

On some benthic polychaetes from Cochin Estuary

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Abstract

Among the various animal groups represented in the macrobenthic fauna of the Cochin Estuary studied, Polychaeta was the dominant group. Thirty species belonging to 25 genera under 17 families are briefly described. Of these 30 species, 17 are new records from the Cochin Estuary. Salinity and nature of substrata are the two main factors which govern the distribution of polychaetes. Spatial and temporal distribution of polychaetes present in the Cochin Estuary are also given along with the species description.

Introduction

Polychaetes constitute one of the major components of the macrobenthic community in marine and estuarine ecosystem. They are preferred as food by snails, crustaceans, fishes and birds and thus form an essential component of the complex food chain both in their adult as well as larval stages. The first important work on the systematics of Polychaeta of the Indian region is that of Willey (1905) based on the collections of Prof. Herdman from the Gulf of Mannar. In the paper he has described 111 species, of which 37 species and 2 varieties are new to science. Later, Southern (1921) and Gravely (1927) described the Polychaeta occurring in the Gangetic Delta, Cochin Backwaters, Chilka Lake and Krusadi Islands. These were followed by the work of Fauvel (1930, 1932 and 1940) on the polychaete collections of the Madras Government Museum and the Indian Museum. In 1953, Fauvel published a comprehensive account of the Polychaeta of India in the Fauna of India Series. In which he has described alto-

gether 462 species, of which 283 are from the coasts of India. This consists of 47 brackishwater species and 236 marine forms. Most of the brackishwater species are from Chilka Lake, Ennore Backwaters and Adayar Lake on the east coast of India. From the west coast of India (Vembanad, Veli, Kayamkulam and Ashtamudi Backwaters) he has recorded only 18 species. Later, Cheriyan (1966) described six species of polychaetes collected from the Cochin Harbour area. A detailed systematic work on the complete polychaete fauna of the Cochin Estuary is lacking. Hence an attempt has been made to study the polychaetes with special reference to their systematics and spatial and temporal distribution in the Cochin Estuary.

Material and methods

The materials for the present study were collected from March 1974 to March 1976 from five selected stations almost equidistant from one another (Fig. 1). Stations I and II were situated in the more saline

zone of the estuary and the other three stations at Thevara, Kumbalam and Aroor were situated in the southern portions of the Cochin Harbour representing a typical estuarine condition. The stations were fixed with the help of land bearings. The samplings were done during high tide at fortnightly intervals in the first year and at monthly intervals in the second year. The quantitative samples of the macrofauna were taken using a van Veen grab with an effective sampling area of 0.1 m². The grab contents were screened through a 0.5 mm square mesh sieve. After a cursory examination, the residue retained on the sieve was preserved in 5% neutral formalin for further studies. Along with the bottom fauna collections, studies on hydrographical and sediment were also carried out and the results published elsewhere (Pillai, 1977).

Results and discussion

Carricker (1967) reviewed the role of systematics in the estuarine benthic ecological research works. Hedgpeth (1957) suggested that the first procedure in ecological research is 'exercise in systematics'. Among the various animal groups represented in the macrobenthic fauna of the Cochin Estuary studied, Polychaeta was the dominant group, and was present all over the estuary throughout the period of investigation. Altogether, 91 taxa were identified from the bottom fauna and out of this, 35 species were polychaetes. Among these, 30 species belonging to 25 genera under 17 families are briefly described in the following account. Of these 30 species, the following 17 are new records from the Cochin Estuary.

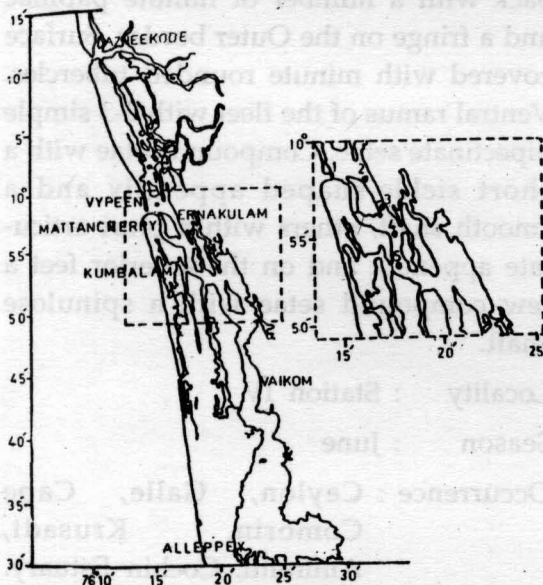


Fig. 1. Map showing the Vembanad Lake and the location of stations

1. *Lepidonotus tenuisetosus*
2. *Sthenelais boa*
3. *Ancistrosyllis constricta*
4. *Phyllodoce gracilis*
5. *Syllis cornuta*
6. *Marphysa sanguinea*
7. *Lumbriconereis latreilli*
8. *Glycera longipinnis*
9. *Polydora kemp*
10. *Prionospio cirrifera*
11. *Cossura coasta*
12. *Disoma orissae*
13. *Paraheteromastus tenuis*
14. *Sabellaria cementarium*

