

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 µm; small desmonemes 8.2-9.0 x 6.4 x 6.6 µm; large desmonemes 12.5-13.0 x 9.0-9.8 µm; stenoteles 10.6-11.5 x 8.2-9.8 µm.

**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

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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.

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Cnidaria, Hydrozoa, Leptolida, Anthoathecata, Eudendriidae

*Eudendrium planum* BONNEVIE, 1898

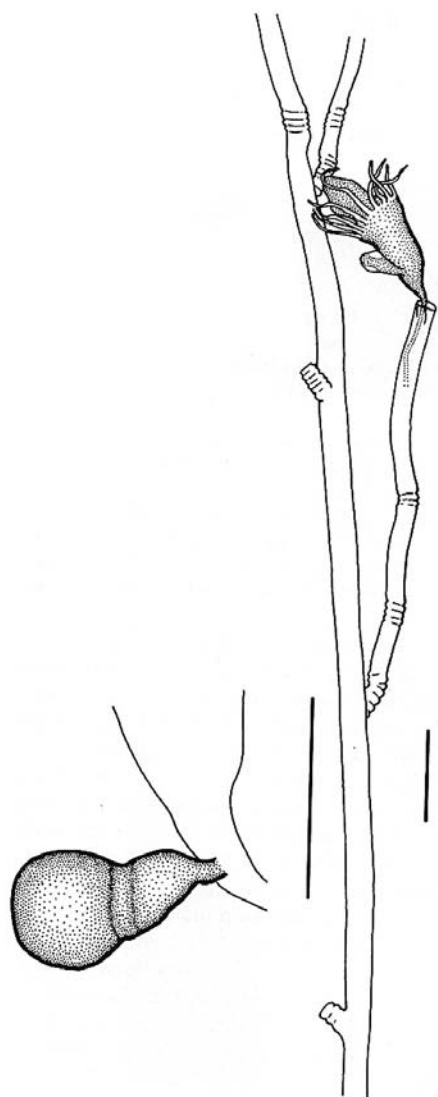
**Size:** Colonies up to 90 mm high, branching reduced.

**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 µm 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 µm; heterotrichous microbasic euryteles 7.5-8.4 x 3.9-4.6 µm.

**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

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Cnidaria, Hydrozoa, Leptolida, Anthoathecata, Tubulariidae

*Ectopleura larynx* ELLIS & SOLANDER, 1786

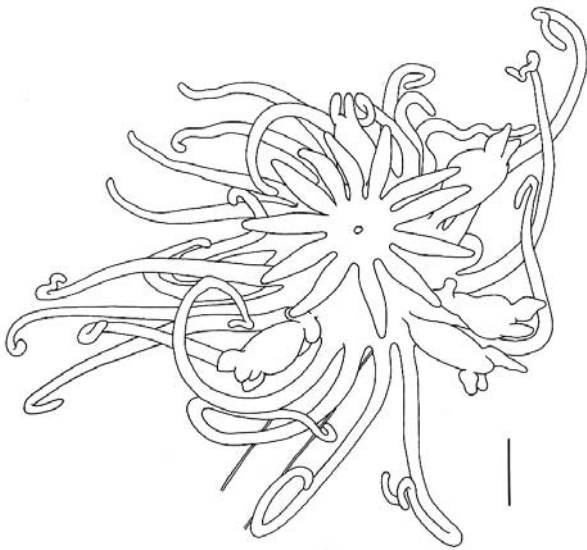
**Size:** Height of individual polyps up to 50 mm.

**Morphology:** Colonies formed by branched hydrocauli or by development of actinulae on individual hydrocauli arising from creeping, twisted stolon with wrinkled, straw-coloured perisarc attached to fixed objects. Diameter of hydrocaulus about 400  $\mu$ m, perisarc firm basally, gradually thinning about distally and terminating just below bulbous base of terminal, vasiform hydranth. Height of hydranth about 1.7 mm, width 1.2 mm; one whorl of short oral tentacles, up to 750  $\mu$ m long and one whorl of much longer aboral tentacles, up to 2.800  $\mu$ m long. Gonophores fixed sporosacs, developing just above insertion of aboral tentacles on short, slender dichotomously branches blastostyles. Both male and female gonophores are eumedusoid without remnants of radial canals but with three rudimentary tentacles. Nematocysts: Desmonemes 3.8-4.6 x 3.0 x 3.6  $\mu$ m;

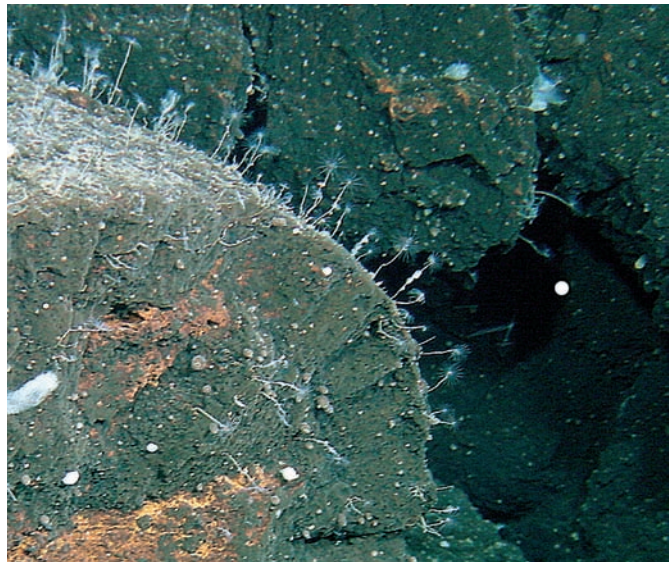
small stenoteles 6.7-7.3 x 5.4-5.7 mm; large stenoteles 10.6-21.1 x 9.5-10.1  $\mu$ m; mastigophores 8.4-9.6 x 3.5-4.0  $\mu$ m; O-isorhirs 9.2-9.4 x 8.4-8.7  $\mu$ m.

**Biology:** Attached to fixed objects but frequently developing into a free-living, detached colony as the result of fragmentation of the original colony. Monoecious or dioecious colonies. The eggs develop inside the female gonophore and become free in the actinula stage. As the possibilities for dispersion of the actinulae are limited many settle on or in the vicinity of the elder.

**Distribution:** Mid-Atlantic Ridge: Menez Gwen. Sub-arctic, temperate and subtropical waters of the northern Atlantic, from the littoral zone down to considerable depth in the bathyal zone.



1: Hydranth with female gonophores, seen from above (oral view); from CALDER & VERVOORT (1998).



2: *Tubularia* or *Ectopleura* sp. in situ, from Menez Gwen vent field at the boundary of active area; cruise Ataos © Ifremer.

**Reference:**

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

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Cnidaria, Hydrozoa, Leptolida, Leptothecata, Halopterididae

*Polyplumaria flabellata* G.O. Sars, 1874

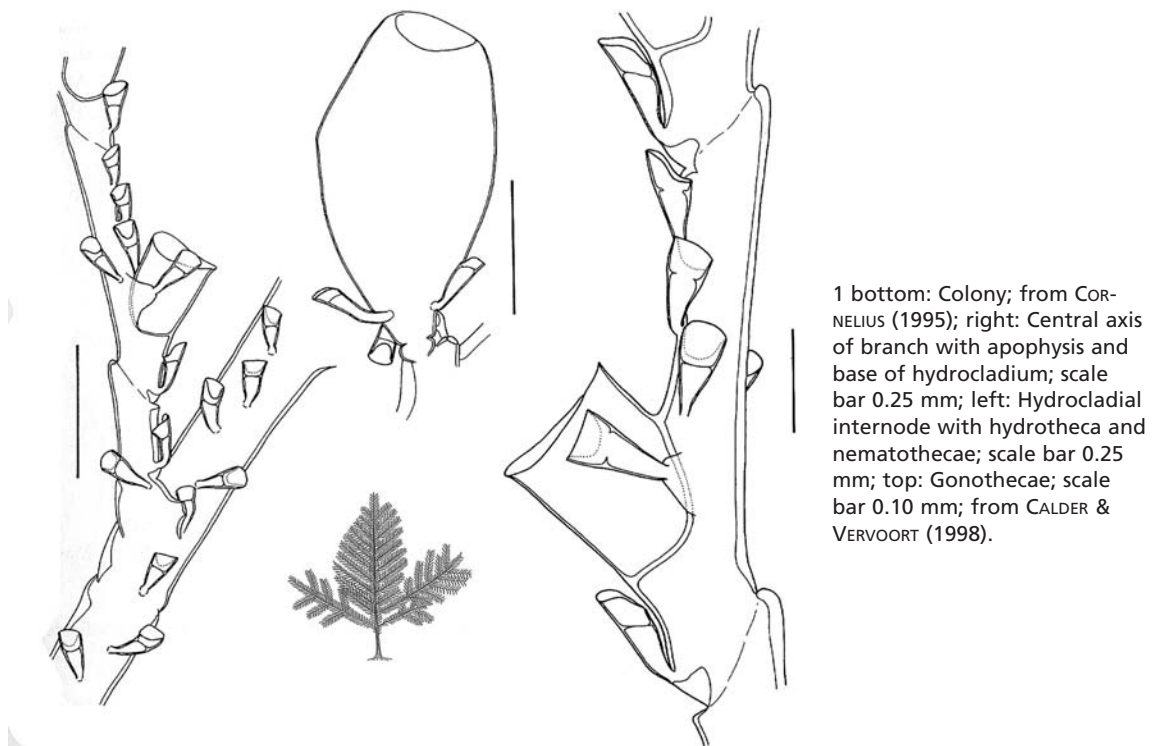
**Size:** Height of colony up to 350 mm, spread almost equal.

