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The status of *Plumularia lagenifera* Allman, 1885 (Cnidaria, Hydrozoa) and related species

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Abstract

The current status of *Plumularia lagenifera* Allman, 1885, a common thecate hydroid of the west coast of the USA and Canada, is problematic as it is difficult to distinguish from the near cosmopolitan and very variable *Plumularia setacea*. Type material of *P. lagenifera* and newly collected material of *P. lagenifera* and *P. setacea* from the region of the type locality of the former was used to compare it to *P. setacea* from the Atlantic. Measurements of a number of morphological traits were made and analysed using principal components analyses. Type material of the Californian *Plumularia palmeri* Nutting, 1900 was also included in the comparisons and confirmed the view of earlier workers that it is indistinguishable from *P. setacea*. Additionally, South African material referred to *P. lagenifera* by Millard (1975) was compared to the material from the NE Pacific. *Plumularia lagenifera* remains difficult to separate from *P. setacea*. The convex outer wall of the hydrotheca offers the only operational character to distinguish *P. lagenifera* from *P. setacea*, which always has straight or even concave hydrothecae. For morphological and biogeographic reasons, South African *P. lagenifera* sensu Millard (1975) should be referred to *P. gaimardi* (Lamouroux, 1924).

Key words: USA, California, Washington, Canada, South Africa, *Plumularia*, revision, hydroids

Introduction

The genus *Plumularia* Lamarck, 1816 comprises about 90 potentially valid species of marine, colony-forming hydroids (Schuchert, 2012). They occur in all tropical to temperate seas, often in quite shallow depths. The colony size, usually in the cm range, as well as their feather-like form makes them rather conspicuous and they are well represented in faunal guides (Figs 1–2; for a general overview on the genus see Cornelius (1995), Calder (1997) or Bouillon *et al.* (2006)).

The iconic representative of the genus—and type species—is *Plumularia setacea* (Linnaeus, 1758), a common, shallow water species that has been found in nearly all temperate and tropical oceans (Cornelius 1995). *Plumularia setacea* shows considerable morphological variation (Figs 2A–B, 4A–F; Millard 1975, Hughes 1986, Galea & Leclère, 2007) and many forms and geographically separated populations have been named (for a synonymy see e.g., Ansín Agís *et al.* (2001) or Calder (1997)). However, it is unclear if some deviant morphotypes and populations outside the region of the northeastern Atlantic (type locality: Whitestable, northeast Kent, U. K.) are really conspecific. Likewise, there are several nominal species closely resembling *P. setacea* that are currently regarded as distinct, but which have a long history of discussion disputing their validity. One of those species is *Plumularia lagenifera* Allman, 1885 (Fig. 1).

Plumularia lagenifera was first described by Allman (1885) based on dried material he had received from Miss H. Gatty. The colony had been found on seaweeds collected from Vancouver Island (British Columbia, Canada). Allman did not give a differential diagnosis that would allow separating the species from other similar species, but his figures and description indicate that it has a rather rounded outer wall of the hydrotheca. The type material is still being kept by the natural history museum in London. Most of it is a dry preparation as it was at Allman's time, only a small piece has been transferred to alcohol.