

Cnidaria, Hydrozoa, Leptolida, Anthoathecata, Candelabridae

*Candelabrum phrygium* FABRICIUS, 1780

**Size:** 7-9 cm.

**Color:** White to brownish.

**Morphology:** Body in extended condition slender, composed of foot, blastostyle bearing region and trunk. Foot lobed and flattened part of body, attaching animal to rocks or bivalve molluscs. Blastostyle bearing region occupying one third to one quarter part of body, with 10-15 large, tubular blastostyles, bearing male or female gonophores in various stages of development and dispersed capitate tentacles; apex of each blastostyle with circle of 4-5 such tentacles. Remainder of body forming elongated, tubular trunk, completely covered by capitate tentacles. Mouth at distal end of trunk. Nematocysts: Haplonemes 19.7-

20.5 x 8.2-9.9  $\mu\text{m}$ ; small desmonemes 8.2-9.0 x 6.4 x 6.6  $\mu\text{m}$ ; large desmonemes 12.5-13.0 x 9.0-9.8  $\mu\text{m}$ ; stenoteles 10.6-11.5 x 8.2-9.8  $\mu\text{m}$ .

**Biology:** Attached to rocks or other solid objects. Lucky Strike specimens were attached to flange formations and occasionally to organic support (shells of living bivalves). Carnivorous animal, feeding on shrimps and other small crustaceans. Dioecious, development of larva unknown, but probably young polyp develops inside female gonophore.

**Distribution:** Circumarctic, occurring both in Atlantic and Pacific Oceans. Mid-Atlantic Ridge: Lucky Strike and Rainbow.



1: Several animals in situ on substrate; cruise Diva 2 © Ifremer.



2: Preserved specimen on small rock in Lucky Strike area, Mid-Atlantic Ridge; by P. Briand © Ifremer.

**Reference:**

SEGONZAC M. & W. VERVOORT (1995) Bull. Mus. Natl Hist. Nat., Paris, 4e sér. **17**(1-2): 31-64.

W. VERVOORT & M. SEGONZAC

Denisia **18** (2006): 49

Cnidaria, Hydrozoa, Hydroida, Anthomedusae, Candelabridae

*Candelabrum serpentarii* SEGONZAC & VERVOORT, 1995

**Size:** 10 cm.

**Color:** white, whitish or pale orange.

**Morphology:** Robust, gelatinous body composed of foot, blastostyle bearing region and trunk, attached to pillow lava or sulfide rocks by means of (flattened) foot covered by thick, dark brown perisarc. Blastostyles on proximal part of body large, bearing a number of male and female gonophores in various stages of development; elongated trunk completely covered with capitate tentacles, in extended condition several mm long. Mouth at distal end of trunk. Nematocysts: Haplonemes 16.5-18 x 7.8-8.2  $\mu\text{m}$ ; desmonemes 13-14.5 x 9.8-10.5  $\mu\text{m}$ ; stenoteles 9.8-11.5 x 9.5-10.5  $\mu\text{m}$ .

**Biology:** Attached to rocks (pillow lava or sulfide rocks) in vicinity of active vents. Probably exclusively carnivorous, feeding on pericarideans and shrimps. Reproduction: Monoecious with hermaphroditic gonophores; development of larva unknown, but probably young polyp (actinula) developing in female gonophore.

**Distribution:** Mid-Atlantic Ridge: Snake Pit.



1: In situ, Snake Pit area, Mid-Atlantic Ridge; cruise Hydrosnake © Ifremer.



2: In situ, Snake Pit area, Mid-Atlantic Ridge; cruise Hydrosnake © Ifremer.

**Reference:**

SEGONZAC M. & W. VERVOORT (1995) Bull. Mus. Natl Hist. Nat., Paris, 4e sér. **17**(1-2): 31-64.

