

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

**PART I FAMILIES : HAIECIIDAE & LAFOEIDAE**

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Key Words: Taxonomy, Cnidaria, Hydrozoa, Haleciidae, Lafoeidae.

**ABSTRACT**

*This is the first study in the Egyptian Mediterranean waters about the thecate hydroids. The Morphology, Systematic, position & distribution of four different species belonging to the thecate hydroids of the Families: Haleciidae & Lafoeidae were studied and discussed. The materials were previously collected by means of dredge along the Egyptian Mediterranean Coast between Port Said and West of El Alamain. The identified species comprise: Halecium lankesterii, Halecium delicatulum, Filellum serpens & Grammaria sp.. All these species are newly recorded for the Egyptian Mediterranean waters.*

**INTRODUCTION**

In Egypt little attention has been given to the study on the thecate hydroids. The only report was that of Billard (1933) who made a toxinomical study of 19 different species from the Gulf of Suez and Gulf of Aqaba.

In the Suez Canal, some few species were mentioned under a List of different Fouling species (EL Komi et al., 1980; Ramadan, S., 1986). The aim of the present work is to increase our Knowledge about the Taxonomy, Morphology & distribution of the thecate hydroids in the Egyptian Mediterranean waters.

The whole collections comprise 19 hydroid species, belonging to the families: Haleciidae, Lafoeidae, Campanulariidae, Sertulariidae, Plumulariidae, Halopteridae & Kirchenpaueriidae. The present paper deals with the families: Haleciidae & Lafoeidae. The others will be discussed in subsequent papers.

## ***MATERIALS AND METHODS***

The specimens were selected from deposited collections of the Marine Biological Reference collection centre, Alexandria, which previously dredged during the period 1966-1979 from the area of the Mediterranean Sea which lies between Port Said & West of EL Alamain. The collections were preserved in Formaline 10 %.

The hydroid specimens were sorted out from the other marine bottom fauna & preserved in 10 % Formaline. They were examined under the ordinary light Microscope & Streomicroscope. The dimensions of the different species were made by means of Eye-Piece Micrometer.

The descriptive Drawings were made by Camera Lucida. All samples were documented and deposited in the Marine Biological Reference collection centre, Alexandria.

### **FAMILY HALECIIIDAE HINCKS, 1868**

#### **Genus Halecium Oken, 1815**

#### **Halecium lankesterii (Bourne, 1890)**

#### **(Figs. (1) A,B & C**

Halecium robustum Pieper, 1884: 166-167; Babic, 1913: 470-473, figs. 4-6; Bedot, 1914: 82, pl.3 fig. 6; Stechow, 1919: 39-40; Teissier, 1965: 21; Fey, 1970: 397.

Haloikema lankesterii Bourne, 1890: 395-396, pl. 26.

Halecium lankesterii: Bedot, 1911: 213-217, pl. 11 figs. 1-5; Stechow, 1919: 157; Stechow, 1923d: 88; Broch, 1933: 16-17, fig. 3; Leloup, 1934: 7; Vervoort, 1949: 145; Vervoort, 1959: 221-224, figs. 3-5; Cornelius, 1975b: 399-402, fig. 8, Garcia Corrales, Aguirre Inchaurre & Gonzalez Mora, 1978: 13-14, fig. 3; Rees & Vervoort, 1987: 30.

#### **Material :**

Unknown Locality, 13.1.1970, S.N. 49; 11 m.; Abu Qir, St. 4, 17.4.1970, S.N. 166, 7 m.; Abu Qir, S.N. 13, 17.5.1970, 10 m.