**Morphology:** Stolonal mass of fine tubules supporting a rigid, pinnately branched colony of very regular structure. Stem polysiphonic and repeatedly branched, branches in opposite pairs; branches originating from secondary tubes; primary axis visible in polysiphonic parts in front of bundle of secondary tubules, divided by oblique nodes into internodes of varied length, each internode with one to five apophyses, alternately directed obliquely upwards and to left and right. Primary and secondary tubules with nematothecae, each apophysis with a 'mamelon' and three nematothecae; in addition two to four nematothecae between two successive apophyses. Hydrocladia about 3 mm long, supported by apophyses, slightly curved, first internode athecate, with one nematothecae; all following internodes thecate, with one proximal, a pair of flanking, one distal and several additional and variously distributed nematothecae on distal part of internode. All nematothecae bithalamic with deeply scooped adcauline wall. Hydrotheca cylindrical with almost parallel walls, adcauline wall adnate for half its length, length

axis of hydrotheca at  $45^\circ$  to length axis of internode; hydrothecal rim circular and smooth, perpendicular to hydrothecal length axis; lateral (flanking) nematothecae on short apophyses near hydrothecal axil. Hydrocladia occasionally forked, secondary branch springing from base of first hydrotheca. Depth of hydrotheca 140-190  $\mu\text{m}$ , diameter at rim 135-160  $\mu\text{m}$ . Female and male gonothecae of same shape, curved ovoid, attached to apophyses by means of short pedicel; basal part of gonothecae with 6-9 nematothecae. Aperture circular, laterally disposed, turned towards hydrocladium, closed by circular lid. Length of gonothecae 610-750  $\mu\text{m}$ ; diameter 340-400  $\mu\text{m}$ . Nematozooids: Not studied in detail.

**Biology:** Usually on soft bottoms (off vent areas). Serves as host for many epizoic leptolid species.

**Distribution:** Mid-Atlantic Ridge: near Menez Gwen, 997-696 m. Moderately deep to deep waters of tropical, temperate, and northern parts of the eastern Atlantic.



1 bottom: Colony; from CORNELIUS (1995); right: Central axis of branch with apophysis and base of hydrocladium; scale bar 0.25 mm; left: Hydrocladial internode with hydrotheca and nematothecae; scale bar 0.25 mm; top: Gonothecae; scale bar 0.10 mm; from CALDER & VERVOORT (1998).

References:

- ANSÍN AGÍS J., RAMIL F. & W. VERVOORT (2001) Zool. Verh., Leiden **333**: 3-268.  
 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, 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, Hebellidae

*Halisiphonia arctica* KRAMP, 1932

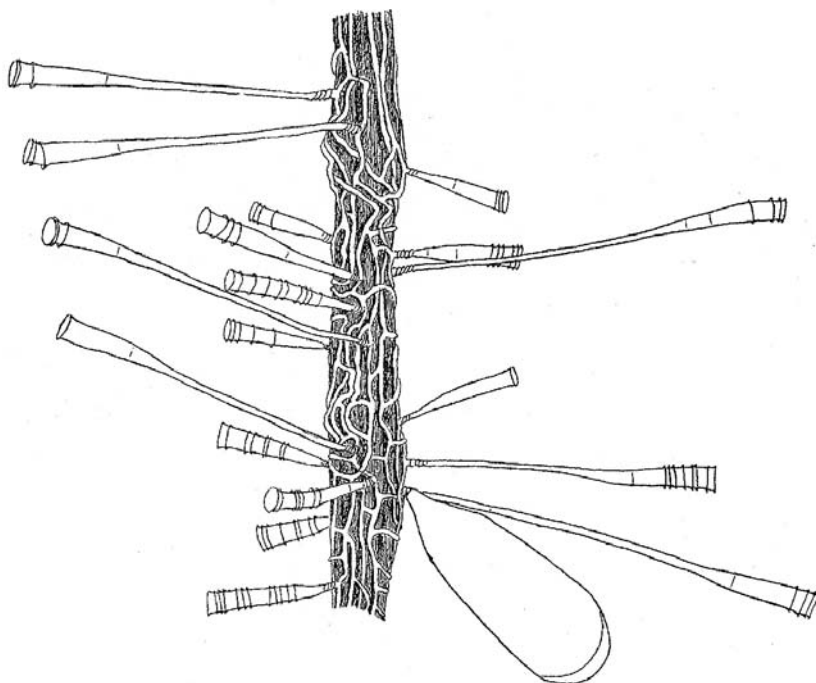
**Size:** Length of hydrotheca about 1 mm; length of pedicel up to 3 mm.

**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

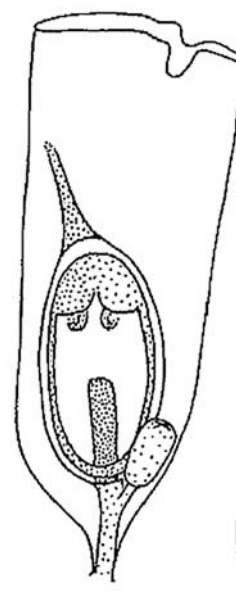
short, ringed pedicel, distally open, truncated, rim notched. Gonophores developing free medusae that are so far undescribed. Nematocysts: Unknown.

**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

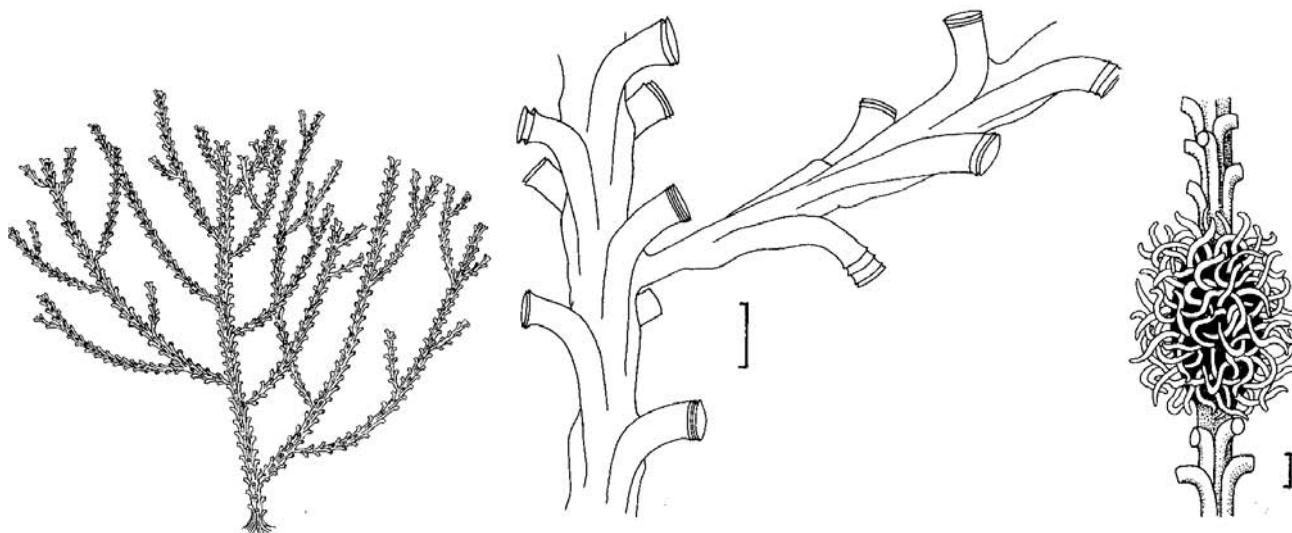
**Size:** Colonies from the Mid-Atlantic Ridge are a few cm high; in boreal and subarctic waters colonies may reach a size of 100 mm.

**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 µm. Gonothecae aggregated into ovoid coppinae with many strongly curved tubules projecting from between gonothecae. Coppinae 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

### *Lafoea dumosa* FLEMING, 1820

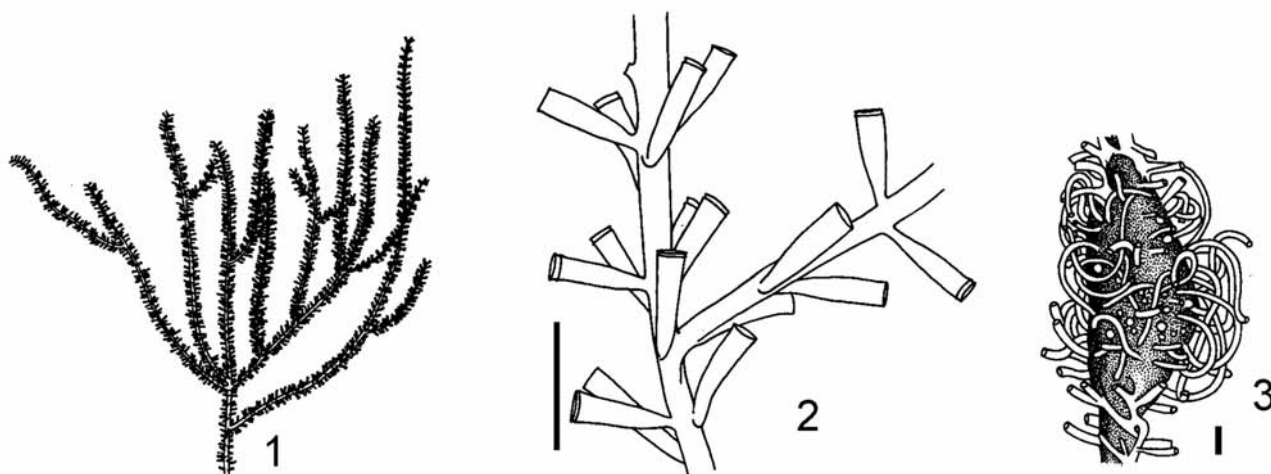
**Size:** Erect colony up to 100 mm high; length of hydrotheca varied between 150 and 800  $\mu\text{m}$ , diameter at rim 100-200  $\mu\text{m}$ ; greatest dimensions in specimens from cold water.

