

**DESCRIPTIONS OF SOME THECATE HYDROIDS
(CNIDARIA-HYDROZOA)
FROM THE EGYPTIAN MEDITERRANEAN WATERS.**

PART III Family : Sertulariidae

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ABSTRACT

This part is the third of a series produced by the author, to meet the current need for the taxonomy of the thecate hydroids in the Egyptian Mediterranean waters. This paper deals with the family sertulariidae, which is represented in the present collection by five species: Dynamena disticha, Dynamena pumila, Sertularella mediterranea, Sertularia distance and Sertularia inflata. All of them are new records for the Egyptian Mediterranean waters. Their taxonomy, morphology and distribution are discussed.

INTRODUCTION

The family Sertulariidae is found in all oceans, but it shows much more numbers of species in cold waters (El Beshbeeshy, 1991). The medusa stage is absent in this family. The taxonomic characters used are the internode length, the hydrothecal characters such as: the portion adnate, outward flexure of the hydrotheca, number of cusps on the hydrothecal rim, internal cusps in hydrothecae of Sertularella species, length : breadth ratio of hydrothecae and arrangement of hydrothecae on the stem.

The aim of the present work is to study the taxonomy, morphology, and distribution of the collected 5 species of this family: Dynamena disticha, Dynamena pumila, Sertularella mediterranea, Sertularia distans and Sertularia inflata.

MATERIALS AND METHODS

The species described were taken from the collection deposited at the Marine Biological Reference collection centre, Institute of Alexandria. The collections were previously dredged during the period 1966-1979 from the area of the Egyptian Mediterranean waters, which lies between Port Said & West of El-Alamain.

The hydroid specimens were sorted out from the other marine bottom fauna and preserved in Formaline 10 %. They were examined under the ordinary light Microscope and Streomicroscope. The dimensions of the different species were made by means of Eye-Piece Micrometer. The descriptive Drawings were made by the aid of Camera Lucida. All sampled were documented and they are now deposited in the Marine Biological Reference collection centre, Alexandria.

Family Sertulariidae Hincks, 1868

Genus Dynamena Lamouroux, 1812

Dynamena disticha (Bose, 1802)

(Figs. 1C)

Sertularia disticha Bosc, 1802 : 101

Dynamena cornicina McCrady, 1859 : 204.

Dynamena cavolinii - Riedl, 1959 : 647.

Dynamena disticha - Lamouroux, 1812:148; Calder, 1991: 93-96.

Site of collections :

St. 3, collected by the R/V "Faras El Bahr";

St. 1, S.N. 142, 18.8.1971, 18 m.; El Alamain, St. 2, 8.1.1978, 14 m..

(S.N. = Sample number)

DESCRIPTION :

Colonies erect, arising from a creeping hydrorhiza. Hydrocaulus monosiphonic, straight, unbranched, divided into internodes by distinct or indistinct oblique nodes or distinct hinge-joints; basal part of hydrocaulus with one or more athecate internodes of varied length, articulating with internode above by an oblique hinge-joint, thecate internodes above basal part, each with an opposite pair of frontally placed

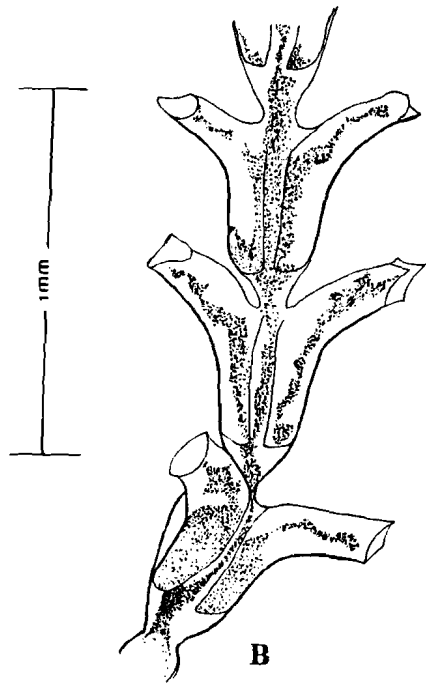
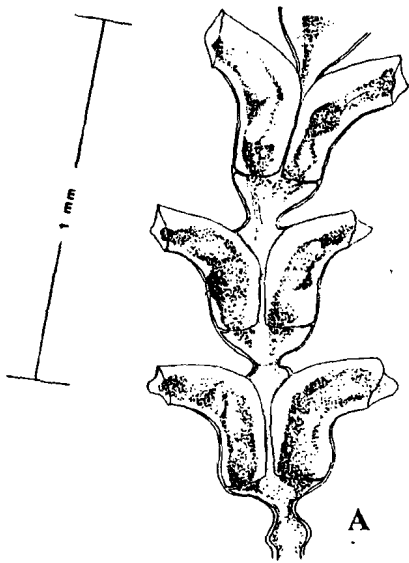