W. VERVOORT & M. SEGONZAC

Denisia **18** (2006): 50

## *Eudendrium planum* BONNEVIE, 1898

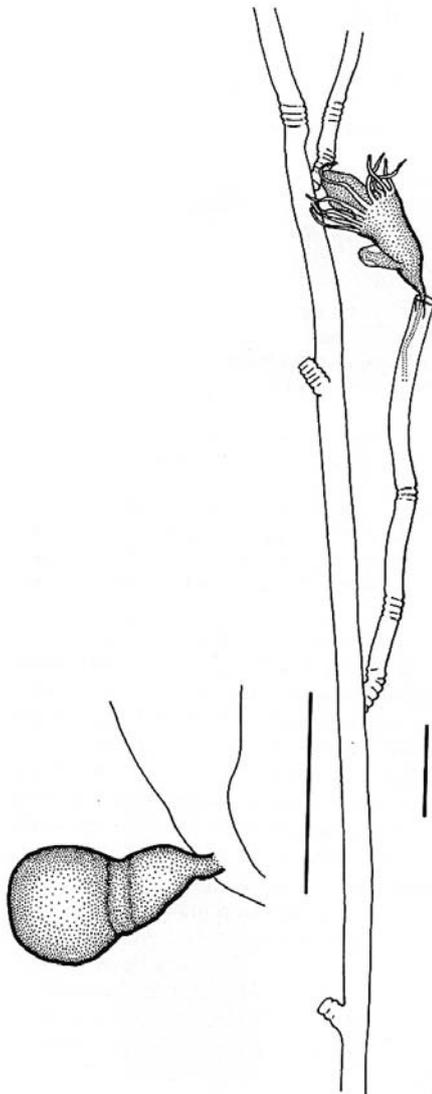
**Size:** Colonies up to 90 mm high, branching reduced.

**Morphology:** Colonies slender, stiff, sparsely branched, hydrorhiza creeping, growth monopodial with terminal hydranth. Stem stiff, upright, basally polysiphonic but largely monosiphonic; branching irregular, more or less in one plane, pedicels alternate, long. Perisarc thick, yellowish, thinning out distally, terminating at bases of hydranths. Annulations present at base of pedicels and branches, occasionally elsewhere but perisarc mostly smooth. Hydranths about 500  $\mu\text{m}$  long, urn-shaped, with large, flared hypostome. Tentacles filiform, numbering about 20. Gonophores fixed sporosacs. Male gonophores with

one or two chambers, attached to non-reduced hydranths. Female gonophores undescribed. Nematocysts: macrobasic euryteles 12.9-14.1 x 5.5-6.4  $\mu\text{m}$ ; heterotrichous microbasic euryteles 7.5-8.4 x 3.9-4.6  $\mu\text{m}$ .

**Biology:** Attached to fixed object like stones or rocks. At Lucky Strike site, attached to flanges where mussels are fixed. Probably a dioecious species feeding carnivorously.

**Distribution:** Deep water of the north-eastern Atlantic; Mid-Atlantic Ridge: Logatchev, Lucky Strike, Rainbow.



1 right side: Part of hydrocaulus with pedicel and (damaged) hydranth; scale bar 0.5 mm; left side: Male gonophore attached to base of hydranth; scale bar 0.25 mm; from CALDER & VERVOORT (1998).

### Reference:

CALDER D.R. & W. VERVOORT (1998) Zool. Verh., Leiden **319**: 3-65.

