



***Bathykorus bouilloni*: a new genus and species of deep-sea jellyfish from the Arctic Ocean (Hydrozoa, Narcomedusae, Aeginidae)**

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Abstract

A new genus and species of a common deep-water narcomedusa is described from the Arctic Ocean. The species has four primary tentacles, four secondary tentacles, with three interradial manubrial pouches in each quadrant. A revision and taxonomic key of the family Aeginidae is presented to account for the new genus. Detailed information on its fine-scale vertical and horizontal distributions show that it occurs in a fairly narrow depth range between 1400–2000 meters. The species was observed 423 times at eleven stations, demonstrating that new species can be common in the under-explored regions of the ocean.

Key words: Jellyfish, ROV, biodiversity, vertical distribution, Cnidaria, medusae, Canada Basin, Northwind Ridge, Chukchi Plateau

Introduction

Narcomedusae Haeckel, 1879 is a group of diverse medusae that are primarily known from the deep sea. There are currently four families: Aeginidae, Cuninidae, Solmarisidae (Bouillon *et al.* 2006; Daly *et al.* 2007), and the recently added Tetraplatiidae (Collins *et al.* 2006a; Collins *et al.* 2008). Although there is great variation in body form, they are largely characterized by having few, non-contractile tentacles which root into the exumbrellar surface and that are often held aloft in front of the swimming medusae, and by their unusual axis of development from larvae to adult (Kramp 1961; Bouillon 1987; Bouillon *et al.* 2006; Daly *et al.* 2007). There have been few genetic studies of the group as a whole (Collins 2002; Collins *et al.* 2006a, b; Collins *et al.* 2008) and although the order Narcomedusae appears to be monophyletic, recent data point to several problematic issues at the family and generic level that still need attention (Collins *et al.* 2008; Haddock, Pers. Com.).

Narcomedusae has 13 commonly observed genera, with upwards of 45 species described, including several recently added genera and species (Xu & Zhang 1978; Arai *et al.* 2000; Bouillon *et al.* 2001; Bouillon *et al.* 2006; Collins *et al.* 2006a; Fuentes & Pagès 2006; Schuchert 2009). As was noted by Fuentes & Pagès (2006), virtually all new species to the family Aeginidae have required the creation of new genera, showing the description of diversity of the Aeginidae has been mainly at the generic level, not at the species level. This pattern of accumulating genera points to the absence of reliable species-level morphological characteristics and the need for detailed molecular data to elucidate the true relationships of these difficult to classify taxa.

The ecology of narcomedusae has been most studied in recent years with the advent and propagation of deep-diving submersible technologies. As the majority of these species are found in the deep sea and do not tend to survive the stress and abrasion in typical plankton nets, research on live specimens *in situ* is still an emerging field (Mills & Goy 1988; Raskoff 2002; Lindsay & Hunt 2005; Raskoff *et al.* 2005; Haddock 2007; Lindsay *et al.* 2008; Robison 2004; Raskoff *et al.* In press). These recent examinations of deep-sea environments around the globe have shown the narcomedusae to be abundant and important players in regional ecosystems.