Figure 1:

A : Dynamena pumila

B : Dynamena disticha

hydrothecae. Hydrothecal pairs contiguous for a varying distance in front of internode, separated across back. Hydrothecae cylindrical; proximal half parallel with axis of internode; distal half curving outwards with orifice facing nearly perpendicular to internodal axis. Abcauline wall concave except for an occasional basal bulge; contiguous portion of adcauline wall straight; free part of adcauline wall convex. Hydrothecal orifice oval, margin with two large pointed lateral teeth and a smaller median adcauline tooth. In a few cases, it was observed, that some orifices have an operculum, which consisting of a large abcauline valve and a smaller tent-shaped adcauline valve. Gonothecae are not observed in the examined specimens.

Measurements (in mm.)

Hydrotheca

Length adnate part adcauline wall.....	0.370 - 0.400
Length free part ascauline wall.....	0.250 - 0.350
Length abcauline wall.....	0.330 - 0.500
diameter at rim.....	0.120 - 0.190

Distribution :

Dynamena disticha has a circumglobal distribution : western Atlantic (Fraser, 1944); eastern Atlantic ((Garcia Corrales, et al., 1980) Indian Ocean (Mammen, 1965); western Pacific (Park & Rho, 1986); eastern Pacific (Fraser, 1937). Dynamena disticha was previously recorded from the western Mediterranean (Gulf of Napoli) by Riedl, 1959 as Dynamena cavolinii. It was previously recorded from the Eastern Mediterranean (Coast of Alexandria) by Billard, 1936 as Dynamena cornicina and from the coast of Israel by Picard, 1958.

Remarks :

Calder, 1991 has regarded D. cornicina McCrady, 1859 and D. disticha (Bosc, 1802) as conspecific, which is followed here.

Dynamena pumila (Linnaeus, 1758)

(Fig . 1A)

Sertularia pumila (Linnaeus, 1758: 807 - 808; Hincks, 1868: 260-262.

Dynamena distans (Lamouroux, 1816 : 180).

Dynamena pumila (Lamouroux, 1812: 184; Lamouroux, 1816: 179; Broch, 1918: 115-116; Millard, 1975: 268; Cornelius, 1979 : 271-273; EL Beshbeeshy, 1991: 134-135; Stepanyants, 1985: 132.

Site of collections :

Port Said, St. 24 S.N. 191 27 12 1969, 9m El-Alamain, El-Maadia, 8 1 1970, 10 m, Sidi Krer, Sec. C, St. 2, 2 11 1978, 25 m.

Description :

Creeping stolon from which arise erect stiff monosiphonic hydrocauli, unbranched to sparsely and irregularly branched, sometimes loosely pinnate. Hydrothecae in opposite to sub-opposite pairs, with a nodal constriction between every one, two or three pairs; tubular, curved outwards, 2/3 adnate; aperture 2-cuspid, operculum fragile, 2-flapped, deciduous. Gonothecae were not observed in the examined specimens.

Variations :

It was observed, that specimens caught from Sidi Krer, from depth 25 m. showed less branching than the other specimens collected from stations at depths 9-10 m.. This agrees with other another authors (Broch, 1918; Cornelius, 1979).

Measurements (in mm.)

