



Psychropotid holothurians (Echinodermata: Holothuroidea: Elasipodida) collected at abyssal depths from around the Crozet Plateau in the Southern Indian Ocean*

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* In: Brökeland, W. & George, K.H. (eds) (2009) Deep-sea taxonomy — a contribution to our knowledge of biodiversity. *Zootaxa*, 2096, 1–488.

Abstract

Seven species of holothurians of the family Psychropotidae were collected during the cruise D300 of RRS *Discovery* to Crozet plateau. Three of them, *Benthodytes wolffi*, *Psycheotrepes discoveryi* and *Psychropotes xenochromata* are described as new to science. One species, *Benthodytes abyssicola* Théel, regarded recently as *incertae sedis*, is re-described with designation of a lectotype. Additional notes are provided to descriptions of *Psychropotes scotiae* (Vaney) known from two specimens and *Psychropotes longicauda* Théel, the cosmopolitan highly variable species.

Key words: *Benthodytes*, *Psycheotrepes*, *Psychropotes*, Psychropotidae, new species

Introduction

Holothurians of the family Psychropotidae are among the least studied deep-sea holothurians. The family was defined by Théel (1879, 1882, 1886), who erected four new genera and 14 new species based on the collection of H.M.S. *Challenger*. Subsequently 34 species were described by Verrill (1884), von Marenzeller (1893), Ludwig (1894), Perrier (1896), Hérouard (1896, 1902), Sluiter (1901a, 1901b), Koehler and Vaney (1905), Vaney (1908), Ohshima (1915), H.L. Clark (1920) and Belyaev and Vinogradov (1969). Three of them were later transferred to other orders of holothurians. Many of remaining 31 species were synonymized by Hansen (1975), who revised the family. Hansen also regarded the genus *Euphronides* Théel as a synonym of the genus *Psychropotes* Théel and described five new species. To date the family includes three genera and 22 species. Despite Hansen's great contribution to our knowledge of the Psychropotidae, the status of many species in the family remains unclear. In particular, many problems remain with the cosmopolitan and highly variable species *Psychropotes longicauda* Théel and *P. depressa* (Théel). After Hansen's monograph only a few publications on the taxonomy of the Psychropotidae have appeared (Pawson 1985, Massin & Sibuet 1983 and Gebruk 2008) and the family requires further study.

During the D300 cruise of RRS *Discovery* to Crozet Plateau in December 2005–January 2006 seven species of Psychropotidae were collected. Three of them, *Benthodytes wolffi*, *Psycheotrepes discoveryi* and *Psychropotes xenochromata*, are new to science. One species, *Benthodytes abyssicola* Théel, regarded as *incertae sedis* by Hansen (1975), is re-described following a re-examination of the type series. Additional notes are presented on the morphology and distribution of *Psychropotes scotiae* (Vaney) and *P. longicauda*.