. Mena chilkaeae (Annandale, 1915)*

Family NEVADNEIDAE  
8. Nevadne glauca (Annandale, 1915)*
Family ACTINIIDAE

9. Paracondylactis sinensis (Carlgren, 1949)

* Not collected by the authors, diagnosis is given here from the literature.

**Key to the Species**

Scapus covered by rusty-red cuticle ................... 1

cuticle absent..............................................2

1. Tentacles 12 ..............................................Edwardia jonesii

Tentacles 16..............................................Edwardia tinctrix

2. Tentacles branched....................................Pelocoetes exul

Tentacles simple..........................................3

3. Column short ...........................................Dadumene schilleriana

Column narrow and slender.............................4

4. Column smooth and elongated........................5

Column short and rough.................................6

5. Tentacles 36 in number, base narrow, physa like

............................................................Phytocoetes gangeticus

Tentacles 96 in number, base flattened and distinct

............................................................Paracondylactis sinensis

6. Columns with no stinging warts.....................Nevadne glauca

Columns with stinging warts............................7

7. Stinging warts arranged in 12-16 longitudinal

rows ............................................................Mena limnicola

Stinging warts arranged in 24 longitudinal rows

............................................................Mena chilkaeae

1. Edwardsia jonesii Seshaiya & Cuttress, 1969


1995. Edwardsia jonesii Misra, Wetland Ecosystem Series I :

Fauna of Chilka Lake : 230.


Fauna of West Bengal, state fauna series, 3(Part-11):33.


Fauna of Godavari Estuary, Estuarine ecosystem series,

4:12.


Diagnosis: Tentacles 12, smooth and arranged in two cycles of six each. Body distinctly divided into capitulum, scapulus, scapus and inflatable physa without cuticle. Capitulum thin-walled, almost transparent, smooth and without cuticle. Scapus thick-walled, covered with thick shaggy rusty-red cuticle. Actinopharynx with 8 longitudinal ridges, siphonoglyph indistinct.

Habitat: Burrowing forms in soft muddy substratum of Intertidal zone.

Distribution: India: East coast: Subarnarekha estuary, Chilika Lake (Odisha), South 24 Parganas (West Bengal), Andhra Pradesh, Tamilnadu; West coast: Sunkeri (middle reaches of Kali river estuary), Karnataka.

Remarks: Edwardsia jonesii Seshaiya & Cuttress, 1969 is fairly distributed in east coast of India.

2. Edwardsia tinctrix Annandale, 1915

1915. Edwardsia tinctrix: Annandale, Mem. Indian Mus.,

5: 92, pl. 16, fig. 3; pl.7, fig. 55a; pl.7a, fig. 5; text figs.

7a-c.


Soc., 65(1): 140, pl. figs. 1.


Diagnosis: Tentacles 16, smooth and arranged in two cycles of six each. Body distinctly divided into capitulum, scapulus, scapus and inflatable physa well developed at the aboral end. Capitulum thin-walled, almost transparent, smooth and without cuticle. Scapus thick-walled, covered with thick shaggy rusty-red cuticle. Actinopharynx with 8 longitudinal ridges, siphonoglyph indistinct. Nemathyboms in 8 longitudinal rows on the column.

Habitat: Burrowing forms in soft muddy substratum of Intertidal zone.

Distribution: Endemic in India: East coast: Subarnarekha estuary, Chilika lagoon (Odisha), Hugli-Matla Estuary (West Bengal); West coast: Goa and Maharashtra; Sunkeri (middle reaches of Kali river estuary), Karnataka.
Remarks: *Edwardsia tinctrix* Annandale, 1915 is fairly distributed in east coast and west coast of India.

**Family HALIACTIIDAE**

3. *Pelocoetes exul* Annandale, 1915

1915. *Pelocoetes exul* Annandale, *Mem. Ind. Mus.*, 5:86, pl.6, fig.1; pl.7, figs. 3, 3a, 3b; text fig.5.


**Diagnosis**: Basal disc reduced. Bluntly tapering and without physa. Column elongated. Longitudinal rows of nematocyst batteries alternating with cinclides on column. Tentacles are branched hexamerously arranged (6 + 6+12+24+48, the last cycle more or less complete) oral disc lobed.

**Habitat**: Soft mud burrowing form in the Intertidal zone, found at mudflat just beside the narrow creeks of the middle tidal area.

**Distribution**: India: Subarnarekha estuary (Odisha), South 24 parganas and Gangetic delta (West Bengal), Tamilnadu, Kerala, Goa.

**Remarks**: This species is very common in the estuaries and found in the muddy shore near the estuarine mouth. But this species is not collected during the present surveys. Diagnosis is incorporated from the literature.

**Family DIADUMENIDAE**

5. *Diadumene schilleriana* (Stoliczka,1869)


**Diagnosis**: Body divided into Scapus and Capitulum. Capus with Cinclides and Capitulum with collar. Body very short, 12-19 mm. in length and diameter greater than that of column and provided with longitudinal rows of warts, tentacles long and numerous inner tentacles thicker than outer tentacles. Basal disc strong and adhesive. Column divided into scapus and capitulum, tentacle long, numerous, more or less regularly arranged and inner tentacles thicker than the outer, distinct sphincter absent.

