



Article

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Medusoids in the life cycle of *Dentitheca dendritica* (Nutting, 1900) and *Nemalecium gracile* sp. nov. (Cnidaria: Hydrozoa)

HORIA R. GALEA^{1,4}, ROMAIN FERRY^{2,3} & JEAN-MARIE BERTOT³

¹Hydrozoan Research Laboratory, 405 Chemin des Gatiers, 83170 Tourves, France.

²Département Scientifique Interfacultaire EA929-AIHP-GEODE (BIOSPHERES), Université des Antilles et de la Guyane, Campus de Schoelcher, 97275 Schoelcher, Martinique, France.

³Océanviroennement, Résidence Madiana Plage, App. B21, 97233 Schoelcher, Martinique, France.

⁴Corresponding author: horia.galea@gmail.com

Abstract

Gonothecae of both sexes and the non-released medusoids of *Dentitheca dendritica* (Nutting, 1900) are described for the first time. The genus *Nemalecium* Bouillon, 1986 is enriched through the discovery of a second species, *N. gracile* sp. nov., in Martinique, Lesser Antilles. Morphological data and comparison with material provisionally assigned to *N. lighti* (Hargitt, 1924) are provided. The mono- or dioecious colonies of *N. gracile* produce a swimming cryptomedusoid gonophore. The cnidome of *Nemalecium* is shown to comprise not only pseudostenoteles and microbasic mastigophores, but also two additional nematocyst types unreported so far.

Key words: hydroid, thecate, new species, Caribbean, Martinique

Introduction

Non-feeding reduced medusae of various types, termed medusoids, are sparsely distributed across Hydrozoa (Bouillon *et al.* 2006). Recent phylogenetic studies have suggested that such structures may have evolved within the family Plumulariidae McCrady, 1859 from ancestors lacking a medusa stage (Leclère *et al.* 2007, 2009), in accord with earlier hypotheses (Boero & Bouillon 1987, 1989). However, the production of medusoids within this family is a rare phenomenon and just two classical examples are well documented, *viz.* *Plumularia obliqua* (Johnston, 1847) (see Motz-Kossowska 1907) and *Dentitheca bidentata* (Jäderholm, 1920) (see Migotto & Marques 1999).

While medusoid production seems to be an exception in *Plumularia* Lamarck, 1816, there are indications that it could be the rule in *Dentitheca* Stechow, 1919. Indeed, it has been shown that the medusoids belonging to the superfamily Plumularioidea are always characterized by the presence of a belt of refringent corpuscles around the bell margin, a feature especially visible in living specimens (Migotto & Marques 1999, Bourmaud & Gravier-Bonnet 2004, 2005). Consequently, it is entirely conceivable to suspect that the "cluster of rounded highly refractive granules near the aperture" of the gonotheca, observed by Bale (1914) in his *D. asymmetrica*, belongs to a medusoid gonophore. Additionally, the illustrations provided by Watson (1997) for *D. alata* (Bale, 1888), and those by Hirohito (1995) for both *D. habereri* (Stechow, 1909) and *D. hertwigi* (Stechow, 1907), leave little doubt about the true nature of their dispersive stages. In contrast, nothing is known about *D. dendritica* (Nutting, 1900), a species whose gonothecae remained undiscovered until recently (Wedler 2004, misidentified as *D. habereri*). The finding of fertile colonies in Martinique, Lesser Antilles, allowed us to make observations on living material and provide a description of its gonophores.

The so far monotypic genus *Nemalecium* Bouillon, 1986 is well known through its hydranth-bearing nematodactyls and the peculiar production of swimming medusoid gonophores (Gravier-Bonnet & Migotto 2000) among the haleciid hydroids. A second, well-characterized species from the Caribbean is described, together with