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New records of Pectinariidae (Polychaeta) from Lizard Island, Great Barrier Reef, Australia and the description of two new species

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Abstract

Five species of Pectinariidae have previously been reported from Australia. This study documents the first records of this family from the Lizard Island region: *Pectinaria antipoda* is recorded, in addition to its already currently wide Australian distribution; two new species, *Amphictene lizardensis* n. sp. and *Pectinaria carnosus* n. sp. were also discovered and described. A key to all Australian species of Pectinariidae is provided.

Key words: key to species, morphology, Queensland, marine worms, new species

Introduction

Pectinariidae is a family of polychaetes characterized by their diagnostic ice-cream cone shaped sandy tubes and the presence of prominent chaetae, known as paleae, on the first segment. Despite previous confusions and disagreements (Hartman 1941; Day 1967; Fauchald 1977; Holthe 1986), it is currently accepted that the family consists of five genera (Hutchings & Peart 2002; Sun & Qiu 2012).

Pectinariids are poorly known from tropical Australian waters. Hutchings & Peart (2002) undertook a review of Pectinariidae in Australia and recognized the presence of five species belonging to two genera *Amphictene* Lamarck, 1818 and *Pectinaria* Savigny in Lamarck, 1818. *Amphictene* can be identified by both the rim of the cephalic veil and the raised dorsal opercular rim, both cirrate, whereas *Pectinaria* can be identified by the following combination of characters: cephalic veil with numerous long cirri, raised smooth opercular rim, and neurochaetal uncini having major teeth arranged in two or three (or more) rows. The five species of pectinariids occurring in Australia, *Amphictene favona* Hutchings & Peart, 2002, *Amphictene uniloba* Hutchings & Peart, 2002, *Pectinaria antipoda* Schmarda, 1861, *Pectinaria dodeka* Hutchings & Peart, 2002 and *Pectinaria kanabinos* Hutchings & Peart, 2002 have all been recorded from Queensland (Hutchings & Peart 2002), although not from the Lizard Island region.

During the Polychaete taxonomic workshop held at Lizard Island from 12th to 26th August 2013, extensive collections of polychaetes were made around the island and nearby areas. In addition, materials were collected by Australian Museum staff during the CReefs expeditions undertaken from 2008 to 2010. CReefs was the Australian node of the Census of Marine Life, and three coral reef areas were sampled intensively for polychaetes, including Lizard Island over 3 years (2008–2010). Representatives of Pectinariidae collected during these expeditions are included in this paper.

Material and methods

Specimens were collected by hand during the 2013 Lizard Island Polychaete Workshop and the 2010 CReefs Project, and fixed in formalin (7%) or ethanol (70% or 95%).

Specimens were photographed with Spot Flex CCD 15.2 camera fitted on a Leica MZ16 dissection