**Habitat**: Occurring in gregarious population on rocks and boulders and submerged trunk of mangroves.
Distribution: India: Devi river estuary, Burhabalanga estuary, Mahanadi estuary and Subarnarekha estuary (Odisha); Canning, Dimond harbour, Sagar Island (West Bengal); Maharashtra.

Remarks: This species often found on living animals like hermit Crabs, horse-shoe crab and sometimes also on plastics bags which are occasionally found as floating in waters.

6. Mena limnicola (Annandale, 1915)*

1915. Halianthus limnicola Annandale, Mem. Ind. Mus., 5: 89, pl.6 fig.2, pl.7 fig.4, 4a, 4b, text fig. 6.
1925. Mena limnicola : Carlgren, Ark zool., 17A(21) : 11, fig.8-11.

Diagnosis: Tentacles 12 in number; stinging warts large, arranged in 12-16 longitudinal rows, more scattered and variable in size in the lower part of the column, also present in the central part of the phusa; Sphincters very weak; six pairs of macrocnemies, fifth and sixth pairs weaker than the others.

Distribution: Chilka lagoon (Odisha).

Remarks: This species is Endemic to Chilka lagoon (Odisha). But this species is not collected during the present surveys. Diagnosis is incorporated from the literature.

7. Mena chilkaeae (Annandale, 1915)*

1915. Phytocoetes chilkaeus Annandale, Mem. Ind. Mus., 5: 89, pl.6 fig.2, pl.7 fig.4, 4a, 4b, text fig. 6.
1925. Mena chilkaeae : Carlgren, Ark zool., 17A(21) : 11, fig.8-11.

Diagnosis: Tentacles 24 in number; stinging warts large, arranged in 12-16 longitudinal rows, more scattered and variable in size in the lower part of the column, also present in the central part of the phusa; Sphincters very weak; six pairs of macrocnemies, fifth and sixth pairs weaker than the others.

Distribution: Chilka lagoon (Odisha).

Remarks: This species is Endemic to Chilka lagoon (Odisha). But this species is not collected during the present surveys. Diagnosis is incorporated from the literature.

Family NEVADNEIDAE

8. Nevadne glauca (Annandale, 1915)*

1915. Gyrostoma glaucum Annandale, Mem. Ind. Mus., 5:70, pl.7afig.1, text-figs.1a,b.

Diagnosis: Pedal disc small; tentacles about 144 in number, arranged in 6 cycles, 4th and 6th cycles being exocoel tentacles. Actinopharynx well developed with weak siphonoglyphes. Mesenteries arranged in four cycles (6+6+12+48), last cycle only in uppermost part of the body. Mesenteries of the three first cycles perfect but those of the second and third order perfect only in uppermost part of actinopharynx.

Distribution: Chilka lagoon (Orissa), Hugli – Matla estuary (West Bengal), Tamilnadu.

Remarks: This species is Endemic Indian in Indian waters. This species is not collected during the present surveys. Diagnosis is incorporated from the literature.

Family ACTINIIDAE

9. Paracondyllactis sinensis (Carlgren, 1949)


Diagnosis: column elongated and tapering. Pseudospherules present on columns. Pedal disc flattend and distinct. Tentacles 96, arranged in 5
Distribution of Sea Anemones in Mangroves and Estuaries of Odisha

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of The Species</th>
<th>Mahanadi Estuary</th>
<th>Devi River estuary</th>
<th>Subarnarekha estuary</th>
<th>Chilka Lagoon</th>
<th>Budha Balanga estuary</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Edwardsia jonesii</td>
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<td>-</td>
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<td>2.</td>
<td>Edwardsia tinctorix</td>
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<td>-</td>
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<tr>
<td>3.</td>
<td>Pelocoetes exul</td>
<td>-</td>
<td>+</td>
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<tr>
<td>4.</td>
<td>Phytocoetes gangeticus</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>-</td>
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<tr>
<td>5.</td>
<td>Dudaunena schilleriana</td>
<td>+</td>
<td>+</td>
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<tr>
<td>6.</td>
<td>Mena limnicola</td>
<td>+</td>
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<td>7.</td>
<td>Mena chilkae</td>
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<td>8.</td>
<td>Nevadne glauca</td>
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<tr>
<td>9.</td>
<td>Paracondylactis sinensis</td>
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</tbody>
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cycles. Colour of the tentacles and oral disc are white to colourless.

**Habitat:** Intertidal Sand and sandy mud area.

**Distribution:** India: East coast: Subarnarekha Estuary, Budha Balanga Odisha, West Bengal; West coast: Marharastra and Karnataka

**Remark:** This species is endemic to Indian coast.

**SUMMARY**

The present paper deals with the diagnostic features of 9 species of sea anemones available in the estuaries and mangroves of Odisha. Chilka lagoon is most diverse in respect of Actiniarians concern, where as Subarnarekha estuary is the second in position.

**ACKNOWLEDGEMENTS**

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**REFERENCES**


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