Hydrothecae

length adnate part adcauline wall.....	0.270 - 0.310
length free part adcauline wall.....	0.200 - 0.275
Length abcauline wall.....	0.250 - 0.320
diameter at rim.....	0.110 - 0.190

Distribution :

Dynamena pumila has a scattered field of distribution. It was found in Atlantic Coasts of North-America, Alaska, West Greenland, white Sea, coasts of England, Sweden (Cornelius, 1979). It was also found in the southern hemisphere (Argentine & Chile) (EL-Beshbeeshy, 1991).

Remarks :

It was observed from the available literature, that this species was not recorded before from the Mediterranean. It is interesting, that the specimen caught from Sidi Krer, from a depth of 25 m showed less branching than the other specimens of other stations from depths of 9-10 m. That agrees with the previous results of another authors (Broch, 1918, Cornelius, 1979).

Genus : Sertularella Gray, 1848

Sertularella mediterranea Hartlaub, 1901

(Fig. 2, A,B)

Sertularella polyzonias f. mediterranea Leloup, 1934: 13-14; Leloup, 1937: 104, 116.

Sertularella mediterranea Billard, 1932: 675; Broch, 1933: 77; Vervoort, 1946: 312; Vervoort, 1959: 272-273; Millard, 1957: 215.

Site of Collections :

St. 25, collected by R/V "Faras EL Bahr", 2.10. 1969, 12 m.; El Tarh, 10.5.1969, 6m.; St. 2, S.N. 49, 13.1.1970, 20 m.; Abu Qir, St. 13, 17.5.1970, 10m.; Abu Qir, St. 14, 17.5.1970, 15 m.; EL Burollus, S.N. 42, St.22, 28.8.1971, 10 m.; Sidi Krer, Sec. C, St. 2, 2.11.1978, 25 m.

Description :

Stem unfascicled, monosiphonical, with few side branches, broken up into indistinct internodes by oblique nodes. Hydrothecae arranged in one plane, one on each internode, alternately facing left and right, Stem between the hydrothecae straight, not geniculate. Hydrothecae slightly ventricose in basal part and narrowed at the neck. About 1/3 to 1/2 of adcauline wall adnate, length axis of hydrotheca makes an angle of about 60° with the length axis of the internode. Hydrothecal margin rectangular in cross section, produced into 4 teeth, separated by slightly curved incisions, into which the triangular plates of the closing apparatus are attached. Abcauline marginal tooth usually best developed, resulting in a sloping plane of the aperture, i.e., inclined in adcauline direction. This character, nevertheless, is variable in the different hydrothecae of a colony. There are 3 big internal thecal teeth, some distance from the margin, 1 abcauline and 2 lateral.

Gonothecae inserting directly under hydrocladial hydrothecae, ovoid, with irregularly annulated distal portion. Gonothecal aperture terminal, at the end of a short neck, surrounded by four well developed, obtuse cusps.