15. *Sternaspis scutata*16. *Loimia medusa*17. *Mercierella enigmatica*

Of these 17 new records from Cochin Estuary, most of them are recorded from an estuarine environment for the first time. Salinity and sediment characteristics are the two main factors which govern the distribution of polychaetes in Cochin Estuary. Spatial and temporal distribution of polychaetes present in the Cochin Estuary are also given along with the species description. A complete list of synonyms of species recorded in Indian waters are also furnished. The classification followed in the present study is that of Day (1967).

Family APHRODITIDAE Savigny, 1818

Sub family HERMIONINAE Grube, 1875

Genus *LEPIDONOTUS* Leach, 1816

1. *Lepidonotus tenuisetosus* (Gravier, 1901).

Euphione tenuisetosa Gravier, 1901: p.122, pl.viii, figs 123-125.

Lepidonotus tenuisetosus, Fauvel, 1953: p.36, figs. 14 c-f.

Lepidonotus tenuisetosus, Day, 1962: p.632.

Body oblong upto 15 mm long. Elytra oval, slightly reniform with a small fringe, covered with a few large and a number of smaller rounded papillae. Parapodia short and ventral setae with a rather long smooth tip and a few fringes.

Locality: Station I.

Season : June

Occurrence : Jack and Una Islands, Mergui-Archipelago, Port Canning, Off puri, Orissa, Madras, Cochin Estuary.

Distribution : Indian Ocean, Persian Gulf, Red Sea, Madagascar.

Family APHRODITIDAE Savigny, 1818.

Sub family SIGALIONINAE Malmgren, 1867

Genus *STHENELAIS* Kingberg, 1855.

2. *Sthenelais boa* (Johnston, 1839)

Sigalion boa Johnston, 1839: p.439.

Sthenelais boa, Fauvel, 1953: p.61, figs.28 a-k.

Body 100 to 150 mm long. Colour grey. Elytra reniform and overlapping over the back with a number of minute papillae and a fringe on the Outer border. Surface covered with minute rounded tubercles. Ventral ramus of the fleet with 2-3 simple bipectinate setae. Compound setae with a short sickle-shaped appendix and a smooth shaft, others with a pluri articulate appendix and on the anterior feet a few compound setae with a spinulose shaft.

Locality : Station IV

Season : June

Occurrence : Ceylon, Galle, Cape Comorin, Krusadi, Amiranti, Cochin Estuary.

Distribution : Indian Ocean, Mediterranean Sea, Atlantic Ocean.

Family HESIONIDAE Malmgren, 1867

Genus HESIONE Savigny, 1818

3. *Hesione pantherina* Riso

Hesione eugeniae, Kinberg, 1857: p.57, pl. xxiii, fig.8

Hesione ceylonica, Grube, Willey, 1905: p.266.

Hesione pantherina, Fauvel, 1953: p.104, figs.49 a-g.

Hesione pantherina, Cheriyan, 1966: p.43

Body 45 mm long, dorso-ventrally flattened and slightly tapered towards both ends. 16 setigerous segments and an anal segment devoid of parapodia. Dorsal surface of body light brown, while pale yellow ventrally.

Locality : Station IV

Season : March

Occurrence: Banka Strait, Nankauri Harbour, Nicobar Islands, Andaman

Islands, Chilka Lake, Orissa coast, Krusadi Islands, Rameswaram Island, Ceylon, Arabian Sea, Cochin Estuary.

Distribution: Pacific, Indian and Atlantic Oceans.

Family HESIONIDAE Malmgren, 1867

Genus ANCISTROSYLLIS McIntosh, 1879

4. *Ancistrosyllis constricta* Southern, 1921.

Ancistrosyllis constricta Southern, 1921: p.573, pl. xix, fig.1.

Ancistrosyllis constricta, Fauvel, 1930: p.64.

