Note on *Streptocaulus multiseptatus* (Bale, 1915) (Cnidaria: Leptolida: Aglaopheniidae), with the description of its gonosome

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Key words: Cnidaria; Leptolida; Aglaopheniidae; *Streptocaulus multiseptatus*; redescription; Atlantic.
A fertile specimen of "*Cladocarpus*" *multiseptatus* (Bale, 1915) from the continental slope off Sahara coast is redescribed. The species is referred to the genus *Streptocaulus* Allman, 1883 where it should stand as *Streptocaulus multiseptatus* (Bale, 1915). This record confirms its presence in Atlantic waters.

Introduction

During the oceanographic expedition "*Maroc 0611*", carried out by the "Instituto Español de Oceanografía" on board of R/V "*Vizconde de Eza*" in deep waters off the Sahara coast, four colonies of the rare leptolid "*Cladocarpella multiseptata*" Bale 1915 were collected, amongst which one fertile colony with the complete gonosome (phylactocarps and gonothecae).

This report provides a redescription of the species, including a first description of its gonothecae. According to the morphology of its phylactocarps, the species must be placed in the genus *Streptocaulus* Allman, 1883.

Material and Methods

The material was collected with a Lofoten otter trawl between 410 and 576 m depth. The effective trawling time was 60 minutes. The large volume of invertebrates brought onboard was minutely sorted and the hydroids were preserved in 70% alcohol for later study.

Results

Streptocaulus multiseptatus (Bale, 1915)

Cladocarpella multiseptata Bale, 1915: 304-306, pl. 47 figs 1-5; Bale, 1919: 356; Bedot, 1922: 152, 153, 155; Stechow, 1923: 242; Vervoort, 1966: 152; Ramil & Vervoort, 1992b: 174; Stranks, 1993: 12.

Cladocarpus multiseptatus - Vervoort, 1966: 149, Ramil & Vervoort, 1992a: 108; Álvarez Claudio, 1993: 221-224, fig. 38, pl. 20; Álvarez-Claudio & Anadón, 1995: 239; Álvarez-Claudio, 1996: 13-14, fig. 2.1; Van der Land, Vervoort, Cairns & Schuchert, 2001: 114; Bouillon, Medel, Pagès, Gili, Boero & Gravili, 2004: 124, fig. 65K; Bouillon, Gravili, Pagès, Gili & Boero, 2006: 283.

Cladocarpus cf. *multiseptatus* - Ramil & Vervoort, 1992a: 109-111, fig. 27a.

Material.— Expedition Maroc 0611, Stn 27, 22.1926°N-17.2149°W, 576 m, 21.xi.2006: one colony 17 mm high with phylactocarps and gonothecae (RMNH-Coel. no. 31482); one colony 16 mm high with one phylactocarp, no gonothecae (collection of the Instituto Español de Oceanografía); one hydrocladium with phylactocarps and gonothecae (microslide, collection University of Vigo); one sterile fragment 10 mm high. Stn 75, 24.3571°N-16.2699°W, 410 m, 05.xii.2006: one colony 17 mm high without phylactocarps (collection University of Vigo).

Description.— Detached colonies with a hydrorhiza composed of several perisarc tubes, that probably attached the colonies to hard substrata.

Hydrorhiza giving rise to an erect, straight and unforked axis, polysiphonic in its basal part and monosiphonic distally. Polysiphonic part without division into segments; distal monosiphonic part generally without segmentation.

Primary axial tube devoid of nematothecae in most of its basal part, followed by a frontal row of 5-9 nematothecae before the first hydrocladial apophysis.

Apophyses alternately directed left and right and supporting laterally directed hydrocladia. There is one axillar nematotheca and one to three axial nematothecae occur between two consecutive apophyses. Three nematothecae are placed between the 2-4