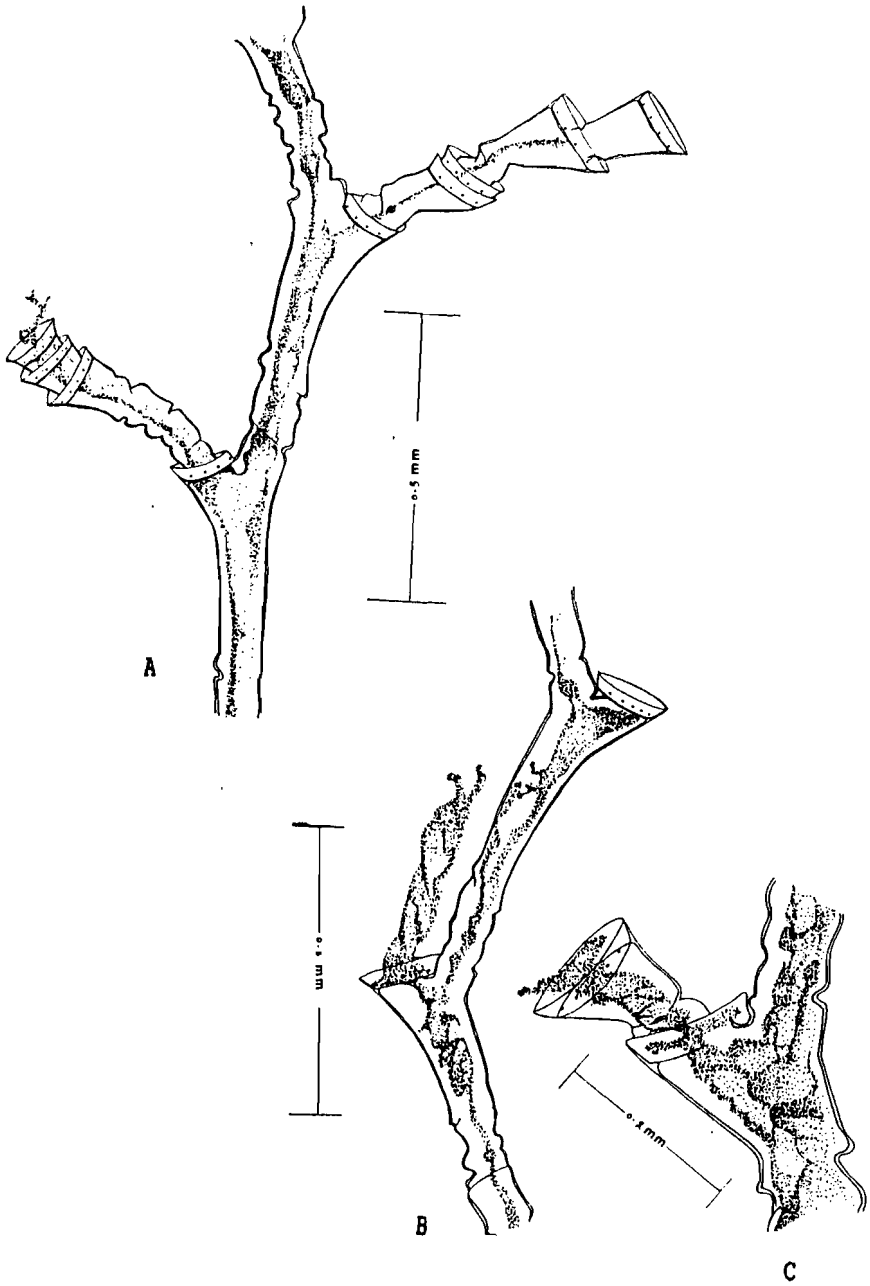


Figure 1: *Halecium lankesterii*

**Description :**

Hydrocaulus about 8 mm high, slightly branched, rising from a creeping stolon. Branched hydrocauli and ramuli in one plane, unbranched hydrocauli erect, with stem bent in zig zag fashion.

All hydrocauli monosiphonical, broken up into slender internodes, carrying the hydrophore and an apophysis; consecutive apophyses alternately directed right & left. Periderm of the internodes well developed but not particularly thick, above each previous apophysis with distinct narrowing, without forming a clear-cut ring. Primary hydrophore short, primary hydrotheca shallow with slightly flaring margins, but not everted. Primary hydrothecae provided with hydranth in the youngest parts of the colonies only; the older parts have a succession of renovated hydrophores, attached to the diaphragms of the primary, secondary, etc., hydrothecae. Primary hydrotheca with distinct diaphragm & a row of puncta between margin & diaphragm. Renovated hydrophores, of which as many as 5 may be present, with a characteristic narrowing of periderm at the basal fifth of its length, thus forming a small distal chamber. Secondary, etc., hydrothecae as the primaries with distinctly but slightly flaring margin a diaphragm & a row of puncta. Plane of opening not exactly perpendicular to the length axis of the hydrophore but slightly tilted in adcauline direction.

Hydranth partly expended, attached in the hydrotheca by means of a series of filaments, running from the disc shaped basal part of the hydranths to the puncta (fig. 1, c). Below this point the body of the hydranth is suddenly narrowed to pass the small circular opening in the diaphragm. At the place of contact with the coenosark, where it suddenly widens, a cup shaped supporting membrane attaches this connecting part with the peripheral zone of the diaphragm. The supporting membrane is a characteristic feature of the well preserved hydrothecae but it is absent from the empty hydrophores.