W. VERVOORT & M. SEGONZAC

Denisia 18 (2006): 51





## *Halisiphonia arctica* KRAMP, 1932

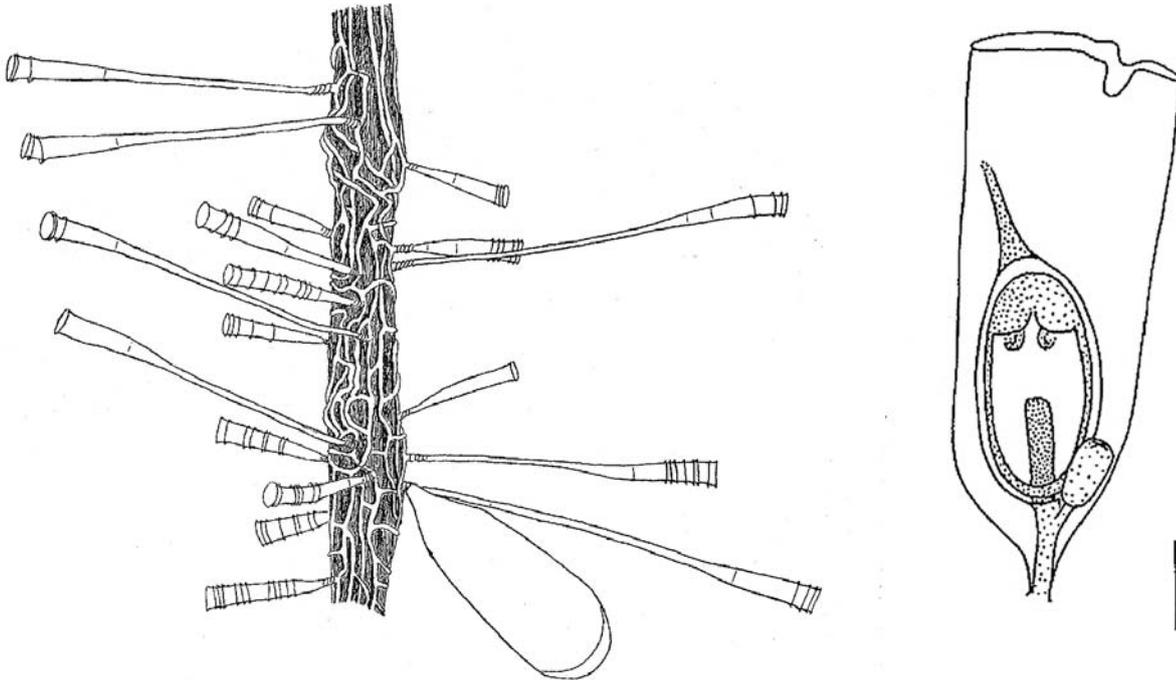
**Size:** Length of hydrotheca about 1 mm; length of pedicel up to 3 mm.

**Morphology:** Stolonal colony with hydrothecae and gonothecae developing from branching and anastomosing stolons. Hydrothecae pedicellate, pedicel up to 3 mm long, smooth, with some proximal annulations, merging into almost tubular to slightly conical hydrotheca, separated from pedicel by quite thin diaphragm. Hydrothecal rim slightly everted, frequently renovated. Hydranth unknown. Gonothecae big, flattened, about 2.5 mm long, spade-shaped, proximally narrowing into a

short, ringed pedicel, distally open, truncated, rim notched. Gonophores developing free medusae that are so far undescribed. Nematocysts: Unknown.

**Biology:** Attached to firm substrate. Although it seems clear that the gonophore develops free medusae these are undescribed so far. The presence of free medusae in *Halisiphonia* brings it close to such species of *Hebella* that also have a free medusa in their life-cycle.

**Distribution:** Mid-Atlantic Ridge: Logatchev.



1: Colony composed of hydrothecae of varied lengths and a gonotheca on stem of hydroid. Length of hydrotheca, including pedicel, 0.8- 5.0 mm; from KRAMP (1932).

2: Gonotheca with developing medusa; scale bar 0.5 mm; from SCHUCHERT (2001).

### References:

- KRAMP P.L. (1932) Medd. om Grønland **79**: 1-86.  
SCHUCHERT P. (2001) Medd. Grønland Biosci. **53**: 1-184.