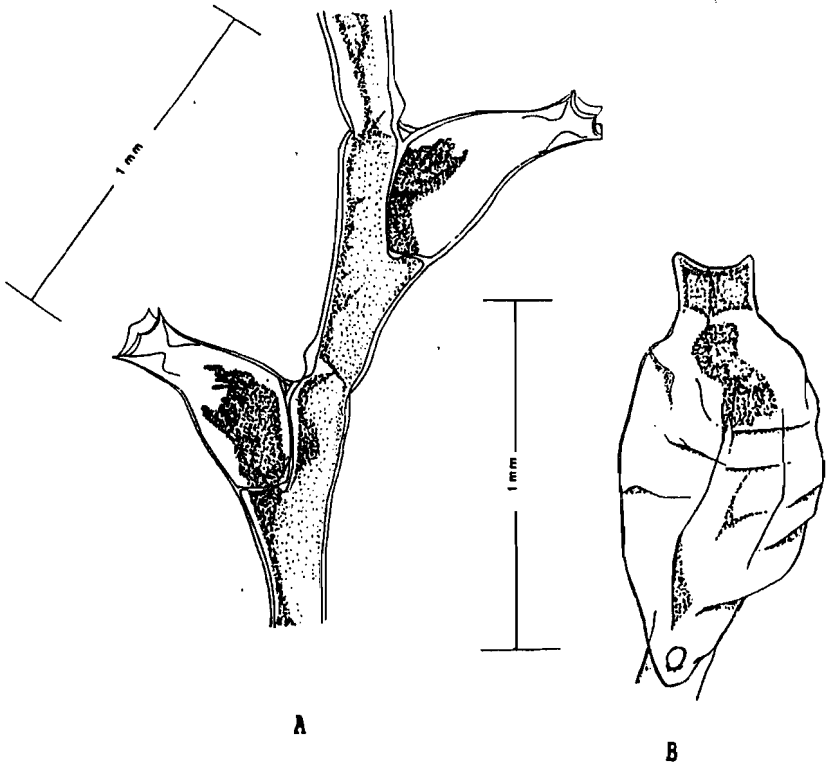


Figure 2:

A: Sertularella mediterranea

B: Gonotheca of Sert. mediterranea

Measurements (in mm.)

Internode, length.....	0.650 - 0.700
diameter across node.....	0.140 - 0.175
Hydrothecae, length abcauline wall.....	0.550 - 0.600
length adnate part adcauline wall.....	0.350 - 0.390
Length free part adcauline wall.....	0.495 - 0.510
diameter at aperture.....	0.195 - 0.205
Gonothecae, length.....	1.250 - 1.350
maximal diameter.....	0.580 - 0.600

Distribution :

This species is newly recorded from the Egyptian Mediterranean waters. It was originally recorded from the Mediterranean by Hartlaub (1901); also distributed along the tropical & subtropical coasts of West and East Africa (Billard, 1906; Stechow, 1925; Vervoort, 1946).

Remarks :

A certain amount of variability occurs in the development of the marginal and intrathecal teeth, the angle of the hydrothecal axis and the shape of the colony. Leloup (1934) and Picard (1956) go too far in considering this distinct species a form of Sertularia polyzonias (Linnaeus, 1758). Vervoort, 1959 considered S. mediterranea as a distinct species & I concur. The main difference between Sert. mediterranea & Sert. polyzonias is that the hydrothecae of the first exhibit developing of intrathecal teeth (Fig. 2 A), while the hydrothecae of Sert. polyzonias never have those teeth (El Beshbeeshy, 1991). The present material is identical with that material described by Vervoort, 1959 from Atlantide.

Genus : Sertularia Linnaeus, 1758

Sertularia distans Lamouroux, 1816

(Fig. 3 A)

Sertularia gracilis - Hincks, 1868: 262-263.

Sertularia distans Lamouroux, 1816: 191; Allman, 1877: 25; Millard, 1975: 306-307; Cornelius, 1979: 296-299; Garcia Corrales, Aguirre & Gonzalez, 1980: 49-52; Ramil & Vervoort, 1992: 227-228.

Site of collections :

St. 2, S.N. 49, 13.1.1970, 20 m.; Abu Qir, St. 17, S.N. 85, 18.5.1970, 13 m.; El Burollus, St. 22, S.N. 42, 28.8.1971, 10 m.; El Alamain (El Maadea), St. 2, 8.1.1978, 14 m.

Description :

Colony with erect, thin, monosiphonic, branched axis. Axis composed of successions of thecate and athecate internodes; thecate segments basally with oblique hidge joint and distally with transverse node, each with one or two pairs of hydrothecae; athecate internodes small and easily overlooked. Hydrothecae in opposite pairs; on frontal aspect of colony touching and adnate for part of adcauline length, on backside of colony hydrothecae of pair completely separate. Hydrothecae tubular, curving laterally; adnate part of adcauline wall c. one-third of hydrothecal depth; abcauline hydrothecal wall concave. Ramifications originating from frontal part of axis and inserting on apophysis placed on internode at point of divergence of adcauline walls of pair of hydrothecae. First internode of branch short and athecate, as athecate internodes of axis; structure of remainder of branch as in axis with exception of the hydrothecae of the first pair that do not touch along adcauline border but are completely free from each other. Gonothecae are not observed in the examined specimens.

