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First record of a living species of the genus *Janulum* (Class Demospongiae) in the Southern Hemisphere

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Abstract

A new species of the enigmatic sponge genus *Janulum* de Laubenfels, 1936 was discovered recently on the Louisville Seamount Chain, in International Waters to the east of New Zealand; two small specimens were found encrusting the interstices of the stony coral *Solenosmilia variabilis* Duncan at a depth of 1200–1600 m. *Janulum imago* sp. nov., is described and compared with the genus type *J. spinispiculum* (Carter, 1876) from the North Atlantic. *Janulum* was also recorded from the Late Eocene Oamaru Diatomite of southern New Zealand in 1892, but was misidentified as genus *Plocamia* Schmidt (Order Poecilosclerida Topsent, Family Microcionidae Carter). Fossil species *Janulum princeps* sp. nov. is also described herein and represents the first record of this North Atlantic-Arctic Ocean genus in the Southern Hemisphere. The validity of *J. filholi* (Topsent, 1890), the second and only other North Atlantic species currently assigned to *Janulum*, is considered in the context of *J. spinispiculum* and the new species *J. imago* sp. nov.

Key words: Porifera, International Waters, Louisville Seamount Chain, Late Eocene, Oamaru Diatomite, new species

Introduction

Specimens of a new species of the enigmatic sponge genus *Janulum* de Laubenfels, 1936 were recently collected from International Waters to the east of New Zealand on Forde Guyot, Louisville Seamount Chain, between 1200 and 1600 m (Fig. 1). Prior to this discovery, the genus was only known in the Southern Hemisphere from a microfossil spicule illustrated from the Oamaru Diatomite (Late Eocene) (Hinde & Holmes 1892; Wiedenmayer 1994), identified at the time as a species of *Plocamia* (Order Poecilosclerida Topsent, Family Raspailiidae Nardo). The genus *Janulum* was established by de Laubenfels (1936) for *Isodictya spinispiculum* Carter, 1876, first described from Cape Vincent, southern Portugal, but now known from the Azores (Topsent, 1904) and off the west and north coast of Ireland, the Western Mediterranean Sea (Vacelet 1969; Boury-Esnault *et al.* 1994; Pansini & Longo 2008; Calcinaï *et al.* 2013), the North Atlantic including Denmark Strait and Iceland (Lundbeck, 1902), and the Arctic Ocean including the Barents Sea, northern Norway and Spitzbergen (Hentschel, 1929).

The systematic position and phylogenetic affinity of *Janulum* is currently under debate and ongoing investigation. On the basis of spicule and skeletal characteristics the genus was considered, albeit questionably, to be reminiscent of plocamiform genera such as *Lithoplocamia* Dendy (Family Raspailiidae) by Hooper (2002), but on the basis of molecular data (Redmond *et al.* 2013), the genus is strongly supported within Order Haplosclerida (in part Haploscleromorpha Cárdenas, Pérez & Boury-Esnault, 2012 in Redmond *et al.* 2013).

The second species attributed to *Janulum*, *Reniera filholi* Topsent, 1890, has a fragile skeleton in the form of an isodictyal reticulation of curved acanthose strongyles; it was suggested by de Laubenfels (1936) that *R. filholi* might also be referred to *Janulum*, a move that was completed by Redmond *et al.* (2013).