Cnidaria, Hydrozoa, Leptolida, Leptothecata, Lafoeidae

*Grammaria abietina* M. Sars, 1850

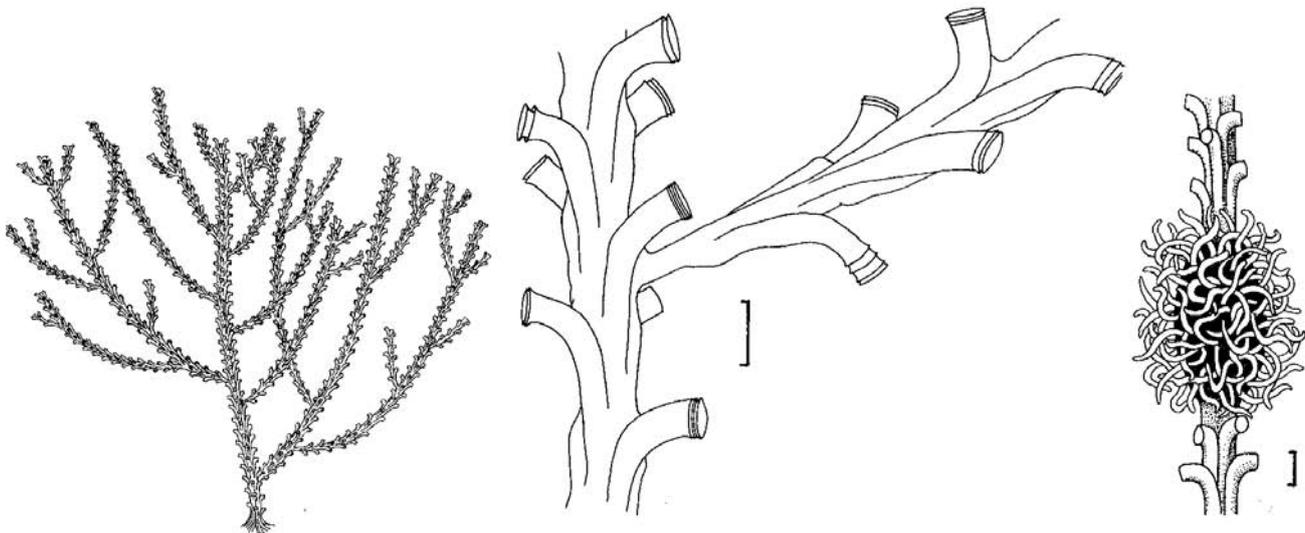
**Size:** Colonies from the Mid-Atlantic Ridge are a few cm high; in boreal and subarctic waters colonies may reach a size of 100 mm.

**Morphology:** Irregularly branched, erect colonies with polysiphonic stems and branches, only distal parts of branches monosiphonic. In these parts hydrothecae placed in four, six or (rarely) eight longitudinal series with hydrothecae of adjacent rows alternate; in quadriseriate colonies hydrothecae in opposite pairs and decussate. Polysiphony caused by copious development of secondary tubules obscuring structure of polysiphonic stems and branches. Hydrothecae tubular, half of adcauline wall adnate to stem or branch, curved outwards, rim circular, not flared, frequently renovated. No nematophores or nematothecae. Total length of hydrotheca 1.1-1.3 mm, diameter at

rim 270-306  $\mu\text{m}$ . Gonothecae aggregated into ovoid coppiniae with many strongly curved tubules projecting from between gonothecae. Coppiniae hermaphroditic, female gonothecae amphora-shaped, narrowing into short neck distally; male gonothecae globular and pedicellate. Eggs developing in an acrocyst projecting from female gonothecae. Nematocysts: Not described in detail, "large and small nematocysts" (BROCH 1918) being present.

**Biology:** Colonies developing on solid substrata. Eggs brooded in an acrocyst.

**Distribution:** Mid-Atlantic Ridge: Menez Gwen. Generally recognized as a circumpolar species, extending its distribution southwards in the deep water of the northern Atlantic.



1 left: Colony; high about 6 cm; by CORNELIUS (1995); middle: Part of stem with side-branch; scale bar 0.5 mm; from CORNELIUS (1995); right: Arrangement of hydrothecae around stem; scale bar 0.25 mm; from CALDER & VERVOORT (1998).

References:

- BROCH H. (1918) Danish Ingolf-Expedition 5(7): 1-205.  
CALDER D.R. & W. VERVOORT (1998) Zool. Verh., Leiden 319: 3-65.  
CORNELIUS P.F.S. (1995) North-West European Thecate Hydroids and their Medusae, 1. Synopses of the British Fauna (New Series) 50: vii, 1-347.