Ancistrosyllis constricta, Fauvel, 1953: p.111, figs. 54- a-d.

Body colourless, 25 mm long. A distinct neck at 4th setigerous segment, after which body becomes flat. Peristomium distinct from prostomium and bears two pairs of tentacular cirri. Flattened palps with a palpostyle. Median tentacle twice as long as the laterals, which project a little beyond the palps. Dorsal cirri on the first setigerous segment very long and tapering. An enclosed dorsal slender aciculum and, between the 30th and 40th feet, a stout sickle-shaped seta. Ventral setae capillary.

Locality : Throughout the stations.

Season : Throughout the seasons

Occurrence : Chilka Lake, Vizagapatnam, Cochin Estuary.

Distribution : India.

Family PHYLLODOCIDAE Williams, 1851

Sub family PHYLLODOCINAE Williams, 1851

Genus PHYLLODOCE Savigny, 1818.

5. *Phyllodoce gracilis* Kinberg 1857.

Phyllodoce gracilis, Kinberg, 1857: p.55. pl.xxii, fig.2.

Phyllodoce gracilis, Fauvel, 1932: p.69, fig.12.

Phyllodoce gracilis, Fauvel, 1953: p.117, figs.57 a-g.

Body long and slender, reaching 30 mm. Colour uniformly bluish-green. Prostomium heart-shaped. Two large eyes,

tentacular cirri long. Base of the proboscis covered with irregularly arranged papillae. Dorsal cirri small, oval in shape.

Locality : Stations I, III and IV.

Season : November to January.

Occurrence: Andaman Islands, Cochin Estuary.

Distribution: Australia, Society Islands, Andaman Islands.

Family SYLLIDAE Grube, 1850

Sub family SYLLINAE

Genus SYLLIS Savigny, 1818.

6. *Syllis (Langerhansia) cornuta* Rathke, 1843.

Syllis cornuta Rathke, 1843: p.164.

Syllis (Ehlersia) cornuta Fauvel, 1953: p.153, figs 79 g-i.

Body very slender, 10-15 mm long. Prostomium with four eyes. Dorsal cirri long with 12 to 20 clearly marked joints. Compound setae of two kinds present on the same feet.

Locality : Station IV

Season : April to June

Occurrence : Gulf of Mannar, Krusadi Islands, Cochin Estuary.

Distribution: Indo-China, India, Arabian Sea, Persian Gulf, Atlantic Ocean, Mediterranean Sea.

Family NEREIDAE Johnston, 1865

Genus LYCASTIS Savigny, 1818

7. *Lycastis indica* Southern, 1921

Lycastis indica Southern 1921: p.578, pl. xix, fig.2

Lycastis indica, Fauvel, 1932: p.82, pl.ii, figs. 1-2

Lycastis indica, Fauvel, 1953: p.167, figs. 84 a-b

Body slender, upto 100 mm long. Colour reddish-brown. Prostomium slightly grooved and ending in a pit. Eyes situated in a line and provided with lenses. Dorsal cirri narrow, very long and recurved towards back on posterior region. Dorsal setae very few. Hemigomph and hetrogomph spinigerous setae.

Locality : Stations I, III, IV and V.

Season : June to December.

Occurrence : Calcutta water works, Salt lakes, Calcutta, Chilka Lake, Madras, Brackish waters of India, Andaman Islands, Euryhaline from fresh water to brackish and sea water, Cochin Estuary.

Distribution: Macassar, India

Family NEREIDAE Johnston, 1865

Genus DENDRONEREIS Peters, 1854

8. *Dendronereis aestuarina* Southern, 1921.

Dendronereis aestuarina Southern, 1921: p.598, pl.xx, fig. 4.

Dendronereis aestuarina, Fauvel, 1932: p. 86.

Dendronereis aestuarina, Fauvel, 1953: p. 173, figs. 86-b.

Dendronereis aestuarina, Cheriyan, 1966: p. 43.

Length about 45 mm. Colour pale with red gills when alive. Prostomium deeply indented in front. Four large eyes present. Proboscis with soft conical papillae. Dorsal cirri bearing lateral pinnate gills from 14th-16th to 19th-21st segment. Setae homogomph with long serrated terminal piece.

Locality : Throughout the stations.

Season : Throughout the seasons.

Occurrence : Gangetic delta (in brackish water), Madras, Travancore, Cochin Estuary.

Distribution : Gulf of Siam, India.