**Measurements (in mm.):**

Stem, diameter at node .....	0.09	-	0.12
Length of internode.....	0.58	-	0.79
Hydrophore, length from origin on previous hydrophore.....	0.11	-	0.15
Hydrotheca, length			
diaphragm-margin.....	0.02	-	0.03
margin-puncta.....	0.010	-	0.015
diameter at margin.....	0.12	-	0.13
diameter at diaphragm.....	0.100	-	0.105

**Distribution :**

Halecium lankesterii is a species with a southern & southern boreal pattern of distribution. In the southern tropical Atlantic & in subtropical & southern boreal waters its distribution seems to be wide. It was recorded from the West African Coast by Vervoort, 1959, & from the Mediterranean (Adriatic) by Broch, 1933.

**Remarks :**

This species is a new record for the Egyptian Mediterranean waters.

This species is similar to Halecium labiatum Billard, 1933, which was recorded in the Egyptian Red Sea waters but the internodes of H. labiatum are generally longer & more slender than those of H. lankesterii, H. labiatum is also rarely so profusely ramified as H. lankesterii & its stem internodes have a more geniculate arrangement.

**Halecium delicatulum Coughtrey, 1876**

**(Figs. 2A & 2B)**

Halecium delicatulum Coughtrey, 1876: 26, pl. 3. figs. 4-5; Hartlaub, 1905: 613-614, fig. L; Stechow, 1913a: 144; Stechow, 1913a: 144; Stechow, 1913: 9, 79; Bale, 1924: 235; Ralf, 1958: 334-338, figs. 11e, h-n, 12a-p; Leloup, 1960: 218-220, fig. 1; Ralph, 1966: 158; Blanco, 1968: 203-204, pl. 1 figs. 14-18, pl. 2 figs. 1-3; Patriti, 1970: 23-24, fig. 20; Vervoort, 1972a: 27-30, figs. 4-5; Vervoort, 1972b: 341-343, fig. 2a; Watson, 1973: 166; Rees & Vervoort, 1987: 25-28, fig. 5, tab.2; El Beshbeeshy, 1991: 32-37, figs. 4a, 4b.

Halecium tenellum var. mediterranea Weismann, 1883: 160, pl. 2 figs. 5-6; Nappi, 1917: 56-57, fig. 11.

Halecium flexile Allman, 1888: 11, pl. 5 figs. 2,2a

Halecium gracile Bale, 1888: 759-760, pl. 14 figs. 1-3.

Halecium parvulum Bale, 1888: 760-761, pl. 14 figs. 4-5.

Halecium flexile var. japonica Leloup, 1938: 4, fig. 1.

Halecium parvulum var. magnum Millard, 1957: 190-192, figs. 4B-O.

Halecium delicatulum f. macrothecum Leloup, 1960: 218, fig. 1B.

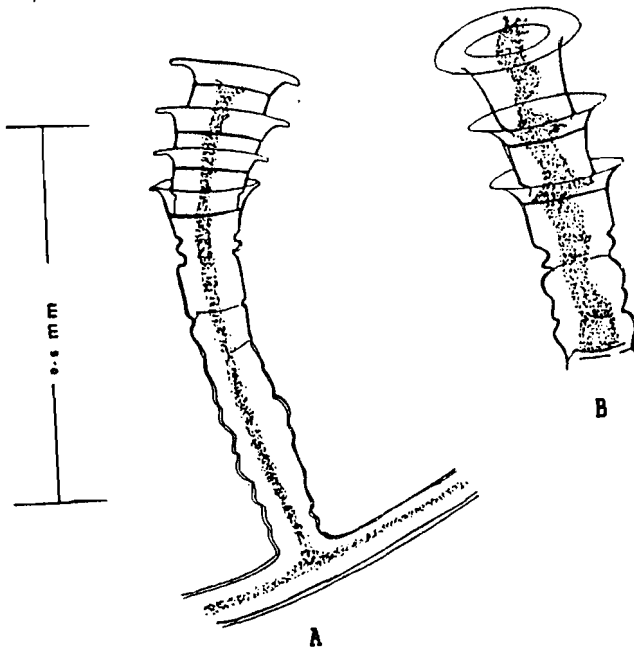


Figure 2: *Halecium delicatulum*

**Material :**

Ziad El Hamra, St. 10, 17.8.1969, 9 m; unknown locality, S.N. 49, 13.1.1970, 11 m; Abu Qir, St. 4, S.N. 166, 7 m, El Alamen, St. 2, 8.1.1978, 14 m.

**DESCRIPTION :**

Internodes very slender and terminally with pedicellate hydrophore & apophysis for next internode; hydrophore slanted laterally & upwards. Hydrotheca separated from hydrophore by distinct pseudodiaphragm, slightly thickened on both ad- & abcauline sides. Hydrotheca hyaline & rather deep; margin distinctly everted & transverse to long axis of theca or slightly titled in adcauline direction. Some basally constricted secondary hydrothecae with thin septum at constriction, attached to primary hydrotheca at level of pseudodiaphragm. Perisarc on hydrophore & internode thick & opaque. No gonothecae present.