**Morphology:** Stolonal or erect colonies, often a combination of both; erect colonies very irregularly branched, often with anastomoses, mono- or polysiphonic, the latter being composed of several adnate parallel tubes all bearing hydrothecae on all sides, occasionally in more or less opposite and decussate arrangement. Hydrotheca tubular to elongated conical, frequently asymmetrical, rim circular, usually renovated. Hydrotheca narrowing basally into frequently almost imperceptible pedicel; other colonies may have a well developed, twisted hydrothecal pedicel. Hydranth extensile, with about 20 amphicoronate tentacles around conical proboscis, attached deep inside hydrothecae by means of ring of desmocytes; coenosarc yel-

lowish. Gonothecae aggregated into ovoid, several mm long coppinia on stem or branches, hermaphroditic, with many strongly curved accessory tubes protruding from between gonothecae. Gonothecae amphora-shaped, strongly adnate. Presence of acrocyst unknown. Coppinae rare, reproduction apparently frequently vegetative. Nematocysts: Isorhiza's of two size classes (about 21 and 16  $\mu\text{m}$  length, not in same colony!) and a smaller unidentified capsule, 6  $\mu\text{m}$  long (SCHUCHERT 2001).

**Biology:** On fixed objects, also epizoic. Although a well-distributed species few details of its biology are available.

**Distribution:** Mid-Atlantic Ridge: Rainbow. Shallow to deep waters of all oceans [concept of species as defined by CORNELIUS (1975)].



Left: Erect colony, 6 cm height; middle: Part of erect colony with almost sessile hydrothecae; scale bar 0.5 mm; right: Coppinia; scale bar 0.5 mm; from CORNELIUS (1995).

#### References:

- CORNELIUS P.F.S. (1975) Bull. Br. Mus. Nat. Hist., Zool. **28**: 373-426.  
 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.  
 RAMIL F. & W. VERVOORT (1992) Zool. Verh., Leiden **277**: 3-262.  
 SCHUCHERT P. (2001) Medd om Grønland. Bioscience **53**: 1-184.



Cnidaria, Hydrozoa, Leptolida, Leptothecata, Lafoeidae

*Zygophylax echinata* CALDER & VERVOORT, 1998

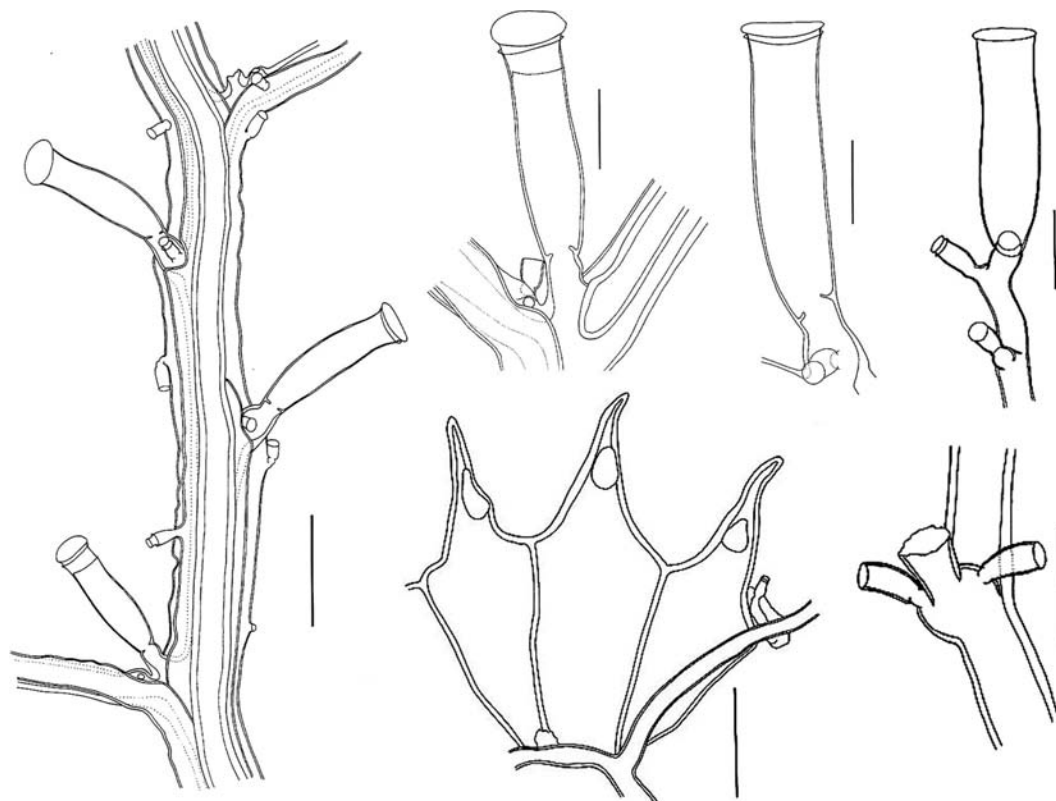
**Size:** Height of erect colony 25 mm.

**Morphology:** Colony erect, stem strongly polysiphonic, monosiphonic only in upper parts and there slightly geniculate. Hydrocladia short, alternately arranged on either side of axis, biserial, with axillar hydrotheca bearing two opposite nematothecae at base of pedicel. Hydrocladia may become polysiphonic by apposition of secondary tubes and presence of nematothecae in axillar hydrothecae may become obscured. Hydrothecae on axis and hydrocladia alternately arranged, placed on distinct, swollen apophysis with a pair of opposite nematothecae. Besides axillar hydrotheca there are two hydrothecae between two successive hydrocladia. Nematothecae small, elongated tumbler-shaped, narrowing proximally into short pedicel, length 42-68  $\mu$ m, diameter at rim 24-31  $\mu$ m, renovations frequent. Hydrothecae small, slender vase-shaped, slight-

ly asymmetrical by bulging adcauline wall. Proximal portion of hydrotheca narrowing into short, plump pedicel; diaphragm distinct, oblique. Length of hydrotheca (without renovations) 250-400  $\mu$ m, rim moderately everted, circular, frequently renovated, diameter 94-117  $\mu$ m. Gonothecae aggregated into characteristic, oval coppinia, 3.5 mm long, 2 mm high, surrounding axis basally. Gonothecae flask-shaped, strongly adnate, tapering distally into a sharply pointed structure with a lateral aperture. Nematophorous ramules protrude from between gonothecae, curving over coppinia, bearing both nematothecae and some hydrothecae. Nematocysts: Undescribed.

**Biology:** Attached to solid substrate like rocks or stones.

**Distribution:** Mid-Atlantic Ridge: near Menez Gwen.



1 left: Distal part of stem with hydrothecae, nematothecae and insertion of two hydrocladia, scale bar 0.25 mm; top row left: Axillary hydrotheca with nematotheca, scale bar 0.1 mm; middle: Hydrotheca and nematotheca, scale bar 0.1 mm; right: End of nematophorous ramule with hydrotheca and two nematothecae, scale bar 0.1 mm; bottom row middle: Three gonothecae and nematophorous ramule from coppinia, scale bar 0.25 mm; right: Apophysis of hydrocladium with pedicel of hydrotheca and two nematothecae, scale bar 0.1 mm; after CALDER & VERVOORT (1998).

**Reference:**

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

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Cnidaria, Hydrozoa, Leptolida, Leptothecata, Lafoeidae

*Zygophylax leloupi* RAMIL & VERVOORT, 1992

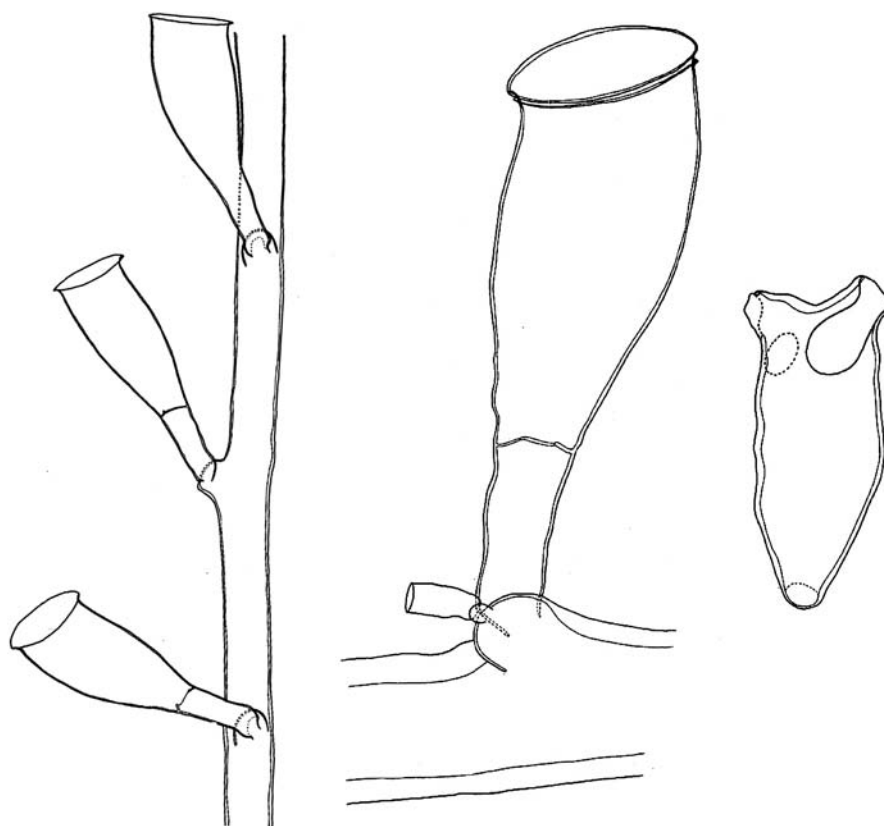
**Size:** Height of colony up to 140 mm.

