



A new genus of carnivorous sponges (Porifera: Poecilosclerida, Cladorhizidae) from the deep N-E Pacific, and remarks on the genus *Neocladia*

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Abstract

A new sponge collected from 2,024 m depth on the Vance Seamount in the north-east Pacific by the ROV 'Tiburon' is described in the family Cladorhizidae as a new genus and new species, *Lollipopcladia tiburoni*. The sponge, 112 mm in total height, is in the shape of a pedunculate disc, like several cladorhizid sponges of the genera *Abyssocladia* and *Neocladia*. It differs from these genera and from all carnivorous poecilosclerids by its microsclere complement, consisting of palmate isochelae, sigmancistras, and strongly curved anchorate isochelae superficially resembling those of *Neocladia*. A re-examination of the holotype of *Neocladia* indicates that it is a valid genus different from *Chondrocladia*.

Key words: Porifera; carnivorous sponge; Deep Pacific; new genus; new species; Cladorhizidae

Introduction

A carnivorous feeding habit is known in poecilosclerid sponges classified mostly in the Cladorhizidae, but also in Guitarridae and Esperlopsidae in a few cases (Vacelet, 2007). These sponges display a special morphology, with a symmetrical shape, stipitate with lateral processes lined by hook-like spicules. Aquiferous system, apertures and choanocyte chambers are absent, except in *Chondrocladia* spp. in which a modified aquiferous system is used to inflate translucent spheres on which prey capture is performed (Kübler & Barthel 1999). Recent studies (Cristobo *et al.* 2005; Lehnert *et al.* 2005; Reiswig & Lee 2007; Vacelet 2006; Vacelet & Boury-Esnault 2002) have revealed a very high proportion of new taxa, especially in the deep Pacific, suggesting that the diversity of carnivorous poecilosclerids in the deep-sea environment is largely underestimated. Since the beginning of the century, 15 new species have already been added to the 90 cladorhizids described since their discovery (Sars 1872). The further development of deep sea sampling and observational techniques, such as manned submersibles and ROVs, will certainly considerably increase this number in the near future, with the expectation that new types of body plan organization will be discovered.

The taxonomy of carnivorous sponges is at present based mainly on their microsclere spicule complement (Hajdu & Vacelet 2002; Vacelet 2007). The megasclere spicules, generally mycalostyles of different sizes, are relatively uniform, and when peculiar megascleres are present, such as strongyles or desmas at the point of fixation to the substrate (referred to here as the fixation base), they are distributed in various genera or even families, and as such are only useful to differentiate species. Similarly, gross morphology is of little value for generic or family distinction. However, most species of the recently resurrected genus *Abyssocladia* Lévi, 1964 appear to have a remarkable morphology, viz. a disc-shaped body on a thin peduncle. This morphology is also known in *Neocladia* Koltun, 1970, at present considered as a synonym of *Chondrocladia* (Hajdu & Vacelet 2002).