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***Podocoryna loyola*, n. sp. (Hydrozoa, Hydractiniidae): a probably introduced species on artificial substrate from southern Brazil**

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Abstract

Podocoryna loyola, a new hydractiniid species, has been found on artificial substrates in Baía de Paranaguá, southern coast of Brazil, since April 2007. Its main morphological characteristics are: (1) polymorphic colonies with reticular stolons or encrusting hydrorhiza not covered by periderm and smooth chitinous spines; (2) newly-released medusae with eight tentacles and small interradial gonads; (3) mature medusae with eight tentacles and unbranched oral lips; gastric peduncle absent. Molecular data show that *P. loyola* is distinct from all other examined species of *Podocoryna*, and from *P. hayamaensis* Hirohito (1988), its sister species from Japan. As the polyps having been noted only quite recently, and in having been found only on man-made objects in port areas and estuaries, the species is most likely exotic to the region.

Key words: hydroid, new species, Baía de Paranaguá

Introduction

Species of the family Hydractiniidae are highly polymorphic hydrozoans that are found in all oceans and seas worldwide. They usually grow on mollusk shells, especially those inhabited by hermit crabs, but occur as well on other motile and non-motile substrata including fishes, algae, rocks, and artificial substrates (Williams & McDermott 2004; Puce *et al.* 2008; Schuchert 2008; Miglietta *et al.* 2009).

Hydractiniidae is a well-studied hydrozoan family, often used as model organism in developmental biology (Frank *et al.* 2001). However, the monophyly of its more speciose and well known genera, *Podocoryna* M. Sars, 1846 (*Podocoryne* is an incorrect subsequent spelling introduced by Lütken, 1850), *Hydractinia* Van Beneden, 1844, and *Stylactaria* Stechow, 1921a (the name *Stylactis* Allman, 1864, sometimes used in the past for species of *Stylactaria*, is instead a junior synonym of *Hydractinia*) have been debated in morphological, phylogenetic, and molecular studies (Motz-Kossowska 1905; Broch 1914; Naumov 1960; Bouillon *et al.* 1997; Boero *et al.* 1998; Miglietta *et al.* 2009, 2010b; Miglietta & Cunningham 2012). Cunningham & Buss (1993) and Boero *et al.* (1998) argued, on the basis of molecular data and morphological data, respectively, that medusa suppression had occurred repeatedly during evolution of Hydractiniidae, generating very similar poly- and paraphyletic taxa. On this basis, Boero *et al.* (1998) proposed merging *Stylactaria* and *Podocoryna* into *Hydractinia* (following the Principle of Priority in zoological nomenclature). This proposal has been followed by several authors (Bouillon & Boero 2000; Schuchert 2001, 2008; Bouillon *et al.* 2006; Stampar *et al.* 2006).

In recent multigene phylogenetic studies, Miglietta *et al.* (2009, 2010) and Miglietta & Cunningham (2012) argued against recognition of a single genus (*Hydractinia*) in the family and instead considered seven genera valid (*Hydractinia*, *Podocoryna*, *Stylactaria*, *Hydrissa* Stechow, 1921a, *Janaria* Stechow, 1921b, *Clavactinia* Thornely, 1904 and *Clava* Gmelin 1790) and described two new ones (*Schuchertinia* and *Bouillonactinia*). This phylogeny-based classification scheme, however, largely precludes genus diagnosis based on the characters traditionally used, i.e., type of hydrorhiza and gonophore, because hydrorhizal growth pattern and medusa reduction have occurred

How can a new species be an alien species in its type locality? Carlton (2009) commented that one of the categories of errors in estimating the number and thus the importance of introduced species is the assumption that, if a species is not known from elsewhere, it is native to the place where it has been found. Carlton (2009) proposed the term “pseudoindigenes” to indicate species that fit this scenario and listed 17 such species (Table 2.4) that were first described as new, and subsequently recognized as being introduced. Evidence suggests that this may be applied to *P. loyola*, but more sampling is needed to confirm this hypothesis and/or identify the source of introduction.

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