**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

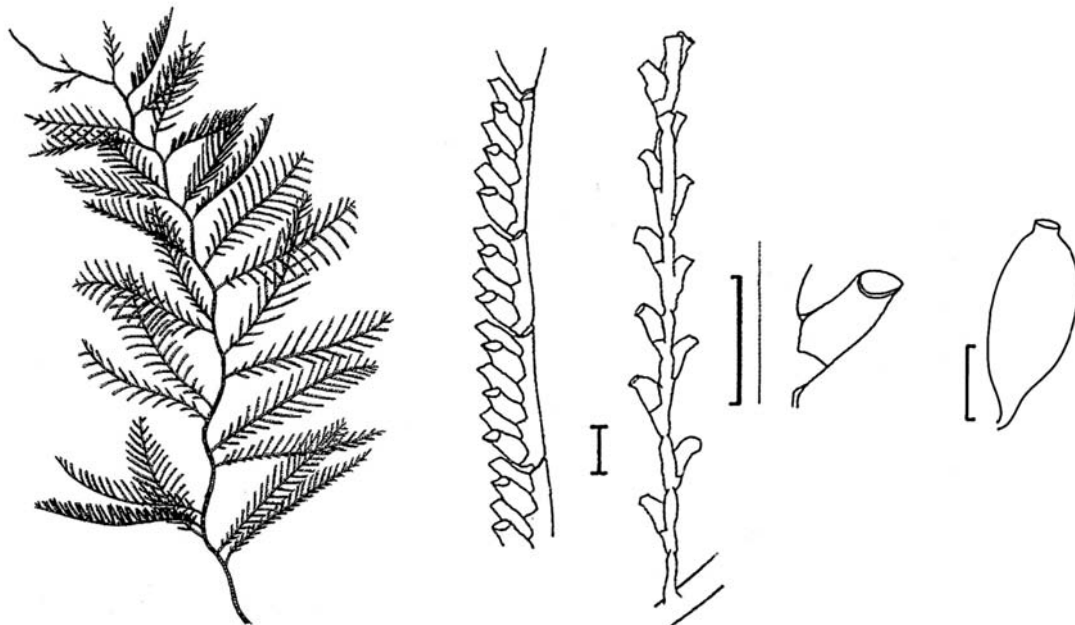
**Size:** Full grown colonies may reach a length of 650 mm; usually much smaller.

**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  $\mu$ m; greatest diameter 130-190  $\mu$ m; diameter at rim 80-140  $\mu$ 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  $\mu$ 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; gonotheca; 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

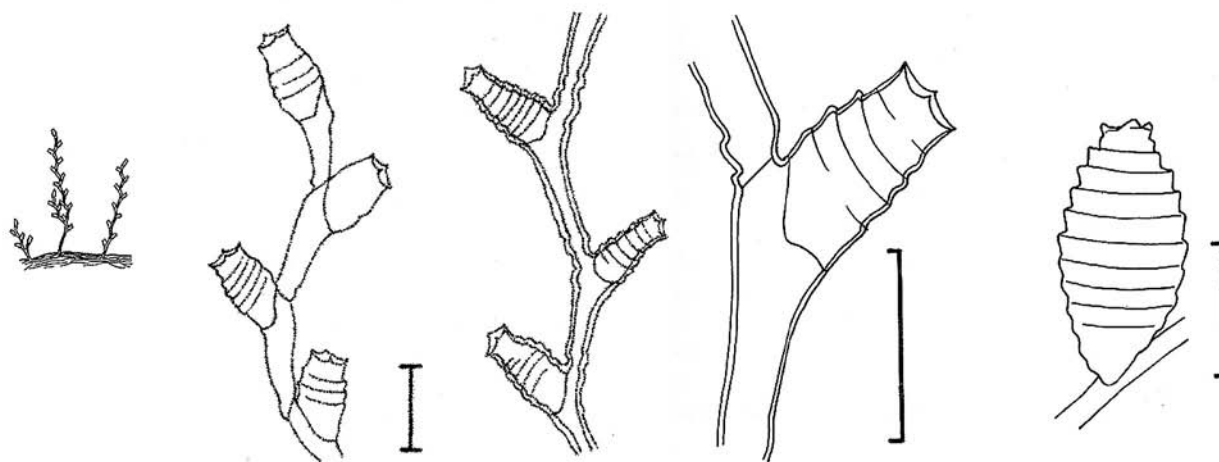
**Size:** Erect colonies about 20 mm high or smaller.

**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 hydroids.

**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 stolonal 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.



Cnidaria, Hydrozoa, Leptolida, Leptothecata, Sertulariidae

*Symplectoscyphus bathyalis* VERVOORT, 1972

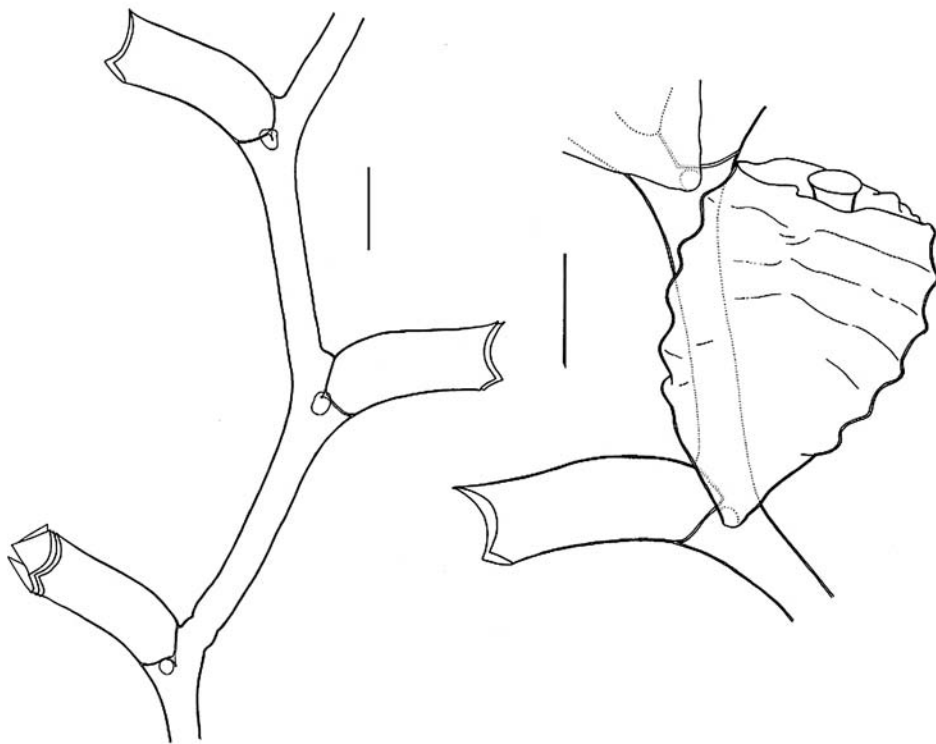
**Size:** Height of colony up to 80 mm.

**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 µm deep, greatest diameter about 500 µm, 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. Gonothea 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.

Cnidaria, Hydrozoa, Leptolida, Leptothecata, Tiarannidae

*Stegolaria geniculata* ALLMAN, 1888

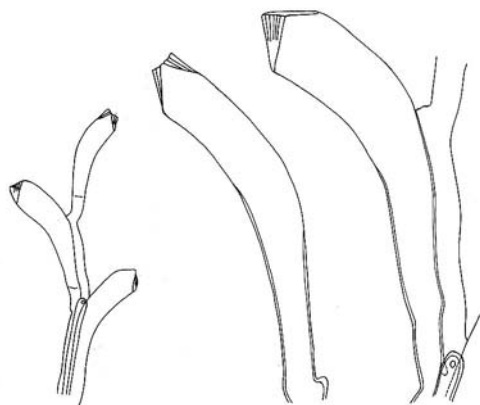
**Size:** Height of colonies up to 10 cm.

**Morphology:** Ramified, irregularly shaped, erect colonies with thick, geniculate, polysiphonic stems, resulting from geniculate axial tube with hydrothecae becoming covered by many accessory tubules; ultimate ramifications monosiphonic. Stem basally with stolonal tubes attaching colony to firm substrate. Hydrothecae alternately arranged, in same plane as hydrocaulus and branches, adnate to axial tube and immersed to varying degree, curving outwards, gradually widening from base onwards; walls smooth, abcauline wall concave, free adcauline wall convex to nearly straight. Operculum a roof-shaped enclosure with two longitudinally pleated valves, suspended in U-shaped embayments of hydrothecal margin. Perisarc firm on stem and branches, yellowish-brown, thinning out considerably along walls of hydrothecae and becoming almost hyaline distally; distal part of many hydrothecae collapsed. No diaphragm; hydranths attached to internal wall of hydrotheca by means of circular collar of tissue. Gonothecae elongated sack-shaped,

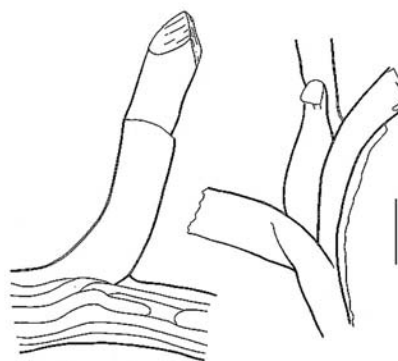
widest in mid-region, attached to axial tube amongst hydrothecae. Distal part narrowing fairly sharply, curving outwards as a short tube with circular aperture. Condition of gonophore unknown; development of a free medusa phase is not unlikely. Nematosysts: Not described.