Measurements (in mm.)

Hydrothecae, length adnate part adcauline wall.....	0.090 - 0.120
length free part adcauline wall.....	0.165 - 0.220
length abcauline wall.....	0.210 - 0.225
diameter at rim.....	0.050 - 0.065

Distribution :

Sertularia distans is widely distributed in temperate and tropical parts of the oceans (Calder, 1983). In the eastern Atlantic, it extends from the Shetland Islands in the north (Hincks, 1868) to coasts of southern Africa (Millard, 1975). It also occurs abundantly in western Mediterranean (Ramil & Vervoort, 1992). New record for the Eastern part of Mediterranean and the Egyptian Mediterranean waters.

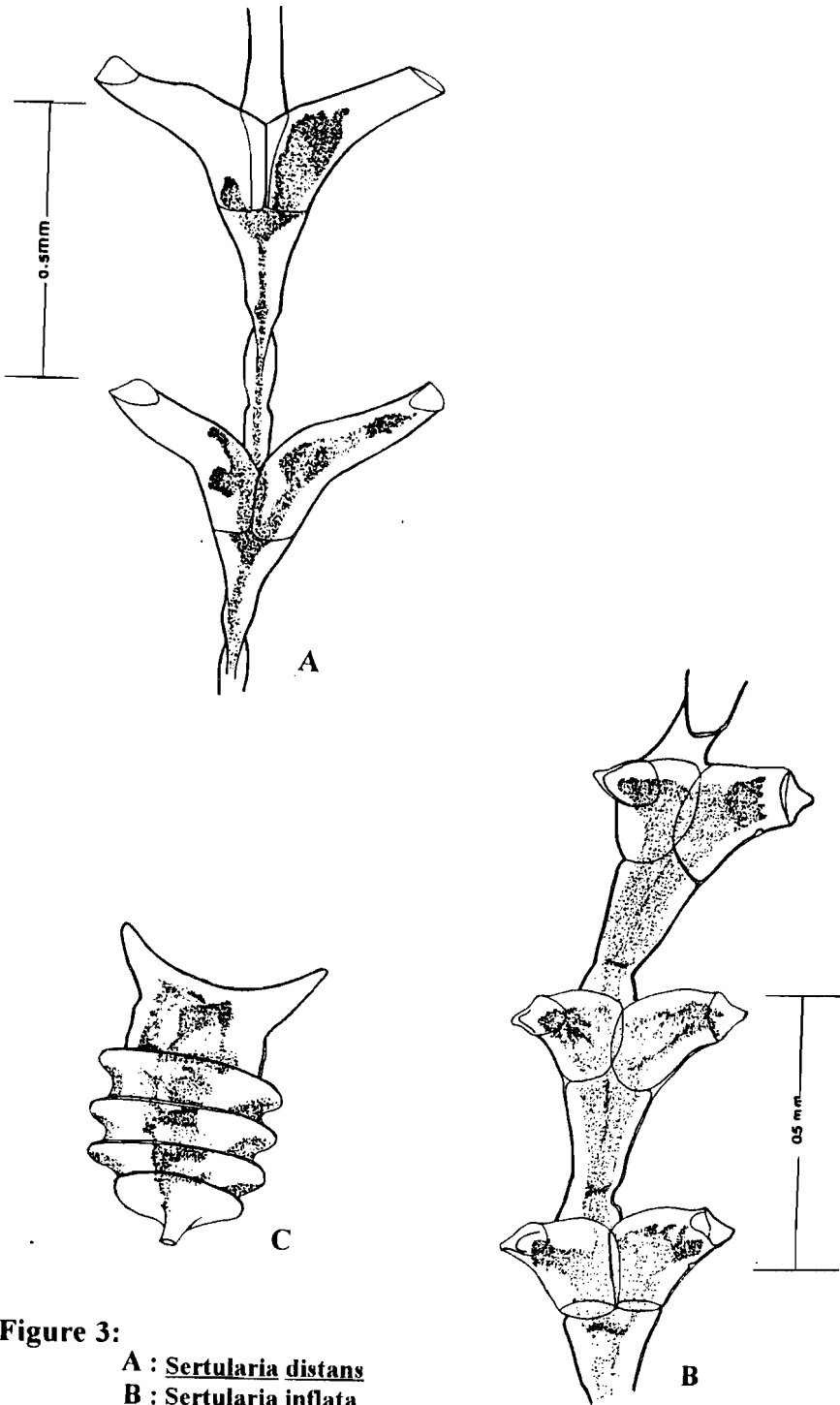


Figure 3:

A : Sertularia distans

B : Sertularia inflata

C : Gonotheca of Sert. inflata

Sertularia inflata (Versluys, 1899)

(Fig. 3. B, C)

Demoscyphus gracilis Allman, 1888; 71

Demoscyphus inflata Versluys, 1899: 42

Sertularia inflata - Vervoort, 1959: 281-284.

Site of collections :

Port Said, St. 24, S.N. 191, 27.12.1969, 9 m.; Abu Qir, St. 10, S.N. 171, 20.4.1970, 7 m.; El Dabaa, St. 3, S.N. 168, 24.4.1977, 6 m.

Description :

Gracefully built, pinnate colonies. The feather shaped colonies arise from a dense mass of hydrorhizal fibers on a worm tube. From the hydrorhiza arise long thick apophysis, connected to the main stem by means of an oblique joint, Stem geniculate between the side branches. The main stem has apophyses, alternately facing left and right, arranged in one plane supporting the side branches. The first apophyses is found directly above the oblique joint and has no thecae beneath. The first hydrothecae are found in the axil of this apophyses and immediately opposite. Between two successive apophyses, one on the right, one on the left side, there are 3 hydrothecae: one axillary, one on the same side slightly superior and one on the opposite side in the space between the two previously mentioned hydrothecae. On the hydrocaulus the thecae consequently are subopposite, but the presence of the apophysis has slightly altered the position of the axillary theca of a pair. The apophyses are directed upwards at an angle of about 50 and point slightly forwards. The