Cnidaria, Hydrozoa, Leptolida, Leptothecata, Lafoeidae

*Zygophylax leloupi* RAMIL & VERVOORT, 1992

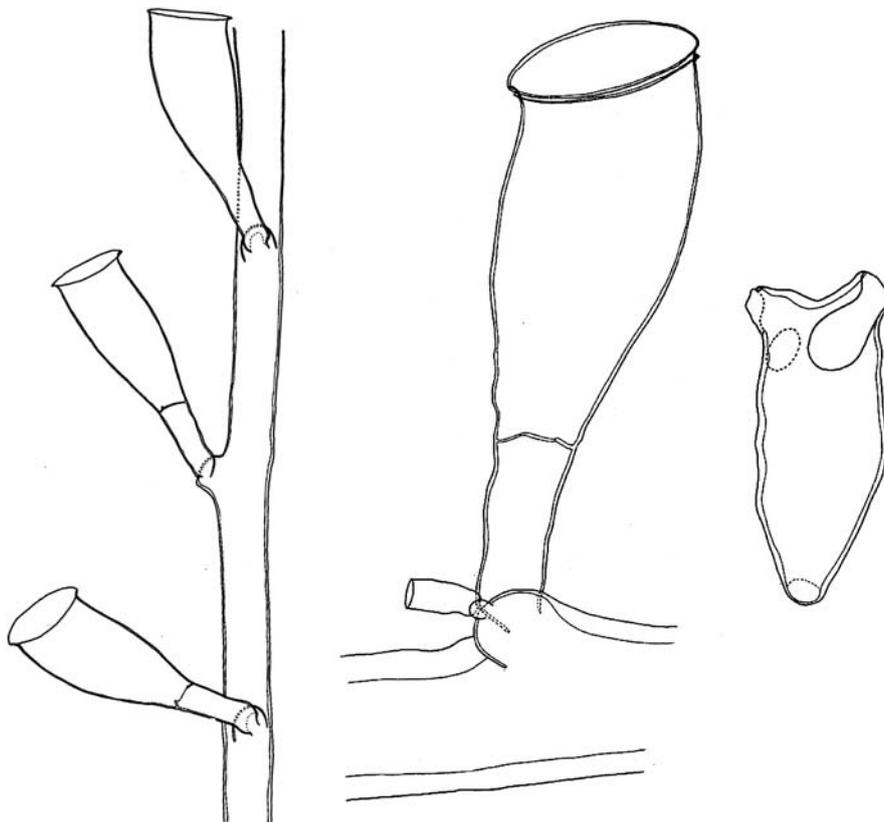
**Size:** Height of colony up to 140 mm.

**Morphology:** Structure of colony in principal as in *Z. echinata* CALDER & VERVOORT, 1998, but colony generally bigger, with stronger, repeatedly bifurcated stem, with longer hydrocladia and distinctly pedicellate, big hydrothecae that are distinctly frontally directed. Length of hydrotheca (from diaphragm onwards, without renovations) 500-650  $\mu$ m, diameter at rim 280-340  $\mu$ m; renovations frequent. Pedicel long, wrinkled or with septa, 270-250  $\mu$ m; diaphragm distinct but thin, occasionally duplicated. Aperture of hydrotheca slightly tilted, rim everted, diameter 210-325  $\mu$ m. Nematothecae scarce, frequently dis-

lodged, on apophyses of hydrothecae, cylindrical, proximally rounded and shortly pedicellate. Gonothecae aggregated into loose coppinia without nematophorous ramules, ovoid, distally with two or three short tubular processes each with terminal aperture. Coppinia surrounding proximal part of stem. Nematocysts: Not described.

**Biology:** Attached to solid substrata, among mussel bed.

**Distribution:** Mid-Atlantic Ridge: Rainbow; seamount at Segment 38°N, 919 m.



1 left: Monosiphonic part of stem with three hydro-thecae; middle: Hydrotheca and nematotheca; right: Gonotheca isolated from coppinia. Length of hydrotheca about 0.8 mm, length of gonotheca 1.0-1.4 mm; from RAMIL & VERVOORT (1992).

**References:**

- CALDER D.R. & W. VERVOORT (1998) Zool. Verh., Leiden **319**: 3-65.  
RAMIL F. & VERVOORT (1992) Zool. Verh., Leiden **277**: 3-262.