Family NEREIDAE Johnston, 1865

Genus *PERINEREIS* Kinberg.

9. *Perinereis cavifrons* Ehlers, 1920.

Nereis (Perinereis) cavifrons Ehlers, 1920: p. 47, pl.1, figs. 6-10.

Nereis cavifrons, Fauvel, 1953: p. 210, figs. 108 a and b.

Nereis cavifrons, Cheriyan, 1966: p. 43.

Length about 60 mm. Body dorso-ventrally flattened and slightly tapering to both ends. Prostomium broader than long, notched between the tentacles. Palps and tentacular cirri short. Dorsal cirri about the length of the dorsal ligule.

Locality : Stations I, III, IV and V.

Season : Throughout the seasons.

Occurrence: North Andaman islands, Arabian Sea, Cochin Estuary.

Distribution: New Caledonia, New Hebrides, Andaman Islands, Arabian Sea.

Family NEPHTHYDIDAE Grube, 1850.

Genus *NEPHTHYS* Cuvier, 1817.

10. *Nephtys oligobranchia* Southern, 1921.

Nephtys oligobranchia Southern, 1921: p.610, pl.xxiv, fig.12.

Nephtys oligobranchia, Fauvel, 1932: p. 199.

Nephtys oligobranchia, Fauvel, 1953: p.228, figs.115 d-f.

Body 20 mm long. Prostomium with four tentacles and two small eyes. The branchiae occur fully developed on the sixth foot, disappear on 20th or 23rd foot and with a single vascular loop.

Locality : Throughout the stations.

Season : Throughout the seasons.

Occurrence : Calcutta water works and salt lakes, Chilka Lake, Vizagapatnam, Cochin Backwaters.

Distribution: Taleh-Sap; Kiangsee; Mergui; Bay of Bengal, India.

Family EUNICIDAE Savigny, 1818

Sub-family EUNICINAE Savigny, 1818

Genus *MARPHYSA* Quatrefages, 1865

11. *Marphysa sanguinea* (Montagu, 1815).

Nereis sanguinea Montagu, 1815: p.20.

Marphysa sanguinea, Gravely, 1927: p. 18.

Marphysa sanguinea, Fauvel, 1953: p.245, figs. 123 a-h.

Body stout, upto 250 mm long. In life pink-gray, bright red gills. Prostomium bilobed and tentacles short. Gills noted from 16th to 30th foot, reach a maximum of 4 to 7 filaments. Dorsal setae capillary and ventral setae compound with long knife-like terminal piece. Acicular setae slender and irregularly present in the posterior part of the body.

Locality : Station IV.

Season : March

Occurrence : Vizagapatnam, Pondicherry, Gulf of Mannar, Tuticorin, Travancore, Mormugao Bay, Goa, Cochin Estuary.

Distribution : Australia, New Caledonia, Indian Ocean, Red Sea, Atlantic Ocean, Mediterranean sea.

Family EUNICIDAE Savigny, 1818

Sub-family ONUPHIDINAE Kinberg, 1855.

Genus *DIOPATRA* Audiouin and Milne-Edwards.

12. *Diopatra neapolitana* Delle Chiaje.

Diopatra amboinensis, Willey, 1905: p.274, pl.iv, figs.95-97.

Diopatra variabilis, Southern, 1921: p.611, pl.xxv, figs. 1-4.

Diopatra neapolitana, Fauvel, 1953: p.252, figs. 126 a-h.

Diopatra neapolitana, Cheriyan, 1966: p.45.

Body very long, reaching a length of 165 mm. Tubes are straight with shell fragments. Sand particles and debris attached. Palps small and globular, two anterior tentacles shorter than the three posterior ones. Eyes absent. Gills appear on the fifth foot, with fairly long filaments covering the back, but decrease in size and disappear between 50th and 70th foot. Simple winged setae and pseudo-compound bristles present on the first 4-5 setigerous segments. In succeeding feet, simple setae with two wings and comb setae with numerous fine teeth. Hooded acicular setae bidentate. Body of the fresh specimen reddish brown in colour, with a deeper tint towards the anterior end.

Locality : All stations

Season : January to June and October to November.

Occurrence : Burma, Mergui, Gangetic Delta, Orissa coast, Madras coast; Ceylon, Gulf of Mannar, Maldive Archipelago, Cochin Estuary.

Distribution : Pacific Ocean, China Sea, Gulf of Siam, Indian Ocean, Arabian Sea, Gulf of Oman, Persian Gulf, Red Sea, Atlantic Ocean, Mediterranean Sea.