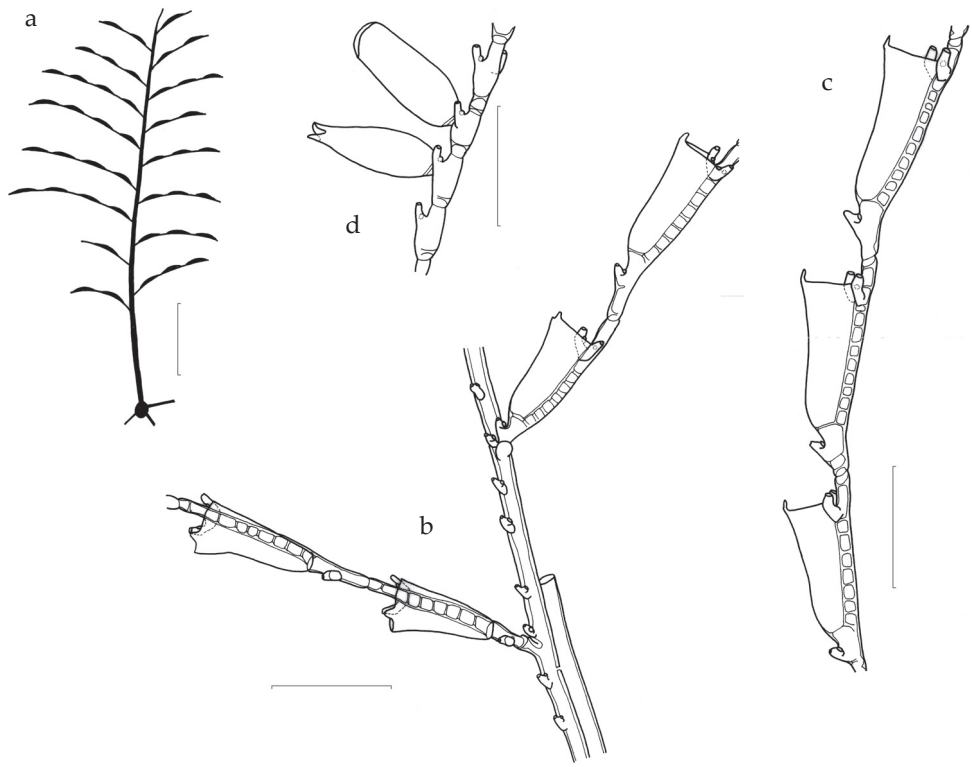

Fig. 1. *Streptocaulus multiseptatus* (Bale, 1915). a, colony; b, part of axis with poly- and monosiphonic structure, and with two alternately placed apophyses supporting hydrocladia; c, two internodes of hydrocladium, lateral view; d, phylactocarp with gonothecae, posterior view. Scales: a, 3 mm; b, c, d, 0.5 mm.

basalmost apophyses (axillar nematotheca not included), two between the following while one nematotheca occurs only sporadically.

One of the colonies from Stn 27 has the distal part divided into segments by slightly marked, transversal nodes. Each segment with one apophysis in distal third, one axillary nematotheca and one or two frontal nematothecae under the apophysis.

Secondary axial tubes without nematothecae; several anastomoses between primary and secondary tubes were observed.

Hydrocladia composed of a succession of internodes, separated by oblique nodes; each internode with one hydrotheca and three nematothecae: one median infracalycine and two laterals.

Hydrotheca elongated tubular, widening just under hydrothecal rim; adcauline wall fully adnate and straight; abcauline wall almost parallel to adcauline and slightly curved outwards in distal third; hydrothecal rim nearly smooth or slightly uneven, with a well developed median cusp.

Median infracalycine nematotheca placed on internode below hydrothecal base, not reaching that base. Nematotheca small, tubular, with two circular apertures, one apical and another at the end of a short tubular process at base of nematotheca, directed towards hydrocladial wall. Lateral nematothecae tubular, surpassing the hydrothecal rim and also with two circular apertures, one apical and another basal at the end of a short tubular process on their adcauline side. Axial nematothecae similar to the infracalycine nematotheca.

Each internode with 11-14 well developed internal septa (perisarc rings), located two under, one above and the rest behind the hydrotheca.

Phylactocarps unpaired, inserting laterally on first hydrocladial internode, between hydrothecal base and median infracalycine nematotheca. Phylactocarp composed of a rachis divided into internodes by straight nodes, each with two internal septa (one basal, one distal), one pair of short tubular nematothecae and occasionally with one gonotheca. The proximal part of internodes, between the paired nematothecae, ventricose. Morphology of nematothecae similar to that of the laterals.