Cnidaria, Hydrozoa, Leptolida, Leptothecata, Sertulariidae

*Hydrallmania falcata* LINNAEUS, 1758

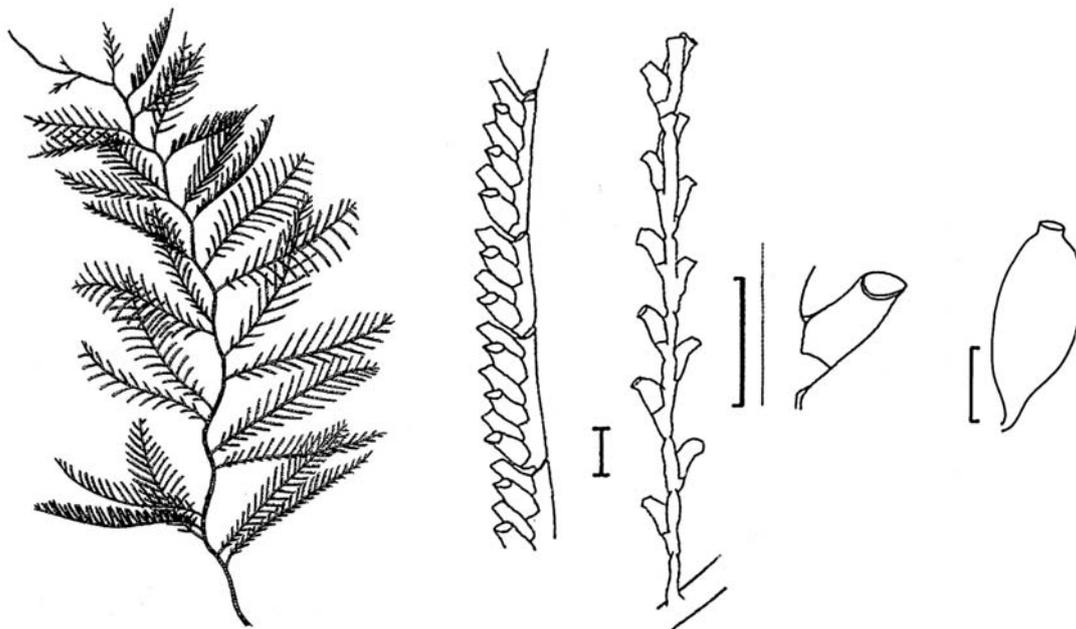
**Size:** Full grown colonies may reach a length of 650 mm; usually much smaller.

**Morphology:** Colony lax, with characteristic, spirally twisted, monosiphonic stem, supporting branches of 20-40 mm length with pinnately arranged hydrocladia. Each hydrocladium divided into internodes, supporting closely packed groups of 3-10 hydrothecae, alternately inclined left or right to a moderate degree. Hydrotheca more or less tubular, largely free, slightly narrowing distally, aperture circular, operculum two-flapped. Total length of hydrotheca 300-400  $\mu\text{m}$ ; greatest diameter 130-190  $\mu\text{m}$ ; diameter at rim 80-140  $\mu\text{m}$ . Male and female gonothecae similar, elongated pear-shaped, narrowing proximally into short pedicel attaching gonothecae to internode of hydrocladium;

aperture on short distal tube, rather wide. Length of gonothecae 1.2-1.7 mm; greatest diameter 550-700  $\mu\text{m}$ . Nematocysts: Not described in detail.

**Biology:** Frequent on soft bottoms in shallow to moderately deep waters, particularly in temperate regions. One of the few species of Leptolida was (and probably still is) commercially exploited. Gonothecae produced in early spring. Colonies serve the attachment for mussel spat.

**Distribution:** Mid-Atlantic Ridge: Lucky Strike. Shallow to moderately deep waters of the temperate and northern Atlantic; not a deep water species.



1: Colony, height about 9 cm; from CORNELIUS (1995).

2 from left to right: Normally developed hydrocladium; hydrocladium from young colony (similar arrangement of hydrothecae occasionally also in older colonies); hydrotheca; gonothecae; scale bars 0.5 mm; from CORNELIUS (1995).