Family EUNICIDAE Savigny, 1818.

Sub-family LUMBRICONEREINAE
Malmgren, 1867.

Genus *LUMBRICONEREIS* Blainville,
1828.

13. *Lumbriconereis simplex*, Southern,
1921.

Lumbriconereis simplex, Southern, 1921:
p.625, pl.xxvi, fig. 16.

Lumbriconereis simplex, Fauvel, 1953: p.
264, figs. 133 g-i.

Body long, often reaching 150 mm. Live specimens with light reddish colour. Prostomium triangular, parapodia vascular with full of blood. Anterior lobe rounded and posterior lobe blunt conical. All setae are simple capillary and broadly winged. No hooks. There are only five setae, two in the anterior and three in the posterior lobe.

Locality : All the stations.

Season : Throughout the seasons.

Occurrence : Chilka Lake, Cochin Backwaters.

Family EUNICIDAE Savigny, 1818.

Sub-family LUMBRICONEREINAE
Malmgren, 1867.

Genus *LUMBRICONEREIS* Blainville,
1828.

14. *Lumbriconereis latreilli* Audouin
and Milne-Edwards, 1834.

Lumbriconereis japonica, Marenzeller,
1879: p. 137, pl.v. fig.3.

Lumbriconereis latreilli, Fauvel, 1953: p.
266, figs. 134 m-r.

Body slender, upto 40 mm long. Pink in colour. Prostomium bluntly conical. Anterior feet with winged capillary setae and compound hooks, extended from 1st to 50th foot. Capillaries disappear from between 40th and 60th feet. Compound hooks appear on third foot and extend to 25th foot where they are replaced by simple hooks.

Locality : All the stations.

Season : Throughout the seasons.

Occurrence : Ceylon, Tuticorin Pearl-oyster banks, Cochin Estuary.

Distribution : Cosmopolitan in temperate and tropical seas.

Family EUNICIDAE Savigny, 1818

Sub-family LUMBRICONEREINAE
Malmgren, 1867.

Genus *LUMBRICONEREIS* Blainville,
1828.

15. *Lumbriconereis heteropoda* Marenzeller,
1879.

Lumbriconereis heteropoda Marenzeller,
1879: p.30, pl.vi, fig.1

Lumbriconereis heteropoda, Fauvel, 1930:
p.30.

Lumbriconereis heteropoda, Monro, 1937:
p.297.

Lumbriconereis heteropoda, Fauvel, 1953:
p.268, figs. 135 g-h.

Body long, reaching 60 mm. Prostomium conical and simple capillary setae

on the anterior feet, followed by winged capillaries and unjointed hooks. Feet increase in length posteriorly.

Locality : Stations III, IV and V.

Season : January to June and October to December.

Occurrence : India, Marmagoa Bay, Persian Gulf, Cochin Estuary.

Distribution : Japan, Indo-China, India, Persian Gulf, Red Sea.

Family GLYCERIDAE Grube, 1850.

Genus GLYCERA Savigny, 1818.

16. *Glycera longipinnis* Grube, 1878.

Glycera longipinnis Grube, 1878: p.182, pl.viii, fig.9

Glycera longipinnis, Fauvel, 1932: p.125, pl.iv, figs.11-14.

Glycera longipinnis, Fauvel, 1953: p.291, figs. 148 a-d.

Body about 20 mm long, tapered towards both ends. White in colour. Prostomium a slender cone with about 12 rings. Proboscis covered with long and cylindrical papillae, destitute of terminal nail-like appendages. Branchiae simple, large, present from the 20th foot. Parapodia elongated with two anterior subequal, cirriform lobes and a single posterior rounded or faintly emarginate lobe.

Locality : All the stations.

Season : January to June and October to December.

Occurrence : Bay of Bengal, Cochin Estuary.

Distribution : Philippine Islands, Bay of Bengal, Persian, Gulf, Arabian Sea.

Family GLYCERIDAE Grube, 1850

Genus GLYCERA Savigny, 1818.

17. *Glycera alba* Rathke

Nereis alba Muller, 1788: p. 217, pl.2, figs. 6-7.

Glycera alba var. *Cochinensis* Southern, 1921: p.627, pl.xxvii, fig.17.

Glycera alba, Fauvel, 1953: p.292, figs. 149 i-m.