Most of the specimens are with large numbers of hydrothecal renovations, which occur on primary hydrothecae, in places as many as 10, some of which are up to three times length of hydrophore & primary hydrotheca, but shorter distally.

**Measurements (in mm.) :**

Hydrophore, length.....	0.23	-0.27
breadth of rim.....	0.9	-0.10
Primary hydrotheca		
length.....	0.020	0.040
breadth at rim.....	0.115	0.165

**Distribution :**

This species is circumglobal in tropical and subtropical seas, in the Pacific penetrating north to Japan (Leloup, 1983, as Halecium flexile var. japonica). In the eastern Atlantic it reaches north to the coast of Morocco (Patrioti, 1970). Its southward distribution extends into the Antarctic (Stepanyants, 1979). This species is a new record for the Egyptian Mediterranean waters. Halecium delicatulum was previously recorded from numerous West Mediterranean localities: around the strait of Gibraltar (Ramil & Vervoort, 1992); along the Spanish coasts (Garcia Corrales et al., 1978), as H. tenellum.

**Remarks :**

The relation of Halecium delicatulum to Halecium pallens Jaderholm, 1904 is not clear. Both species have been synonymized by Naumov & Stepanyants (1962) & Vervoort (1972b), but have lately been separated by Stepanyants (1979); Halecium pallens being considered a purely Antarctic species (Rees & Vervoort, 1987).

**Family Lafoeidae A. Agassiz, 1865**

**Subfamily Hebellinae Stechow 1913b**

**Genus Filellum Hincks, 1868**

**Filellum serpens (Hassall 1848)**

**(Fig. 3 A-C)**

Campanularia serpens (Hassal, 1948): 2223.

Reticularia immersa (Thomson, 1853): 443, pl. 16 figs. 2,3.

Lafoea serpens (Vanhoffen, 1910): 311.

Filellum serpens (Hincks, 1868): 214, pl. 41, fig. 4; Jaderholm, 1905: 22, pl. 8 fig. 3; Broch, 1910: 160, 210 fig. 21; Billard, 1914: 11, fig. 6; Leloup, 1960: 220; Blanco, 1967b: 103 pl. 1 fig. 8; Vervoort, 1972a: 49-50, fig. 13c; Stepanyants, 1979: 49 taf. 8, fig. 9; El Beshbeeshy, 1991: 76-78, fig. 17a-c

Grammaria serpens (Broch, 1918): 16.

Reticularia serpens Millard, 1957: 203; Rees & Thursfield, 1965: 87.

**Material :**

El Tarh, 10.5.1969, 6 m; unknown locality obtained by the R/V "Faras El Bahr", St. 25, 2.10.1969, 12 m; Abu Qir, S.N. 13, 15.5.1970, 10 m; El Maadea, St. 2, S.N. 226, 28.7.1970, 10 m.

**Description :**

Colony stolonial, tortuous; branching frequent and irregular with hydrothecae at irregular intervals. Hydrothecae tubular, wider than stolons, bent upwards at 60-90° approximately in center; rim even, sometimes flared, without operculum; renovation spresent; basal 25-66.66 % of hydrotheca adnate, narrower (Naumov, 1960, 1969), wider (Vervoort, 1972) or some width as upper part, Hydrothecae more or less spaced out depending on amount of substrate available (Hincks, 1868). Hydranth greenish (Hincks, 1868) or lemon-yellow (Hamond, 1957); tubular, with conical hypostome.