References:

CORNELIUS P.F.S. (1995) North-West European Thecate Hydroids and their Medusae, 2. Synopses of the British Fauna (New Series) **50**: VII, 1-386.  
RAMIL F & W. VERVOORT (1992) Zool. Verh., Leiden **277**: 3-262.

Cnidaria, Hydrozoa, Leptolida, Leptothecata, Sertulariidae

*Sertularella tenella* ALDER, 1856

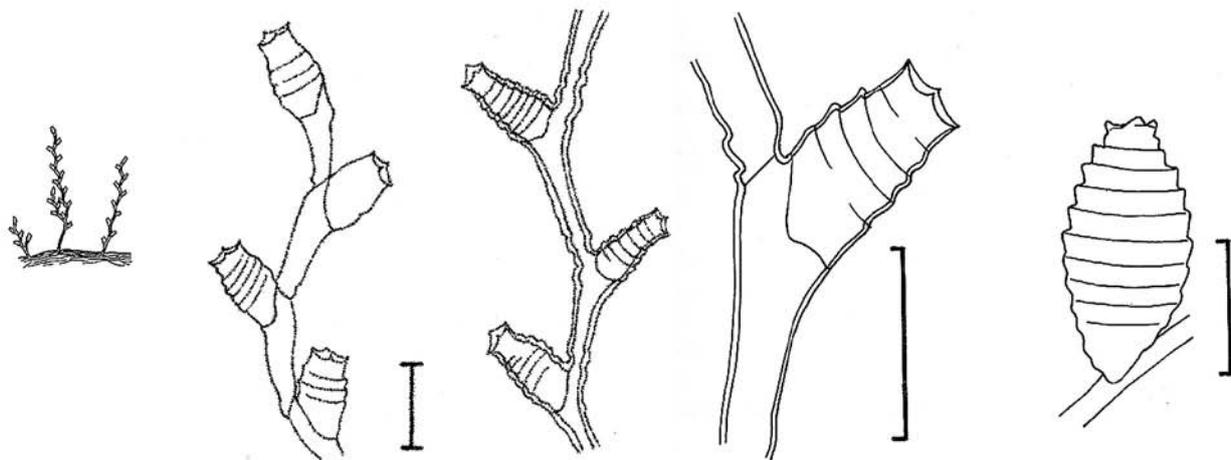
**Size:** Erect colonies about 20 mm high or smaller.

**Morphology:** Monosiphonic, occasionally branched stem arising from firm, tortuous stolon attached to solid substrate or host; stem geniculate, composed of slender internodes with a few basal rings; nodes indistinct. Hydrotheca with almost fee abcauline wall, almost cylindrical to slightly swollen in proximal half, with six annulations, best visible on abcauline side; depth 450-840  $\mu\text{m}$ , greatest diameter 220-370  $\mu\text{m}$ . Rim with four low cusps; operculum four-flapped, flaps attached in embayments between marginal cusps. Female and male gonotheca

undistinguishable, ovoid, 900-2.000  $\mu\text{m}$  long, greatest diameter 550-1.000  $\mu\text{m}$ , with 8-10 transverse annulations; apex with 3-4 low cusps surrounding a small, circular aperture. Nematocysts: Not studied in detail.

**Biology:** Frequently on foliate Bryozoa and epizoic on other hydrozoans.

**Distribution:** Mid-Atlantic Ridge: Lucky Strike, Sintra. Circumglobal in deeper parts of the littoral zone to greater depths (1000-2000 m).



1: From left to right: three stems arising from stolonial tubes; part of stem; another part of stem from different colony to illustrate variability in development of nodes and shape of hydrotheca; hydrotheca; gonotheca; scale bars 0.5 mm; by Cornelius.

**References:**

- CALDER D.R. & W. VERVOORT (1998) Zool. Verh., Leiden **319**: 3-65.  
RAMIL F. & W. VERVOORT (1992) Zool. Verh., Leiden **277**: 3-262.