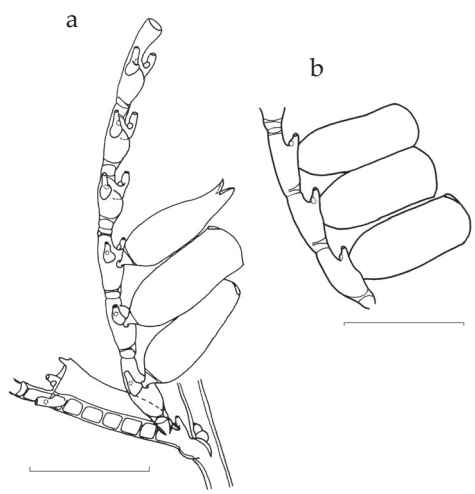

Fig. 2. *Streptocaulus multiseptatus* (Bale, 1915), phylactocarps with gonothecae; a, phylactocarp with three gonothecae, distalmost in lateral view; b, same gonothecae, all in frontal view. Scale: 0.5 mm

Gonothecae, probably female, inserting on rachis in ventricose part, between the paired nematothecae. In lateral view the gonothecae show a dilated basal part, followed by a narrowed distal neck, but in frontal view their shape is cylindrical. Gonothecal walls thin, smooth. Basal part gonotheca with a small chamber. Aperture distal, slit-shaped, curved in frontal view, deepened laterally.

Remarks.— *Streptocaulus multisep-*

tatus was described by Bale (1915, as *Cladocarpella multiseptata*) and was later synonymized with *Cladocarpus sibogae* Billard, 1911 by Billard (1918). Subsequently Stechow (1925) synonymized *C. sibogae* and *C. multiseptata* with *Cladocarpus distomus* Clarke, 1907.

Ramil & Vervoort (1992a) described a small colony fragment collected in the Alborán Sea (Mediterranean) as *Cladocarpus* cf. *multiseptatus*, and, after revision of the syntypes of *C. sibogae*, reached the conclusion that *C. sibogae* and *C. multiseptatus* are both valid species, separated from *C. distomus* (*sensu stricto* and *sensu* Stechow, 1925).

Later, Álvarez Claudio (1993, 1996) recorded *C. multiseptatus* from the Bay of Biscay, but her material was scanty and sterile. As a consequence, the presence of this species in Atlantic and Mediterranean was considered doubtful.

Table 1. Measurements of *Streptocaulus multiseptatus* in μm

	Maroc 0611 Stn 27
Colony, height (in mm)	10 - 17
Axial nematotheca, length	80 - 115
Diameter at node	15 - 20
First hydrocladial internode, length	700 - 720
Hydrocladial internode, length	890 - 990
Diameter at node	50 - 60
First hydrotheca, depth (without cusp)	440 - 460
First hydrotheca, depth (with cusp)	490 - 510
Diameter at rim	180 - 210
Hydrotheca, depth (without cusp)	540 - 620
Hydrotheca, depth (with cusp)	580 - 670
Diameter at rim	190 - 220
Median infracalycine nematotheca, length	110 - 120
Diameter at aperture	15 - 20
Lateral nematotheca, length	120 - 140
Diameter at aperture	20 - 30
Nematotheca of phylactocarp, lenght	95 - 130
Diameter at aperture	15 - 25
Gonotheca, length	510 - 580
Maximal diameter	195 - 230

The study of new and fertile material of *Streptocaulus multiseptatus* from the Sahara coast makes it possible to describe the gonosome and to clarify its systematic position. The morphology of the phylactocarps, an unbranched axis composed of a succession of segments bearing paired nematothecae, indicates that the species must be placed in the genus *Streptocaulus* Allman, 1883 (see Ramil & Vervoort, 1992b). The phylactocarps are identical with those described by Bale (1915), thus the presence of *Streptocaulus multiseptatus* in Mediterranean and Atlantic waters can be confirmed. The gonothecae, here described for the first time, are quite different from those of *Streptocaulus sibogae* (= *Cladocarpus sibogae*), supporting the conclusion reached by Ramil & Vervoort (1992a) about the validity of both species. The authors indicated that a further subdivision of *Cladocarpus* Allman, 1874 and *Streptocaulus* Allman, 1883 does not appear unlikely. Calder (1997: 48) remarks that "in particular *Streptocaulus* still seems to be polypheletic based on phylactocarp morphology". Further study of fertile material of both genera will hopefully clarify these questions.

Distribution.— *Streptocaulus multiseptatus* was recorded from one locality off the coast of Queensland, Australia (Bale, 1915, as *Cladocarpella multiseptata*), from the Alborán Sea off the coast of Morocco (Ramil & Vervoort, 1992a, as *Cladocarpus* cf. *multiseptatus*) and from the Bay of Biscay off the coast of Asturias (Álvarez Claudio, 1993, 1996, as *Cladocarpus multiseptatus*). The depth records are from 135 m (74 fms, Bale, 1915) and 395 m (Ramil & Vervoort, 1992a). Our material originates from two localities off Sahara coast and was collected between 410 and 576 m depth.

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