



## ***Peniagone crozeti*, a new species of elasipodid holothurian from abyssal depths off the Crozet Islands in the Southern Indian Ocean\***

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### **Abstract**

Material collected from the RRS *Discovery* Cruise 300 to the Crozet Islands contained a new species of elasipodid holothurian *Peniagone crozeti* sp. nov. This new species dominated the megafauna at an abyssal site to the east of the islands under an area of high surface productivity, but was found in low abundance at a site located south of the islands under a high nutrient low chlorophyll regime, typical for many areas in the Southern Ocean. *Peniagone crozeti* differs from other members of the genus by the shape of its calcareous deposits.

**Key words:** Elpidiidae, Elasipodida, Holothuroidea, taxonomy

### **Introduction**

On the RRS *Discovery* Cruise 300 in December 2005 a number of semi-balloon otter trawls were conducted at abyssal depths in two regions under different productivity regimes around the Crozet plateau in the southern sector of the Indian Ocean (Hughes *et al.* 2007). A diverse variety of holothurians were collected including many different species belonging to the family Elpidiidae Théel, 1882. Some members of the family are known to display opportunistic responses to seasonal fluxes of nutrients and to form dense aggregations (Billett & Hansen, 1982; Gutt & Piepenburg, 1991; Billett *et al.*, 2001). Elpidiid holothurians of the genus *Peniagone* Théel, 1882 are a major component of deep-sea ecosystems in the Atlantic and Pacific oceans (Gebruk 1990; Bluhm & Gebruk 1999; Ruhl 2007), including canyon systems (Rowe 1971, 1972). In total 10 species of *Peniagone* were collected from around the Crozet Islands, representing about one quarter of the all recognised species worldwide. A new species, *Peniagone crozeti* sp. nov., is described here based on a large haul of material and underwater images which provides information on the species in its natural state.

### **Results**

Ten species of *Peniagone* were collected at both sites around the Crozet Islands in varying abundance: *Peniagone diaphana* (Théel, 1882), *P. vitrea* Théel, 1882, *P. gracilis* (Ludwig, 1894), *P. challengerii* Théel, 1882, *P. horrifera* Théel, 1882, *P. elongata* (Théel, 1879), *P. affinis* Théel, 1882, *P. willemöesi* (Théel, 1882), *P. purpurea* (Théel, 1882) and *Peniagone crozeti* sp. nov. Two species, *P. affinis* and *P. willemöesi* were abundant to the south of the Crozet Islands in an area typical of high nutrient, low chlorophyll (HNLC)