**Biology:** Attached to solid objects like stones or rocks. Resilient colonies frequently without living tissue in deep water hauls; abraded specimens difficult to recognize. Though this is by no means a rare species in deep oceanic waters the structure of polyp and gonophore still remain unknown because of the scarcity of well preserved material. Reproduction and mode of feeding unknown.

**Distribution:** Mid-Atlantic Ridge: Lucky Strike and Rainbow. Deep water of the Atlantic Ocean; probably also in deep water of Indian and Pacific Oceans or replaced by closely allied species [*Stegolaria operculata* (NUTTING, 1905)].



1 from left to right: Monosiphonic top part of colony; terminal hydrotheca; hydrotheca on monosiphonic part of stem; length of hydrotheca 1.3-1.6 mm; from RAMIL & VERVOORT (1992).



2 from left to right: Renovated hydrotheca on polysiphonic part of colony; scale bar 0.25 mm; branch with empty gonotheca and two damaged hydrothecae; scale bar 0.5 mm; from CALDER & VERVOORT (1998).

References:

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

## Cnidaria, Hydrozoa, Siphonophora, Rhodaliidae

### *Thermopalia taraxaca* PUGH, 1983 “Galapagos dandelion“

**Size:** Height of main body up to 40 mm.

**Morphology:** Ball-like structure, with an apical, smooth-walled float (pneumatophore), pinkish-orange in colour. Immediately below this is a corona of flimsy, swimming bells; but these are only apparent if the animal is actively swimming. The main body consists of a mass of orange-coloured feeding polyps (gastrozooids), together with other structures. The specific characteristics are rather esoteric, and include a smooth-walled aurophore; cormidia attached directly to the main body of the corm; and the absence of gonopalpons.

**Biology:** The animals are very obvious structures as they float a few centimetres above the substrate, and are attached, like tethered hot-air balloons, by means of numerous lines (tentacles).

**Distribution:** Galapagos Spreading Center and East Pacific Rise. *T. taraxaca* or relatives have been observed on the Juan de Fuca Ridge but never collected.



1: In situ from East Pacific Rise: 13°N © Ifremer.



2: In situ from East Pacific Rise: 13°N © Ifremer.



3: In situ from Galapagos Spreading Center; by courtesy of R.R. Hessler.



4: In situ from Galapagos Spreading Center; by courtesy of R.R. Hessler.

#### Reference:

PUGH P.R. (1983) Philos. Trans. R. Soc. Lond. **301**(1105): 165-300.

P.R. PUGH

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Cnidaria, Scyphozoa, Stauromedusae, Eleutherozoa

*Lucernaria janetae* COLLINS & DALY, 2005 “stalked jellyfish”

**Size:** Calyx diameter to 100 mm, height to 60 mm; peduncle height to 60 mm.

**Color:** Creamy greenish-white to orangish-white.

**Morphology:** Extremely large stauromedusan with goblet-shaped calyx and eight equa-distant clusters of capitate secondary tentacles. Adults have no perradial anchors (primary tentacles); juveniles may have small, ovoid perradial anchors.

**Biology:** On basalt at vent periphery or areas of diffuse flow. Many individuals of varying sizes co-occur; may dominate local fauna. Co-occurs with tubeworm *Tevnia*, sea anemones (*Cyranthea* sp.), and vent-associated decapods (LUTZ et al. 1998; HALANYCH et al. 1999). Aggregations comprised of specimens of varying sizes and age stages. Smallest juveniles may be attached to basal end of adults.

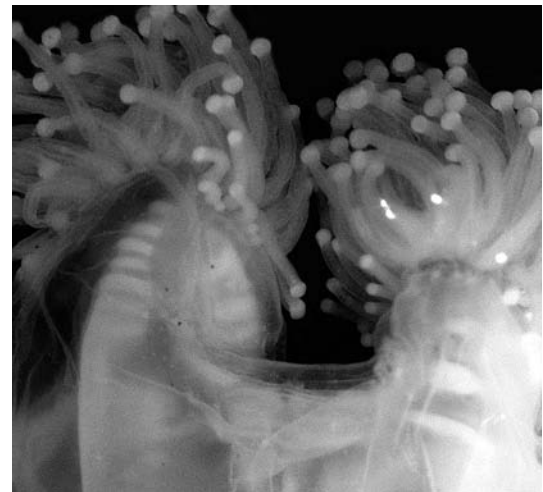
**Distribution:** East Pacific Rise: 7°S to 21°N. A similar form was observed at Pacific-Antarctic Rise, 38°S, 2330 m (cruise PAR5, April 2005).



1: Aggregation in situ (East Pacific Rise: 9°N, 2540 m); by R. Zierenberg.



2: Cross-section through monocameral peduncle, showing four septal cords (East Pacific Rise: 9°N, 2540 m; FMNH 10328).



3: Close-up of perradial notch. Note secondary tentacles and absence of perradial anchor (East Pacific Rise: 9°N, 2540 m; FMNH 10327).

References:

- COLLINS A.G. & M. DALY (2005) *Biol. Bull.* **208**: 221-330.  
HALANYCH K.M., TIEGER M., O'MULLAN G.D., LUTZ R. & R.C. VRIJENHOEK (1999) *InterRidge News* **8**: 23-27.  
LUTZ R.A., DESBRUYÈRES D., SHANK T.M. & R.C. VRIJENHOEK (1998) *Deep-Sea Res. II* **45**: 329-334.

## Cnidaria, Anthozoa, Actiniaria

According to the current knowledge, the sea anemones, with eight presently known species, constitute about 1.6% of the total number of identified vent species. Several other morphotypes have been photographed in situ or are currently under study. Thus the number of sea anemone species will probably increase slowly but continually when taxonomic studies continue and new vent field are discovered.

Although the total number of sea anemone species reported for these environments is apparently not very significant – compared with other groups like gastropods or polychaetes, for example – the number of species living in a specific vent field is not higher than two or three. These few species are sometimes so abundant that they form characteristic fields completely covered by individuals, sometimes equidistantly separated.

Most of the species reported belong to the family Actinostolidae (six species), while only one species each of Hormathiidae and Boloceroididae are known to date. One of the actinostolid species (*Actinostola* sp.) is only known at the generic level at vents. However, this genus is well known from non-vent environments. The other five actinostolid species were originally described from hydrothermal vents and were also used as types of their monotypic genera. The specific status of the single hormathiid species is currently under revision.

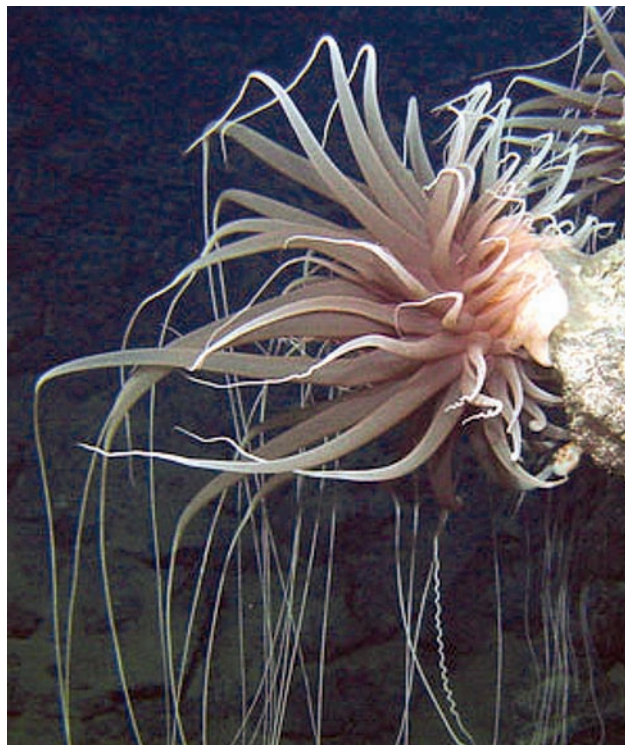
The term sea anemones is widely used to refer to soft hexacorallians of the orders Actiniaria (including Ptycodactylaria), Zoanthidea and Corallimorpharia. Members of the first two orders have been collected from these chemoautotrophic environments although, for the moment, only identifications of actiniarian specimens are available.

The current knowledge of sea anemone species associated with vents is far from completed, most of the characters used to identify the different genera being anatomic (histology) or microscopic (types and sizes of cnidocytes). In addition, several species belonging to different genera can have a similar appearance in visual surveys. All these aspects often made the specific identification of sea anemone from photographic or video records a difficult task. At present, molecular studies on vent sea anemone lack. Such studies as well as studies on reproduction, feeding, and other biological aspects should be carried out with the appropriate number of specimens per species in the next decades.

Sea anemones are usually delicate animals. Also those with thick body walls and a cuticle are internally highly delicate. As

the study of the internal anatomy and cnidocytes is essential for a correct identification, sea anemones should be carefully treated. If specimens are obtained in good condition infrequently at best they can be relaxed adding menthol's crystals on the surface of the water. Fixation is best in a big volume of 10% buffered formalin for at least a week, then they can be transferred to 70% ethanol or maintained in 10% buffered formalin 10%. It is highly recommended to inject a solution of concentrated 20-30% formalin into the gastrovascular cavity. This will facilitate proper fixation of the internal structures used for histological studies.