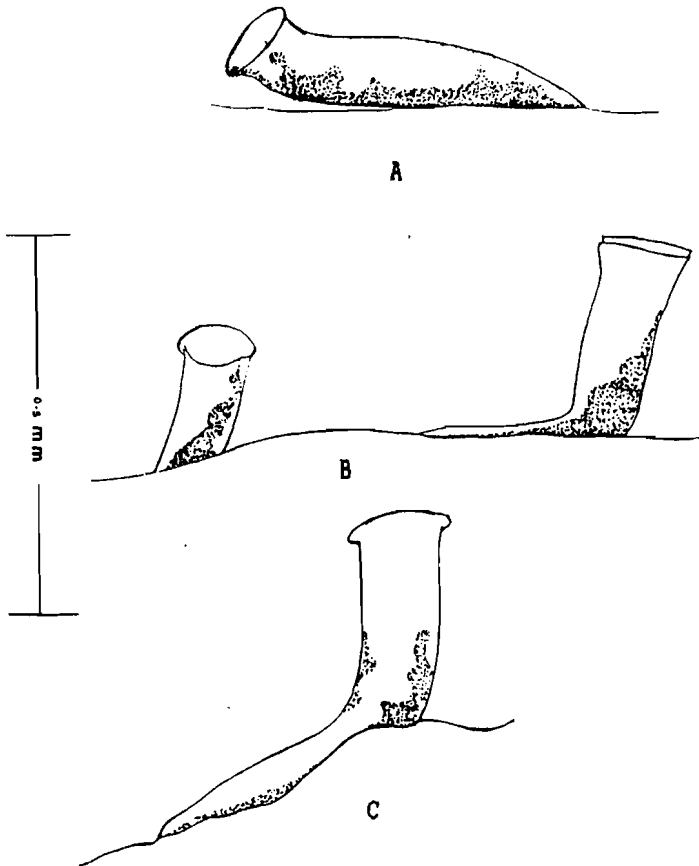


Figure 3: *Filellum serpens*

**Measurements (in mm.) :**

Hydrotheca

Diameter at rim.....0.100-0.175

Length of free part.....0.90 -0.310

Length of attached part.....0.180-0.300

Hydrorhiza

Diameter of stolon.....0.06 -0.10

**distribution :**

Filellum serpens is a cosmopolitan species, (Vervoort, 1972a), its distributional area ranging from the Arctic (Broch, 1910) to the Antarctic (Vanhoffen, 1910) Oceans. This species is a new record for the Egyptian Mediterranean waters.

**Remarks :**

The separation of F. serpens from the much more abundant F. serratum (Clarke, 1879), which was recorded in the Egyptian Red Sea waters by Billard, 1933, is exclusively based on the condition of the basal part of the hydrotheca, which is smooth in F. serpens and has a fine, transversal striation in F. serratum.

Genus Grammaria Stimpson, 1854

Grammaria sp.

(Fig. 4)

Material :

El Dabaa, St. 3, S.N. 168, 24.4.1977, 6 m.

Description :

The colony is more or less pinnate, with unbranched or slightly branched main stems of about 6 cm high. The side-branches are opposite, sub-opposite or alternately arranged along the hydrocaulus & with the main stems arranged in one plane, so that the general shape of the colony is pinnate.

The tubuliform hydrothecae are arranged in 5 rows. In a cross section of the hydrocaulus, consequently, three hydrotheca are arranged in one row, the hydrotheca of the subsequent row alternate with that of the preceding row. The hydrothecae are tubular, the greater part adnate to the primary tube and gradually covered by secondary tubules. The exact length of the hydrotheca or the total length of the free portion is therefore difficult to measure. The diameter of the opening of the hydrotheca varies between 0.210 and 0.350 mm. The aperture of the hydrotheca is circular, some hydrothecae are slightly everted.

Remarks :

This specimen demonstrates the general characters of the Genus Grammaria Stimpson, 1854, which are :

Hydrocaulus polysiphonic, branched; hydrothecae tubular, outward-curving, even-rimmed, lacking operculum and diaphragm, arranged in longitudinal rows (Cornelius, 1975), but in the same time it does not closely fit with any of the Grammaria species in available literature. In my opinion it is probably a new Grammaria species, but because this material is scanty and has no Copinia, I will let this species as Grammaria sp. awaiting for additional materials in future.

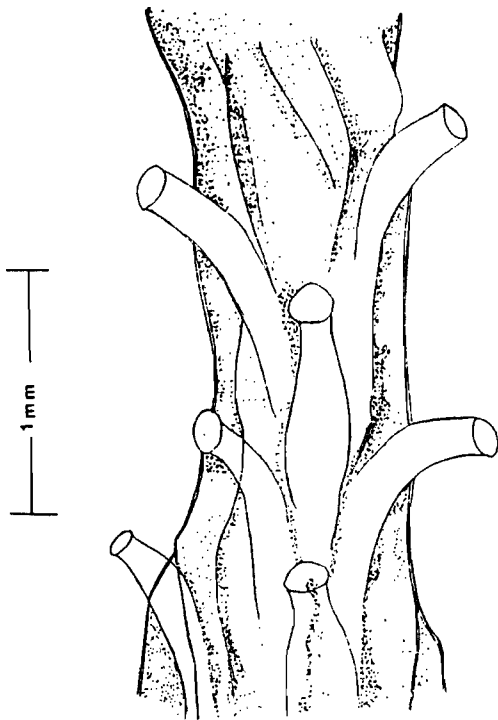


Figure 4: *Grammaria* sp.

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