Body about 45 mm long, white in colour. Prostomium with 9 rings. Papillae of proboscis obliquely truncated. Branchiae simple, appear on the 20th foot and inserted on the dorsal edge of the foot. Parapodia with two anterior, subequal, triangular or cirriform lobes and two posterior lobes; the upper one triangular, shorter than the anterior, the lower rounded and still shorter.

Locality : Stations II, III, IV & V.

Season : Throughout the seasons.

Occurrence : Ganjam coast, Cochin Backwaters, Marmagoa Bay.

Distribution : Indian Ocean, India, Red Sea, Atlantic ocean.

Family SPIONIDAE Grube, 1850

Genus POLYDORA Bosc, 1802

18. *Polydora kemp* Southern, 1921.

Polydora kemp Southern, 1921: p.636, pl.28, figs.20 a-j.

Polydora (Crazzia) kempfi, Fauvel, 1953: p.317, figs. 167 a-c.

Length about 15 mm, colour white in life. Prostomium small, broad, and faintly notched anteriorly with a large erect occipital tentacle. Four eyes. No dorsal setae on the first foot, a ventral lobe with a row of slender capillary setae. Branchiae appear on the 7th segment. Fifth setigerous segment with normal notopodial capillaries, a double row of specialized setae and normal neuropodial setae. The specialized setae with dorsal superior setae long and narrow capillaries, the inferior dorsal setae consist of two rows of modified setae, the anterior setae are bi-limbate capillaries, short with broad wings, rapidly tapering. The posterior row consists of stout hooks and curved lips. The ventral setae lance-shaped.

Locality : Stations I, IV and V.

Season : January to July

Occurrence : In a canal at Chingrighatta, Calcutta salt lakes, Cochin Estuary.

Distribution : India.

Family SPIONIDAE Grube, 1850

Genus *PRIONOSPPIO* Malmgren, 1867.

19. *Prionospio pinnata* Ehlers, 1901

Prionospio pinnata, Ehlers, 1901: p.613

Prionospio pinnata, Monro, 1937: p.299

Prionospio pinnata, Fauvel, 1953: p.323, figs 174 e.

Length about 50 mm. White colour in life. Prostomium bluntly pointed and

enclosed between two upturned membranous wing-like lateral expansions of the peristome. Four pairs of large pinnate gills beginning on the first setigerous segment. Gills of the second pair generally smaller.

Locality : All the stations.

Season : January to May and November to December.

Occurrence : Vizagapatnam, Cochin Estuary.

Distribution : Vancouver, India, Atlantic Ocean, Arctic Ocean.

Family SPIONIDAE Grube, 1850

Genus *PRIONOSPPIO* Malmgren, 1867.

20. *Prionospio polybranchiata* Fauvel, 1929.

Prionospio polybranchiata Fauvel, 1929: p.184.

Prionospio polybranchiata Fauvel, 1930: p.39, figs. 10 a-g.

Prionospio polybranchiata Fauvel, 1953: p.324, figs. 170 a-g.

Body slender, only 15 mm long. Colour white in life. Anterior region flattened, enlarged, tapering forwards, posterior region cylindrical. Prostomium elongate, anterior border rounded. No eyes present. Two long palps reaching backwards to the 25th-30th segment. Gills appear on the second setigerous segment, the first five pairs filiform and the rest foliaceous, subtriangular, elongate. Anteriorly, both dorsal and ventral setae are capillary.

Locality : All the stations.
 Season : Throughout the stations.
 Occurrence : Gulf of Mannar, Cochin Estuary.

Family SPIONIDAE Grube, 1850

Genus *PRIONOSPIO* Malmgren, 1867.

21. *Prionospio cirrifera* Wiren, 1883.

Prionospio cirrifera, Fauvel, 1953: p.324.

Length about 30 mm. Prostomium rounded in front with a keel posteriorly which extends to the 2nd setigerous segment. No membranous prostomial wings. Long, smooth, simple gills 6-13 pairs, beginning at the 2nd setigerous segment. Anterior dorsal lamellae very large, and from 3rd to 6th feet sharp pointed. Ventral lamellae oval.

Locality : All the stations.
 Season : Pre-monsoon and post-monsoon.
 Occurrence : Vizagapatam, Cochin Estuary
 Distribution : Vancouver, India, Atlantic Ocean, Arctic Ocean.

Family SPIONIDAE Grube, 1850.

Genus : *DISOMA* Ocrstad

22. *Disoma orissae* Fauvel, 1932.

Disoma orissae, Fauvel, 1932: p. 174, fig.29, a-m.

