HALICLONA (HALICLONA) EPPHYTICA N. SP. (PORIFERA, DEMOSPONGIAE, HAPLOSCLERIDA), A SEAWEED-DEWELLING SPONGE FROM THE COLOMBIAN CARIBBEAN

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ABSTRACT

Haliclona (Haliclona) ephlytica n. sp., a new species of seaweed-dwelling sponge of the family Chalinidae (Porifera, Demospongiae, Haplosclerida) from the Colombian Caribbean, is described. As the only member of the subgenus Haliclona (hitherto referred to as the ‘saliens’ group by De Weerdt, 1989) in the Caribbean Sea, it is distinguished from other chalinid species in this area by its regular, anistomotic, ladder-like skeleton of short and robust cores.

INTRODUCTION

Continuing with the systematic inventory of the sponges of the Colombian Caribbean (Zea & Rützler, 1983; Winternmann-Kilian & Kilian, 1983, 1984; Zea & Van Soest, 1986; Van Soest & Zea, 1986; Zea, 1987), and the revision of the haplosclerid family Chalinidae of the North Atlantic (De Weerdt, 1986, 1989; De Weerdt & Van Soest, 1986) and the Caribbean (De Weerdt et al., 1991, 1999; De Weerdt, in prep.), we describe in this paper a new species of Haliclona, subgenus Haliclona, found growing on seaweeds. The species is apparently restricted to the Colombian Caribbean and more closely related to species of the genus living elsewhere in the North Atlantic than to the other species of the Caribbean (De Weerdt, 1989, as Halicula n.sp. 1).

MATERIALS AND METHODS

Material was fixed in 10% formalin neutralized
with borax (20 g/l), and preserved in 70% ethanol. General methodology of spicle prepapa-
ration and tissue sectioning follows Zea (1987).

Specimens were deposited at the Instituto de Ciencias Naturales-Museo de Historia Natural -
Universidad Nacional de Colombia [ICN- 
MHN(P)] in Bogotá, the Instituto de Investiga-
giones Marinas de Punta de Seton - INVE-
MAR (INV-POR) in Santa Marta, and the 
Zoologisch Museum - Universiteit van Amster-
dam (ZMA POR) in Amsterdam. The area is 
described in Zea (1987).

Phylum Porifera Grant
Class Demospongiiae Sollas
Order Haplosclerida Topenent
Family Chalinidae Gray
Genus Halicula Grant

Definition: Chalinidae with unipinicular secondary lines.

Subgenus Halicula Grant, 1835
Definition: Choanosomal skeleton consisting of a very 
regular, ladder-like reticulation of uni-pau-
cipular primary lines, regularly connected by 
unipinicular secondary lines. Ertosomal skeleton, 
if present, a unipinicular, unargentul, isotropic 
reticulation. Oxeas short, rather robust, fusiform 
or with acerate points. Spongín moderate to 
absent. Microscleres, if present, toxa.

Remarks: The subgenus Halicula ("type species 
Spongia oculata Pallás, 1766) is here for the first 
time applied for the 'sloada' group as distin-
guished by De Weert (1989). Pending study of 
all the type material of described genera within 
the Chalinidae, this name was tentatively used for 
one of the eight monophyletic species groups 
within Halicula n.s. A full treatment of type mate-
rial and synonymy of the subgenus Halicula will 
be given in a forthcoming paper (De Weert, in 
prep.)

Halicula (Haliclona) epiphytica n. sp.

Figs 1-2

Haliclona n.sp. 1; De Weert, 1989: 57.

Holotype: ZMA POR. 15559 (in front of the 
slaughterhouse, city of Riohacha, Guajira pen-
insula, Colombian Caribbean; on the red alga 
Lamourouxia (Lamouroux) Howe growing on a 
rock pavement of cobbles cemented by clay, 1 m 

Paratypes: ZMA POR. 5139, ICN-MHN(P) 0170 
(several specimens collected together with the 
holotype); INV-POR 417 (Santa Marta airport, 
on the red alga Bryopsidium subfimbriatum (Turner) 
Kützing stranded on the beach, col. E. Leal, 
February 19, 1985); INV-POR 419 (Santa Marta 
airport, on the red alga Oxytisma romulida (J. 
Agardh). J. Agardh growing on igneous boulders 
scattered on a sandy shore, 0.5-1 m in depth, col. 
S. Zea, June 4, 1983).

Type locality: City of Riohacha, Guajira 
Department, Colombia (1°33'N 72°55'W).

Description: small encrustations, up to 1-4 cm long, 
0.2-1.1 cm wide and 0.15-1.1 cm thick. Several 
independent individuals grow on the same sea-
weed. Surface smooth, dense in aspect, generally 
even. Oxeas numerous, sometimes up to 20 on 
each individual, even with the surface, 0.3-1.4 
mm in diameter.

