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## New species of sponges (Porifera, Demospongiae) from the Aleutian Islands and Gulf of Alaska

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### Abstract

Ten new species of demosponges, assigned to the orders Poecilosclerida, Axinellida and Dictyoceratida, discovered in the Gulf of Alaska and along the Aleutian Island Archipelago are described and compared to relevant congeners. Poecilosclerida include *Cornulum globosum* n. sp., *Megaciella lobata* n. sp., *M. triangulata* n. sp., *Artemisina clavata* n. sp., *A. flabellata* n. sp., *Coelosphaera (Histodermion) kigushimkada* n. sp., *Stelodoryx mucosa* n. sp. and *S. siphofuscus* n. sp. Axinellida is represented by *Raspailia (Hymeraphiopsis) fruticosa* n. sp. and Dictyoceratida is represented by *Dysidea kenkriegeri* n. sp. The genus *Cornulum* is modified to allow for smooth tyloles. We report several noteworthy biogeographical observations. We describe only the third species within the subgenus *Histodermion* and the first from the Indo-Pacific Region. Additionally, the subgenus *Hymeraphiopsis* was previously represented by only a single species from Antarctica. We also report the first record of a dictyoceratid species from Alaska. The new collections further highlight the richness of the sponge fauna from the region, particularly for the Poecilosclerida.

**Key words:** taxonomy, new species, Aleutian Islands, Gulf of Alaska, Alaska, Porifera, Poecilosclerida, Axinellida, Dictyoceratida

### Introduction

Early expeditions to the Aleutian Island Archipelago region of the North Pacific Ocean revealed a rich fauna of corals (Nutting 1912) however the sponge biota were largely ignored at that time. Early studies provided some information on the sponge diversity from neighbouring regions (Schulze 1899; Lambe 1900; Okada 1932; de Laubenfels 1953; Koltun 1958, 1959) but only during dedicated collections with submersibles in 2002–2004 was the true richness of the region's deep-water sponge fauna revealed (Stone 2006, Stone *et al.* 2011, Stone 2014). From collections made during that brief period 8 new species and one new genus of glass sponges (Porifera: Hexactinellida) were described (Reiswig and Stone 2013). Coincidentally 21 new species of demosponges (Porifera: Demospongiae) were described from those same collections (Lehnert *et al.* 2005a, Lehnert *et al.* 2005b, Lehnert *et al.* 2005c, Lehnert *et al.* 2006a, Lehnert *et al.* 2006b, Lehnert *et al.* 2006c, Lehnert & Stone 2011, and Lehnert *et al.* 2012) along with 53 range extensions for the region's sponge fauna (Stone *et al.* 2011).

The submersible collections highlighted the richness of the region's sponge fauna—about 24% of the sponges collected were species new to science (Lehnert *et al.* 2006c). Submersible operations were discontinued in the Aleutian Islands in 2004 but our goal was to continue to inventory the extraordinarily rich sponge fauna there. Accordingly, in 2012, we implemented a program to collect specimens retained as bycatch during biennial fish stock assessment surveys conducted with research bottom trawls. From these recent collections we have already reported five new species of Haplosclerida (Lehnert & Stone 2013, 2014b), four new species of Tetractinellida (Lehnert *et al.* 2013, Lehnert & Stone 2014a), and one new species of Poecilosclerida (Lehnert & Stone 2014b). We now report on eight additional new species of Poecilosclerida, the most species-rich order in the region and within the entire phylum Porifera, one new species of Axinellida and a new species from the order Dictyoceratida which had previously not been recorded from the region.