For molecular studies, either parts of animals or if dissection of some tentacles is possible in large animals, fixation in 100% alcohol and several changes of the fixation medium or freezing are recommended. It is very important that the rest of the specimen from which the tentacles or fragments have been removed is fixed in formalin as described above. Thus, molecular as well as traditional taxonomic studies can be carried out using the same voucher specimen. Material entirely frozen or fixed in ethanol is seldom useful for the current taxonomic work.



1: *Boloceroides daphnae* from East Pacific Rise: 17°S, Biospeedo cruise © Ifremer.



Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Actinostolidae

*Actinostola* VERRILL, 1883

**Size:** Diameter of the pedal disc, 90 mm; mouth, 70 mm; column height, 60 mm; length of contracted tentacles, 11 mm.

**Color:** Column, tentacles, pharynx, and mesenteries yellowish white in situ.

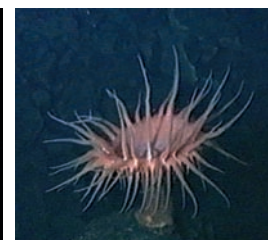
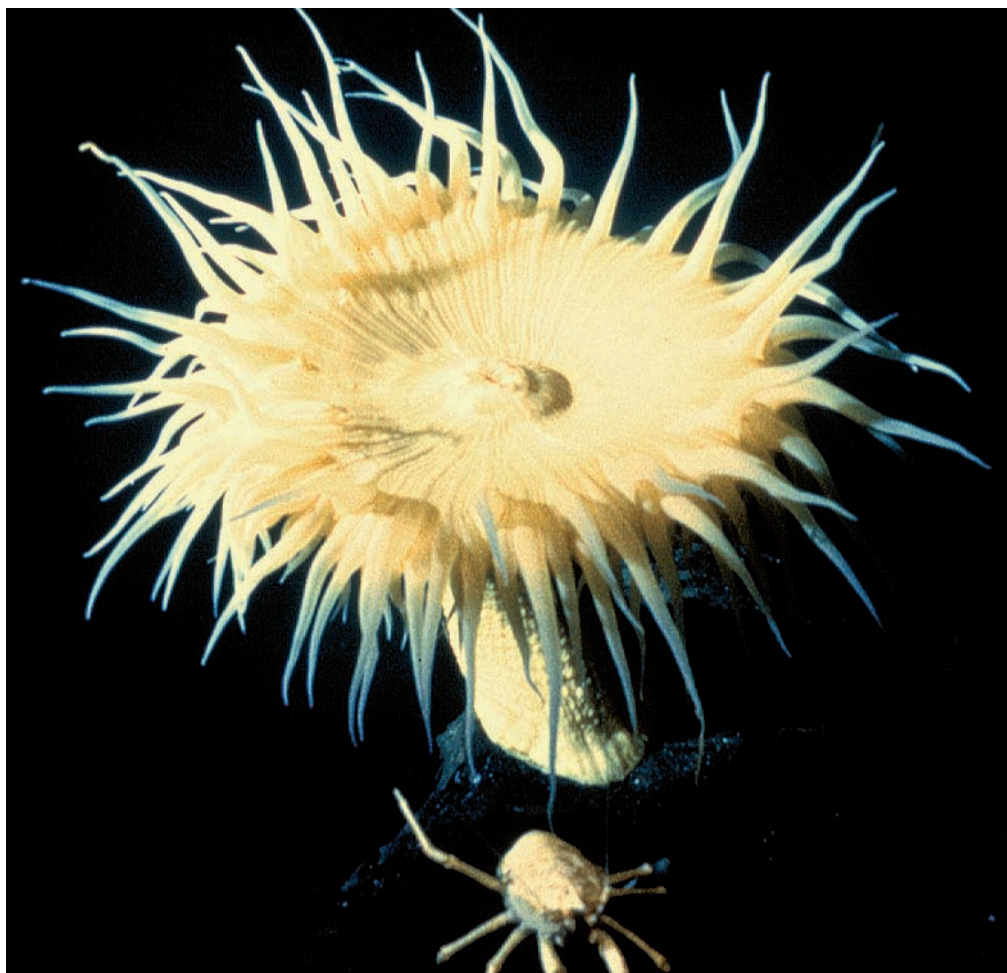
**Morphology:** Column cylindrical, with conspicuous mesogloal tubercles arranged regularly in longitudinal rows; tentacles arranged in four or five cycles, with an apical orifice, aboral side of tentacles often thickened at the base; sphincter weak, mesogloal, thus tentacles can not be completely retracted; longitudinal musculature of tentacles mesogloal; mesenteries arranged according to *Actinostola*-rule; oldest cycles of mesenteries sterile.

**Remarks:** DOUMENC & VAN PRAËT (1986) discussed the possible specific identity of the single specimen examined without a

definitive conclusion. Although in the figure 1 of that paper, the name *A. callosa* is included, it was probably a mistake during the editorial process of the manuscript. DOUMENC & VAN PRAËT (1986: 63) also reported the presence of four cycles of tentacles, this number of cycles corresponding to 48 tentacles (6+6+12+24). However, the number of tentacles seen in the in situ photographs suggest five cycles. Additional material is needed to study the specific pertinence and other anatomical details.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. All other biological aspects are unknown. Often observed within the gravel, attached at the top of lava pillars.

**Distribution:** East Pacific Rise: 13°N.



2: In situ specimen; cruise Hot 96 © Ifremer.

1: In situ specimen; cruise Hope 99 © Ifremer.

**Reference:**

DOUMENC D. & M. VAN PRAËT (1986) *Oceanol. Acta* **8**: 61-68.

P. LÓPEZ-GONZÁLEZ & M. SEGONZAC

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Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Actinostolidae

*Cyananthea hydrothermala* DOUMENC & VAN PRAËT, 1986

**Size:** Diameter of pedal disc, 10 mm, height, 35 mm; tentacles, ca. 25 mm.

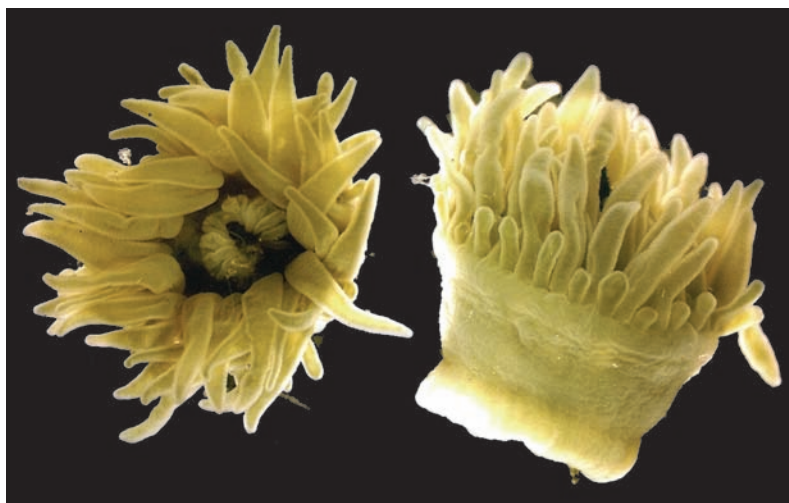
**Color:** Whitish in situ, column and tentacles dark brownish, mesenteries pale beige.

**Morphology:** Column smooth, with distal margin distinctly marked; tentacles occupying most oral disc, reaching near to the mouth; more mesenteries distally than proximally; sphincter mesogloal, strong, on the endodermic face of the mesogloal layer; retractor musculature diffuse and weak; longitudinal musculature of tentacles ectodermic; radial musculature of the oral disc ecto-mesogloal.

**Remarks:** This species was insufficiently described to be correctly diagnosed or compared with other actinostolid genera and species. The familial pertinence was tentative after the supposed absence of acontia in the single fragment available to study by DOUMENC & VAN PRAËT (1986). Material collected in the type locality should be re-described in order to precise the taxonomic status of this genus and species.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. All other biological aspects are unknown. The association with bacterial symbionts has not been demonstrated. Lives on the walls of the black smokers at temperatures of 12-20°C and on sulphide rocks.

**Distribution:** East Pacific Rise: 13°N.



1: Two specimens taken onboard from the East Pacific Rise: 13°N, cruise Phare © Ifremer.



2: In situ specimen taken from the East Pacific Rise: 13°N, among siboglinids *Riftia pachyptila* and limpets *Lepetodrilus elevatus*, cruise Phare © Ifremer.

Reference:

DOUMENC D. & M. VAN PRAËT (1986) Oceanol. Acta 8: 61-68.

P. LÓPEZ-GONZÁLEZ & M. SEGONZAC

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Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Actinostolidae

*Maractis rimicarivora* FAUTIN & BARBER, 1999

**Size:** Diameter of the pedal disc, up to 55 mm; mouth, up to 30 mm; column height, up to 20 mm; length of contracted tentacles, up to 25 mm.

**Color:** Column, tentacles, pharynx and mesenteries yellowish white in situ.

**Morphology:** Column conical in contraction, with transversal furrows due to contraction; sphincter mesogloal, strong; tentacles about 100 in number, closely placed at the rim; longitudinal musculature of tentacles ectodermal; no mastigophore nematocysts in tentacles; mesenteries hexamerously arranged, but not according *Actinostola*-rule; equal number of mesenteries distally and proximally, 4 cycles, only the first cycle perfect, all stronger mesenteries fertile; parietobasilar musculature only differentiate in the stronger cycles.