side branches are attached to each internode by means of an oblique joint. The side branches are not divided into internodes, though from place to place, immediately above a pair of thecae, a constriction of the periderm may be observed. Along the branches the hydrothecae are arranged in pairs of opposite thecae; the first pair is to be found immediately above the hinge joint, here the thecae are not strictly opposite but slightly displaced. Along the sidebranch they gradually take up a strictly opposite arrangement. The adcauline wall is contiguous for more than half the length, the abcauline wall is slightly concave.

The apical portion of the theca curves outwards and upwards. The thecae are placed on the frontal aspect of the internodes; on the back they are separated by the whole width of the branch. The opening of the theca is directed obliquely upwards: the margin is set with 2 blunt lateral teeth and a small adcauline median tooth.

Gonothecae are present in the lower parts of the colonies, where they are found under non-axillary hydrothecae. They are more or less drum shaped (Fig. 3C), at the base abruptly rounded into a short stalk; at the apex truncate and with a circular lid. They have 4-5 annular grooves, separated by distinctly elevated ribs, the free margin of which is not produced into a frill but appears to be thickened. Apical part of gonotheca with two strong lateral spines, pointing obliquely upwards.

Measurements :

Hydrotheca, length abcauline wall.....	0.195 - 0.220
Length adnate part adcauline wall.....	0.140 - 0.175
Length free part adcauline wall.....	0.175 - 0.195
diameter at margin.....	0.100 - 0.110
Gonotheca, total length.....	1.00 - 1.100
maximal diameter.....	0.750 - 0.810

Distribution :

Allman's original specimens were captured off Bermuda. This species was recorded from the West South and East Africa by Millard 1957 and Vervoort 1959; 1966; 1968.

It was observed from the available literature that this species was not recorded before from the Western Mediterranean Sea. This is the first record of *Sestularia inflata* in Egyptian Mediterranean waters.

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