Disoma orissae, Fauvel, 1953: p.327, fig. 172, a-m.

Body about 20-25 mm long. Prostomium elongated and slightly notched in

front, bulging in the middle and ending behind in a crest reaching to the 2nd setigerous segment. On the raised part 4 small eyes. On the first setigerous segment a large lanceolate subulate, dorsal cirrus and a ventral one directed forwards, a small bundle of capillary setae in front of the dorsal cirrus and a fan-shaped ventral bundle of setae extending beyond the peristomium. On the 2nd setigerous segment dorsal and ventral cirri, triangular, smaller than the first ones, and a ventral setae of two types: (1) an anterior row of very fine capillary setae and (2) a posterior row of stouter shorter bristles with blunt curved tips. On the third segment a large lanceolate chopper-like, dorsal cirrus, a triangular ventral cirrus, smaller than the dorsal one. The dorsal setae disappear about 11th foot. From the 9th segment backwards the dorsal cirri become filiform and the ventral ones are modified about 11-12th feet. Beyond the 11th foot long filiform ventral papillae make their appearance, a single one at first under each foot. From 9th foot backwards, the ventral setae are of (1) stout straight, bodkin-shaped and (2) very slender capillaries.

Locality : Station I

Season : Pre-monsoon.

Occurrence : Off Puri, Orissa. South West Coast of India, Cochin Estuary.

Family COSSURIDAE Day, 1963.

Genus: *COSSURA* Webster and Benedict, 1887.

23. *Cossura coasta* Kitamori, 1960.

Cossura coasta Kitamori, 1960: p. 1082, figs 1, a-f.

Cossura coasta, Thomas 1964: p.754.

Body 15 mm long, thread-like and white colour in life. Prostomium clearly demarcated with a blunt depressed cone and without eyes or appendages. Peristome and second segments partly fused, apodous and achaetous. Distinct parapodial lobes absent and the setae arise directly from the side of the body. Segment three has a single bundle of setae, but all subsequent segments with two separate bundles. The setae are all simple capillaries. A single, long slender gill arises from the dorsal surface of the setiger three. Last few segments lack setae and the pygidium bears three long filiform anal cirri.

Locality : Stations I and II.

Season : January to June and October to December.

Occurrence : Seto inland sea, Japan, Arabian Sea, Cochin Estuary.

Distribution: South-west Africa, Cape, Natal, Japan, India.

Family CAPITELLIDAE Grube.

Genus: *PARAHETEROMASTUS*, Monro.

24. *Paraheteromastus tenuis* Monro, 1937.

Paraheteromastus tenuis Monro, 1937: p.536, fig.2b.

Paraheteromastus tenuis, Fauvel, 1953: p.369, figs.194 c-f.

Body upto 20 mm long. Prostomium conical, without eyes. First four setigerous segments carry only short widely bordered capillary bristles, the remaining seven thoracic segments with large hooks. Abdominal hooks smaller than the thoracic. The body in the abdominal region is externally almost as featureless and homogeneous as that of an Oligochaete. The parapodial ridges are not well developed.

Locality : All the stations.

Season : Throughout the seasons.

Occurrence : Maungmagan, Burma, Cochin Estuary.

Distribution : Burma, India.

Family: *SABELLARIIDAE* Johnston, 1865.

Genus: *SABELLARIA* Savigny, 1818.

25. *Sabellaria cementarium* Moore, 1906.

Sabellaria cementarium Moore, 1906: p.248, pl.xii, figs.45-51.

Sabellaria cementarium Fauvel, 1932: p.209, fig. 34.

Sabellaria cementarium Fauvel, 1953: p.395, figs. 205 a-c.

Length reaching 30 mm. Tubes very hard, made of quartz grains firmly cemented together. Outer paleae end in a long slender, sharp smooth spine arising between shorter, smooth spines. Middle paleae short, smooth, spoon-like. Inner paleae hollow, elongated, smooth.

Locality : Station IV.

Season : January to June.

Occurrence : Tuticorin beach, Cochin Estuary.

Distribution : Pacific Ocean, India.

Family: STERNASPIDIDAE CARUS

Genus: *STERNASPIS* Otto, 1821.

26 *Sternaspis scutata* (Renier, 1807).

Sternaspis scutata Renier, 1807: p.34

Sternaspis scutata, Moore, 1903: p.487.

Sternaspis scutata, Fauvel, 1927: p.216, figs.76 a-g.