Colour: cream alive, light cream in spirit and dry. 
Consistency: somewhat compressible and elastic 
but fragile, easily damaged.

Skeleton: ectosome: tangential reticulation of single 
spicles joined by spongín at their ends, form-
ig triangular or polygonal meshes 30-80 µm in 
diameter.

Choanosomal canals 95-500 µm wide. Spicles 
robust, short oxeas with acute points, slightly 
curved; few styles and styloloids; as axial channel is 
frequently visible. Dimensions (length by width, 
means in italics, n=50 spicles) 63-59.676 x 2.9-
5.4-6.9 µm (Riohacha specimens), 66-73.983 x 
4.8-5.3-6.9 µm (Santa Marta, INV-POR 417), 
84-91,97 x 3.5-5.5-5.5 µm (Santa Marta, INV-
POR 418).
Habitat: The species grows on seaweeds in intertidal to shallow subtidal (to about 1 m deep) rocks or rock pavement in or near sandy beaches at sites of turbid waters and relatively strong water movement. It was found living on the red alga *Laminaria japonica*, *Bythebothrium neglectum* and *Cryptosiphon compla*. In a seaweed bed at Ishihaka, it was repeatedly observed throughout 1992, but the greatest frequency occurred during the February sampling (E. Panza, INVEMAR, pers. commun., 1993).

Etymology: Named after the adjective epiphytic (Greek epí = over + phyton = plant) in reference to its sublittoral preference.

**DISCUSSION**

*Holoidea* (*Holoidea*) *epiphyta* stands out among other Caribbean chasuids by its regular ladder-like chaetosomal skeleton of uni-pantispicular primary lines which are very regularly connected by unispicular secondary lines, and its short but robust oesae. The combination of this type of skeleton and spicules, characteristic of the subgenus *Holoidea*, has not been found in other species occurring in the area, from which it may be concluded that the new species is the only representative of the subgenus in the Caribbean.

This is a remarkable observation, especially since the subgenus *Holoidea* is well represented in the northern part of the North Atlantic (de Weerdt, 1986, 1989), as well as in the south Antarctic (de Weerdt, unpublished). Whether
Halichona (Halichona) is equally rare throughout the entire tropical belt can only be established after a thorough world-wide revision of the family Chalinidae. Preliminary studies of Indo-Pacific species by De Weerdt (unpublished) indicate that this may well be the case. If it turns out to be restricted to higher latitudes, the local occurrence of *H. epiphytica* in the Santa Marta area may be due to the fact that the north-eastern Colombian coast is an area of seasonal (December-April) cold water upwelling, causing surface water temperatures to be as low as 21°C (summary in Zea, 1993). The area may thus serve as a refugium for species that require lower water temperatures. A further indication of this is the fact that several algal genera and species, occurring in subtropical and warm-temperate areas, are present in the Santa Marta area during the upwelling season, and that several other tropical and Caribbean genera and species are temporarily or entirely absent (Bula-Meyer, 1977, 1983).

Other encrusting Caribbean chalinids that are somewhat similar to *H. epiphytica* in external morphology are *H. altifragilis* (Heckerd, 1965) and *H. manglares* Alcolado, 1984. *H. altifragilis* is snow white and brittle, with a dense subcoralline skeleton and oxeas of 130-170 x 2.3-3.5 µm. The species belongs to the subgenus *Halichothonia*, earlier known as the 'fusiliana' group (cf. De Weerdt, 1989 and De Weerdt et al., 1999). *H. manglares* stands out by its turquoise-green colour and its consistent occurrence on red mangroves, *Rhizophora* manglares, silt roots. It differs from *H. epiphytica* further more by its skeleton, which is rather irregular with a tendency to form rounded meshes and thinner oxeas (2-4 µm) which are pronouncedly fusiform and rather strongly curved. It belongs to the 'soemanni' group, which will be given a proper name in the near future (De Weerdt, in prep).

*H. (H.) epiphytica* is most closely related to the Mediterranean *H. (H.) xanis* (Sara, 1958), as *Adcinia* and *H. (H.) xanis* (Sara, 1958, as *Adcinia*) (cf. De Weerdt, 1985), and also very similar to the Mediterranean *H. (H.) griseigener* Van Lent & De Weerdt, 1987. These species are here assigned to the subgenus *Halichothonia*. *H. (H.) xanis* has a punctate surface due to subcoralline spaces, and a tendency to form long proliferations which attach themselves interminently to the substrate. The oxeas are longer than in *H. (H.) epiphytica*, viz. 100-118 µm (Sara, 1958) but equally thick (4-7 µm) (Sara, 1958) 89-150 x 2.5-8.0 µm in Grisescinger, 1971). *H. (H.) xanis* has much larger oxeas (3 mm), a punctate surface like *H. (H.) xanis*, and a leathery, incompressible consistency. The oxeas are longer than in *H. (H.) epiphytica*, viz.
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