**Remarks:** SEGONZAC (1992) reported *Parasicyonis ingolfi* CARREN, 1942 from Snake Pit, Mid-Atlantic Ridge. This species was described before the discovery of hydrothermal vents. De-

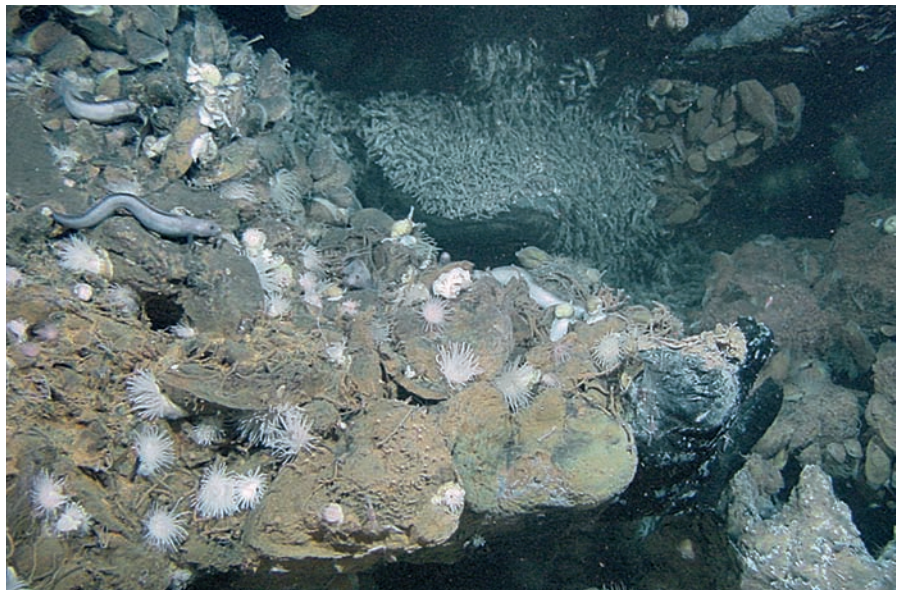
spite of that report, there is no formal morphological description of this poorly known species from Mid-Atlantic Ridge material. At present, all other material subsequently studied from the Mid-Atlantic Ridge corresponds with the description of *Maractis rimicarivora*. Although *Parasicyonis ingolfi* was included in the first edition of the Handbook of deep-sea hydrothermal vent fauna (DESBRUYÈRES & SEGONZAC 1997), at present, we decided not to include this species until new material will be studied.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. This species was reported preying on shrimps *Rimicaris exoculata*. All other biological aspects are unknown. Observed in peripheral regions of active black smokers, attached to the crumbly substratum of oxidized sulfide.

**Distribution:** Mid-Atlantic Ridge: TAG, Snake Pit-Elan, and Ashadze 1.



1: Specimens taken in situ by the Russian Polar Marine Expedition at the site Ashadze, among chaetopterid polychaeta tubeworms; by courtesy of A. Shagin © PMGE.



2: Specimens taken in situ by the American cruise DiversExpedition at the site Snake Pit-Elan, with zoarcid (*Pachycara thermophilum*), shrimps (*Rimicaris exoculata*), mytilid bivalves (*Bathymodiolus puteoserpentis*), buccinid gastropods (*Phymorhynchus* spp.); by courtesy of C. L. Van Dover.

References:

- BEL'TENEV V., IVANOV V., SHAGIN A. et al. (2005) InterRidge News **14**: 14-16  
FAUTIN D.G. & B.R. BARBER (1999) Proc. Biol. Soc. Wash. **112**(3): 624-631.  
LÓPEZ-GONZÁLEZ P.J., RODRÍGUEZ E., GILI J.-M. & M. SEGONZAC (2003) Zool. Verh. Leiden **345**: 215-243.  
SEGONZAC M. (1992) C. R. Acad. Sci. Paris, Sér. III **314**: 593-600.  
SEGONZAC M. (1997) in DESBRUYÈRES D. & M. SEGONZAC (Eds.) Handbook of Deep-sea Hydrothermal Vent Fauna, Ifremer: 31.

Cnidaria, Anthozoa, Actiniaria, Actinostolidae

*Marianactis bythios* FAUTIN & HESSLER, 1989

**Size:** In life, typical column length and oral disc diameter about 125 mm in animal with 50 mm pedal disc diameter; length of inner tentacles about equal to oral disc diameter. Dimensions of contracted specimens 25-30% of expanded ones.

**Color:** White in situ.

**Morphology:** Adherent pedal disc; smooth column; tentacles about 60 in number tapering, pointed, the outer ones of which are much shorter than the inner. Mesenteries not arranged according to *Actinostola*-rule; first cycle perfect; stronger ones gametogenic. Tentacles without basal thickenings, no microbasic *b*-mastigophores in tentacles but with microbasic amastigophores; fewer than mesenteries. Marginal sphincter mesogloal; longitudinal musculature of tentacles ectodermal; parietobasilar musculature distinct.

**Remark:** Another sea-anemone, morphologically similar to *M. bythios* and attributed to *M. aff. bythios*, dominates the periphery of black smokers at the Kairei vent field (Central Indian Ocean).

**Biology:** High abundance in the immediate vicinity of low temperature vents. No morphological adaptations to this habitat detected. Probably carnivorous, feeding on vent shrimps.

**Distribution:** Mariana Back-Arc Basin.



1: Specimens taken in situ in the Mariana Back-Arc Basin; by courtesy of Daphne Fautin.



2: *Marianactis cf. bythios* taken in situ at Central Indian Ocean, Kairei vent field; in the center, mytilid bivalves (*Bathymodiolus marisindicus*); by courtesy of J. Hashimoto © JAMSTEC.

References:

- FAUTIN D.G. & R.R. HESSLER (1989) Proc. Biol. Soc. Wash. **102**: 815-825.  
HASHIMOTO J., OHTA S., GAMO T., CHIBA H., YAMAGUCHI T., TSUCHIDA S., OKUDAIRA T., WATABE H., YAMANAKA T. & M. KITAZAWA (2001) Zool. Sci. **18**(5): 717-721.  
VAN DOVER C.L., POLZ M., ROBINSON J, CAVANAUGH D., KADKO D & J.P. HICKEY (1997) BRIDGE Newsletter **12**: 33-34.  
VAN DOVER C.L. (2002) Mar. Biol. **141**: 761-772.



Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Actinostolidae

*Pacmanactis hashimotoi* LÓPEZ-GONZÁLEZ, RODRÍGUEZ & SEGONZAC, 2005

**Size:** Diameter of the pedal disc, 15 mm; column distally, 30 mm; column height, 20 mm; length of contracted tentacles, 10 mm. All measurements from preserved and contracted specimens.

**Color:** Preserved material of a whitish color. Living animals are whitish to pinkish, with oral disc light brown.

**Morphology:** Column smooth, distal part including oral disc wider than mid-column and pedal disc, not divisible into scapus and scapulus; sphincter distinctly marked distally as a prominent circumferential marginal ridge, mesogloal, relatively weak; tentacles about 100 in number, of uniform thickness along entire length, with microbasic *b*-mastigophores; longitudinal tentacle and oral disc circular musculature ectodermal, that of tentacles equally well developed on all sides; mesenteries hexamerously arranged, but not according to *Actinostola*-

rule, first and second cycles of mesenteries perfect, all stronger ones fertile; same number of mesenteries distally and proximally; parietobasilar musculature not differentiated.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. All other biological aspects are unknown. This species has been observed on living mussels or rocks, within 10 cm of a crack emitting a transparent fluid at ca 40°C. Some anemones have been observed outside the area of thermal influence, where isolated mytilid bivalves (*Bathymodiolus* sp.) and siboglinid tubeworms (*Arcovestia ivanovi* SOUTHWARD & GALKIN, 1997) also occurred and where the seawater temperature was 2.8°C.

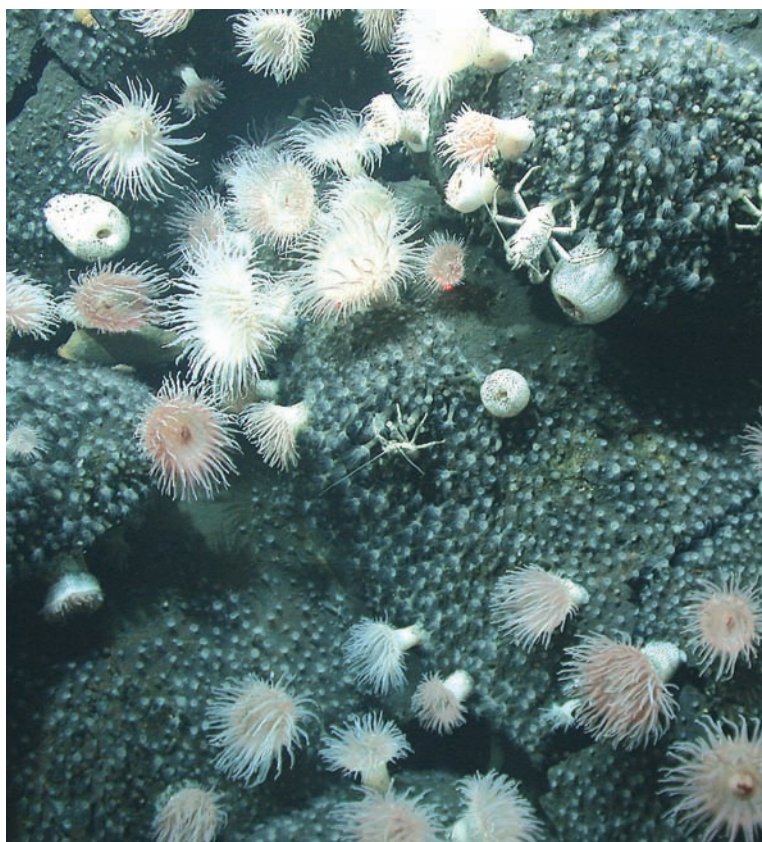
**Distribution:** Manus Back-Arc Basin: Fields D and E; probably at Lau Back-Arc Basin.