Body swollen, about 10 mm long, sausage-like, narrowed in the middle, expanding at both ends. Mouth subterminal. Prostomium reduced to a small knob. Anterior bristles are short and stout. Branchial filaments are numerous, often rolled into spirals.

Locality : Stations I, II, III and V.

Season : March to June

Occurrence : Burma, Mergui, Andaman Islands, Chilka Lake, Ganjam coast, Madras, Cochin Estuary.

Distribution : Pacific Ocean, Japan, Petchili, New Zealand, Australia, Indian Ocean, Atlantic Ocean, Mediterranean Sea, Arctic Seas.

Family: AMPHICTENIDAE Malmgren

Genus: *PECTINARIA* Lamarck.

Sub-genus *LAGIS* Malmgren

27. *Pectinaria (Lagis) abbranchiata*, Fauvel, 1932.

Pectinaria (Lagis) abbranchiata, Fauvel, 1932: p.215, pl.viii, figs.10-14.

Pectinaria (Lagis) abbranchiata, Fauvel, 1953: p.405, figs 212, a-e.

Body upto 15 mm long and 16 setigerous segments with capillary setae. Dorsal capillary setae winged. Unicini pectinate, with several ventral rows of numerous teeth. The hooks at the base of the scapha, about 10-12 are short, stout and set in a curved row on either side. Brachiae absent. The tube is made of single layer of transparent quartz grains held together by a yellowish cement.

Locality : Stations, I, III and IV.

Season : February, May and October to December.

Occurrence : Cochin Backwaters.

Family : TEREBELLAIIDAE Grube, 1850.

Sub-family TEREBELLINE Grube 1850.

Genus : *LOIMIA* Malmgren, 1866.

28. *Loimia medusa* (Savigny, 1820)

Terebella medusa Savigny, 1820: p.95.8

Loimia medusa, Willey, 1905: p.320, pl.vi, figs. 155-159.

Loimia medusa, Fauvel, 1953: p.416, figs.218 a-f.

Length upto 40 mm, with swollen thorax and long slender abdomen. Tentacular lobe short and collar-like. Lateral lobes of the first segment large and foliaceous. Three pairs of branched sub-equal gills present. The unicini are flat pectinate plates with 4-5 long curved teeth set in a

single row. Dorsal setae are capillary and winged. The tube membranous coated with sand and debris.

Locality : Stations III and IV.

Season : January to June and December.

Occurrence : Burma, Andaman Islands, Bay of Bengal, Ceylon, Gulf of Mannar, Cochin Estuary.

Distribution : Pacific Ocean, California, Japan, Indochina, Indian Ocean, Persian Gulf, Red Sea, Atlantic Ocean.

Family SERPULIDAE Savigny, 1818.

Genus: *MERCIERELLA* Fauvel, 1923.

29. *Mercierella enigmatica* Fauvel, 1923.

Mercierella enigmatica Fauvel, 1923: p.124, fig.1.

Mercierella enigmatica Fauvel, 1953: p.474. figs.249 a-o.

Body upto 20 mm long. Seven thoracic segments. Branchial filaments each with six to ten stout, radioles ending in naked tips, variable in length. Operculum somewhat fig-shaped, edged with about 20 blackish chitinous spines. Opercular stalk stout, thick and triangular in section. Collar setae of two kind, (1) fine capillaries and (2) serrated setae with two longitudinal rows of teeth. Unicini with a gouge and single row of five to seven teeth. Abdominal setae are geniculate capillaries with fine blades. The tube is cylindrical and made of calcareous whit-

ish, thin, wrinkled and bell-shaped at the entrance.

Locality : Station I.

Season : April

Occurrence : Ennur Backwater, Cochin Estuary.

Distribution : Worldwide in warm estuaries.

Family: TEREBELLIDAE Grube, 1851.

Sub-family: TEREBELLINAE Grube, 1850.

Genus: *PISTA* Malmgren, 1866.

30. *Pista indica*, Fauvel, 1940.

Pista indica, Fauvel, 1940.

Pista indica, Fauvel, 1953: p. 422, figs. 221 a-d.

About 15 mm long. Body rather short and plumb. Abdomen cylindrical with numerous short segments. Sixteen thoracic setigerous segments present. Three pairs of branchiae. Prostomium with long and thick grooved tentacles. Dorsal setae are capillary with narrow wings and a finely serrated tip. Unicini start on the 2nd setigerous segment.

Locality : Station IV.

Season : January and June.

Occurrence : West Narakkal, Cheppanam, Cochin Backwaters.

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