*Symplectoscyphus bathyalis* VERVOORT, 1972

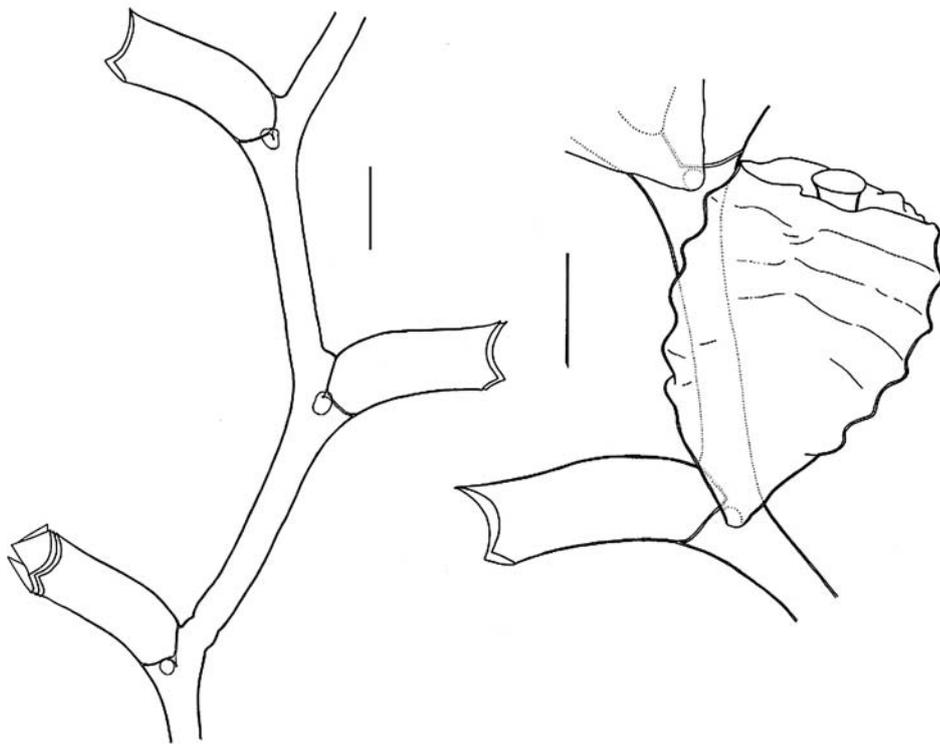
**Size:** Height of colony up to 80 mm.

**Morphology:** Erect colony, rising from creeping stolon. Proximal parts of stem and branches polysiphonic; branching irregular, basal part of stem ahydrothecate. Monosiphonic parts of colony composed of long, slender, geniculate internodes separated by nodes sloping in alternate directions. Hydrothecae 950-1.200  $\mu\text{m}$  deep, greatest diameter about 500  $\mu\text{m}$ , placed at end of internode, one-fifth of abcauline wall adnate, curved outwards, slender, abcauline wall convex, abcauline wall bulging in proximal third. Hydrothecal rim not everted, occasionally renovated, with three prominent cusps, one abcauline, two lateral. Three triangular opercular plates attached in embayments between marginal cusps, no renovations of opercu-

lum observed. Gonotheca pyriform, 1.7 mm high; greatest diameter at two-thirds of distance from top, with about seven transverse ribs, petering out proximally. Orifice at end of a short tube in middle of apical 'field' formed by distalmost rib. Pedicel quite short, attaching gonothecae to internode at hydrothecal base. Nematocysts: Not studied in detail.

**Biology:** On solid substrates in deep ocean water.

**Distribution:** Mid-Atlantic Ridge: Lucky Strike, Sintra site. Deep water of Atlantic (Bay of Biscay) and Pacific (off Chile and SE of New Caledonia).



1 from left to right: Monosiphonic part of stem with three hydrothecae; part of monosiphonic stem with hydrotheca and gonotheca (drawn from slide; gonotheca slightly compressed); scale bars 0.5 mm; from CALDER & VERVOORT (1998).

**References:**

- CALDER D.R. & W. VERVOORT (1998) Zool. Verh., Leiden **319**: 3-65.  
VERVOORT W. (1972) Zool. Verh., Leiden **120**: 3-247.

























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