



## New taeniogyrinid species of sea cucumber from the Weddell Sea (Echinodermata: Holothuroidea: Synaptida)

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### Abstract

The case put by Alexei Smirnov in 2012 is accepted and the order name Synaptida Cuénot is adopted in place of Apodida Brandt. Two new Synaptida species are described for the Weddell Sea in Antarctica with single author O'Loughlin: *Sigmodota magdarogera* sp. nov. and *Taeniogyrus bamberi* sp. nov.. A specimen of *Sigmodota magnibacula* (Massin & Hétérier) is described. A key is provided for the genera and species of Taeniogyrinae that occur south of the Antarctic Convergence.

**Key words:** Antarctica, Synaptida, Taeniogyrinae, *Sigmodota*, *Taeniogyrus*, *magnibacula*, new species

### Introduction

The British Antarctic Survey JR275 cruise visited the Weddell Sea from February to March in 2012 on the RRS *James Clark Ross*. As part of the British Antarctic Survey's core EvolHist (Evolutionary History of the Polar Regions) project, the expedition aim was to assess biodiversity by sampling the benthic biota of the Weddell Sea continental margin and continental slope using an Agassiz trawl (AGT) and an Epibenthic Sledge (EBS) fitted with a camera. Holothuroid (sea cucumber) specimens were collected by Melanie Mackenzie and the biology team, led by Huw Griffiths of the British Antarctic Survey (BAS). AGT sampling was carried out in 55 locations in the Eastern Weddell Sea at depths of between 400 and 2,000 m. Superficial sorting and identification of material was carried out during the cruise, with holothuroid specimens preserved in 96% ethanol and sent to Melanie Mackenzie and Mark O'Loughlin at Museum Victoria in Australia for further examination and determination. Identification of holothuroid material collected on this cruise is ongoing but synaptid (formerly apodid) specimens from all AGT samples have now been identified. Two new species are described here, along with a small damaged specimen that we judge to be *Sigmodota magnibacula* (Massin & Hétérier, 2004) in spite of relatively small ossicle sizes and tentacle rods with lateral projections. An additional collecting site east of the South Orkney Islands at under 300 m did not yield any synaptid material from AGT samples. JR275 samples from the 18 EBS deployments at between ~280 and ~2060 m in the South Orkneys and Eastern Weddell Sea are still being processed.

A comprehensive overview of the especially diverse Antarctic sea cucumber species was provided by O'Loughlin *et al.* (2010). Their list nominated 187 Antarctic holothuroid species (including 51 until then un-described), and mtDNA sequence data provided insight into additional cryptic species and synonymies. Three subsequent papers, by O'Loughlin & VandenSpiegel (2010) on apodids (now synaptids), O'Loughlin & Whitfield (2010) on psolids, and O'Loughlin *et al.* (2013), have furthered our knowledge of the previously un-described Antarctic holothuroids.

Here we further the work of O'Loughlin & VandenSpiegel (2010) on Antarctic apodids (now synaptids) and update their table and key. Further publications will provide a comprehensive report of all holothuroid material collected during the JR275 cruise and describe additional new species.