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New *Prototrochus* species of sea cucumber from Australia (Echinodermata: Holothuroidea: Synaptida: Myriotrochidae)

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Abstract

The case put by Alexey Smirnov in 2012 is accepted and the order name Synaptida Cuénot is adopted in place of Apodida Brandt. Two new Myriotrochidae Théel species from the continental slope of Australia are described: *Prototrochus rob-binsae* **sp. nov.** and *Prototrochus roninae* **sp. nov.** A key to the six Australasian species of *Prototrochus* Beljaev & Mironov and a distribution and depth map are provided.

Key words: Australasia, Synaptida, Myriotrochidae, *Prototrochus*, new species, key, map

Introduction

The goals of The Australian Marine National Facility RV *Southern Surveyor* voyage SS07/2005 were to map the benthic ecosystems on the deep continental shelf and slope in Australia's "South West Region", to further an understanding of evolution and biogeography, and support implementation of the SW Regional Marine Plan and Commonwealth Marine Protected Areas. We report here on the two myriotrochid specimens taken during Leg 2 of this voyage along the south-west corner of Western Australia from Perth to Albany and return.

The Australian Marine National Facility RV *Southern Surveyor* voyage SS2013_RC19 was a collaborative benthic survey of the continental slope of the Great Australian Bight by the CSIRO, SARDI, SAMA and NMV (see below for abbreviations). We report here on the single myriotrochid specimen recovered during this voyage.

O'Loughlin & VandenSpiegel (2007) reported on synaptid (then apodid) species from southern Australia. Three *Prototrochus* Beljaev & Mironov, 1982 species were described: *P. burni* O'Loughlin, 2007; *P. staplesi* O'Loughlin, 2007, and *P. taniae* O'Loughlin, 2007. *Myriotrochus australis* (Beljaev & Mironov, 1981), now *Prototrochus australis* (referred by Beljaev & Mironov 1982), was previously reported for eastern Australasian waters. Here we further the work on Australasian myriotrochid species of Beljaev & Mironov (1981, 1982) and O'Loughlin & VandenSpiegel (2007) and add two new species of *Prototrochus* for the continental slope of Australia.

Methods

Photos of preserved specimens were taken at Museum Victoria by Hugh MacIntosh in collaboration with Mark O'Loughlin, using a Leica DM5000B compound microscope with attached Leica DFC 500 digital camera system. Series of images were acquired using Differential Interference and Polarizing filters and montaged with Helicon Focus software. The Great Australian Bight specimen (SAMA K4516) was mounted in glycerol, and the Albany specimen (NMV F151834) is mounted permanently on a microscope slide.