1: Preserved specimen collected from Manus Basin (cruise BIOACCESS'98), specimen showing partially protruded pharynx, oral disc about 20 mm in diameter; from LÓPEZ-GONZÁLEZ et al. (2005).



2: Preserved specimen collected from Manus Basin (cruise BIOACCESS'98), specimen cut longitudinally, showing wide oral disc and marginal ridge formed by the sphincter; from LÓPEZ-GONZÁLEZ et al. (2005).



3: Probably the same species on basalt covered by zoantharian, with galatheid crabs *Munidopsis* spp.; in situ view from Lau Back-Arc Basin; Cruise TUIM7; by courtesy of C.R. Fisher.

References:

- GALKIN S.V. (1997) Mar. Geol. **142**:197-206.  
LÓPEZ-GONZÁLEZ P.J., RODRÍGUEZ E. & M. SEGONZAC (2005) Mar. Biol. Res. **1**(5): 326-337.

Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Actinostolidae

*Paranthosactis denhartogi* LÓPEZ-GONZÁLEZ, RODRÍGUEZ & SEGONZAC, 2003

**Size:** Diameter of the pedal disc, 35 mm; mouth, 16 mm; column height, 15 mm; tentacles, 8 mm length. All measurements from preserved and contracted specimens.

**Color:** Preserved material of a brownish color, the tentacles darker. Living animals show a brown crown of tentacles, while the column is dirty white.

**Morphology:** Column smooth, dome-shaped to cylindrical in preserved state; tentacles about 70 in number, of uniform thickness along entire length; sphincter distinctly marked as a prominent marginal ring, mesogloea; longitudinal tentacle musculature ectodermal, equally well developed on all sides;

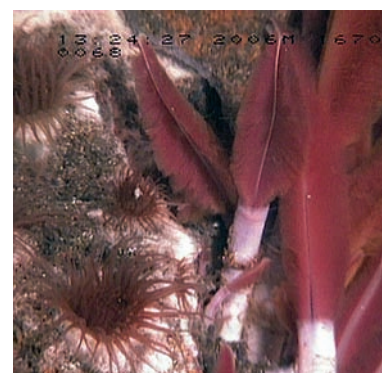
tentacles with mastigophore nematocysts; mesenteries hexamerously arranged, but not according *Actinostola*-rule; same number of mesenteries distally and proximally, four cycles, only the first cycle perfect, all stronger mesenteries fertile, parietobasilar musculature not differentiate as a separate lamella.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. All other biological aspects are unknown. This species has been observed living among *Riftia*, on sediment where 10 cm depth a temperature of 98°C was recorded.

**Distribution:** East Pacific Guaymas Basin.



1: Specimen collected from Guaymas Basin (Cruise Guaynaut, 1991); preserved specimen, about 35 mm along the larger axis at pedal disc; by courtesy of P. López-González.



2: In situ view of specimens among tubeworms *Riftia pachyptila*; cruise Guaynaut © Ifremer.

Reference:

LÓPEZ-GONZÁLEZ P.J., RODRÍGUEZ E., GILI J.-M. & M. SEGONZAC (2003) Zool. Verh. Leiden **345**: 215-243.



Cnidaria, Anthozoa, Actiniaria, Boloceroididae

*Boloceroides daphneae* DALY, in press “giant sea anemone”

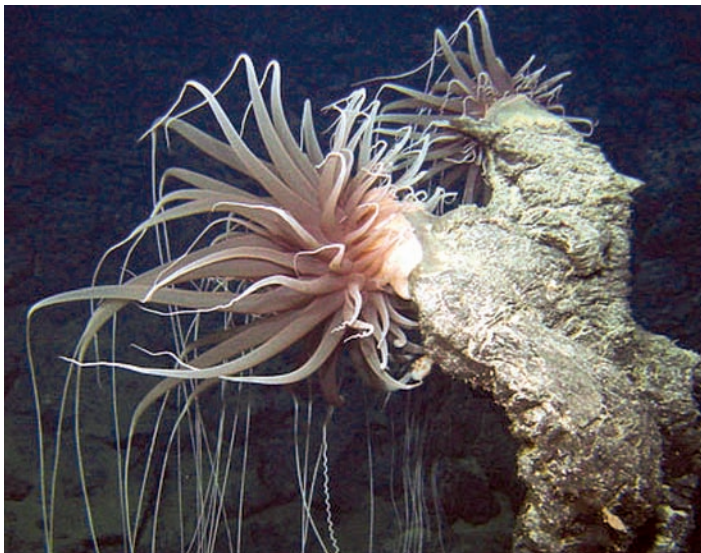
**Size:** Diameter of column 0.1-0.5 m, diameter of tentacle crown 0.5-2.0 m.

**Morphology:** Very large, pale pink to deep purple sea anemone with crown of extremely long, strongly tapering tentacles. Column with ectodermal longitudinal muscles and numerous large (~ 100 µm) spirocysts. Not more tentacles than mesenteries. Preserved specimens may lack tentacles, having only circular openings on oral disc where tentacles had been attached.

**Remark:** Possibly misidentified as a species of *Cerianthus* in DESBRUYÈRES & SEGONZAC (1997): accompanying photograph resembles this species but description does not.

**Biology:** Solitary specimens attached to boulders and cliff faces; long, tapering tentacles stream in current or contact sediment, shed when animal is disturbed. Prey unknown but cnidae extremely large.

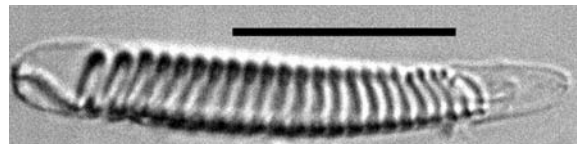
**Distribution:** East Pacific Rise: 9°N to 17°S; the specimens observed in southern areas belong probably to the same species.



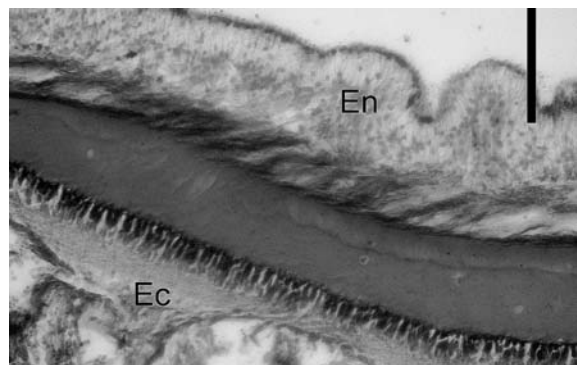
1: Habitus, in situ, from East Pacific Rise: 17°S; cruise Biospeedo © Ifremer.



2: A typical preserved specimen, with actinopharynx extruded through the mouth and most of the tentacles missing; by M. Daly.



3: Spirocyst from the column ectoderm; scale bar 40 µm.



4: Cross section through the column wall, showing longitudinal muscles of the ectoderm (Ec). The endoderm (En) has weak circular muscles; scale bar 250 µm; by M. Daly.

References:

DALY M. (in press) Mar. Biol.

DESBRUYÈRES D. & M. SEGONZAC (1997) Handbook of Deep Sea Hydrothermal Vent Fauna. Editions Ifremer, Brest: 1-279.

M. DALY

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Cnidaria, Anthozoa, Hexacorallia, Actiniaria, Hormathiidae

*Chondrophellia* cf. *coronata* (VERRILL, 1883)

**Size:** Diameter of the pedal disc, 27 mm; column distally, 30 mm; column height, 30 mm; length of contracted tentacles, 4 mm. All measurements from preserved and contracted specimens.

**Color:** Column brownish due to the presence of cuticle, tentacles orange in living specimens, to pale rose in preserved state.

**Morphology:** Pedal disc sharp, covered by cuticle; column divisible into scapus and scapulus, the former with a cuticle, with 12 rows of three high pointed tubercles distally, tubercles not clearly isolated from each other, with smaller tubercles between the principal rows; cuticle thick, especially on the tubercles; sphincter mesogloal, alveolar; tentacles up to 96 in number, the last circle can be incomplete; about similar number of mesenteries distally and proximally, 6 pairs of perfect but sterile mesenteries; acontia present on oldest mesenteries; third and following cycles of mesenteries without filaments and acontia; without cinclidies.

**Remarks:** Despite of the report of this species at Pacific hydrothermal vent areas, the correspondence of Atlantic and Pacific material attributed to this species is unclear. *Chondrophellia coronata* is known from the North Atlantic. Pacific material assigned to this species shows similar cnidae biometry, but is different in external morphology. This species was also reported – with doubts – from the coast of Chile. Specimens from hydrothermal vents agree well with the drawings illustrated by DOUMENC & VAN PRAËT (1988: figure 2). A revision of the species described in this genus by López-González & Segonzac is in progress, and will give more information on the specific pertinence of the specimens collected at hydrothermal vents.

**Biology:** As other sea anemones, probably feeds on caught prey, with a relative wide prey size-range. All other biological aspects are unknown. Very abundant mainly around the Southern East Pacific Rise sites, settled on sulphide deposits or basalts.

**Distribution:** East Pacific Rise: 13°N, 7°S to 32°S.



1: In situ view showing numerous specimens among stalked barnacles (*Neolepas* n. sp.), ophiid fish and galatheid crabs; cruise Biospedo © Ifremer.

Reference:

DOUMENC D. & M. VAN PRAËT (1986) *Oceanol. Acta* **8**: 61-68.

P. LÓPEZ-GONZÁLEZ & M. SEGONZAC

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