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New species of *Haliclona* (Demospongiae: Haplosclerida: Chalinidae) from Western Australia

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Abstract

Two new sponge species, *Haliclona durdong* sp. nov. and *Haliclona djeedara* sp. nov. from the south west of Western Australia are described. Morphologically distinct from each other, both species are assigned to the genus *Haliclona* subgenus *Haliclona*. *Haliclona djeedara* sp. nov. individuals are ficiform to lobate, brown to beige in colour and have numerous apical oscules. *Haliclona durdong* sp. nov. individuals have a massive morphology, green colour, and large funnel-like oscules. The description of these two new species brings the species of *Haliclona* (*Haliclona*) in Australia to 25.

Key words: taxonomy, systematics, sponges, Porifera, Haplosclerida, *Haliclona*, new species

Introduction

Chalinid sponges (order Haplosclerida) are global in their distribution, with potentially hundreds of extant species (de Weerd 2002). While they are found across all depths, they tend to be common in shallower subtidal habitats (de Weerd 2002). They are one of the most difficult groups to study taxonomically, with highly variable and simple morphological characteristics (de Weerd 2000, 2002). The Chalinidae are characterised by having an ectosomal skeleton that if present, is a regularly hexagonal, unispicular, tangential reticulation. They have a delicate reticulated choanosomal skeleton of uni-, pauci- or multispicular primary lines regularly connected by unispicular secondary lines (de Weerd 2002).

Of the four valid genera of chalinid sponges, the genus *Haliclona* consists of sponges of variable morphology and consistency including erect, tube-shaped and branching forms, and both soft and fragile, and firm and elastic consistencies. *Haliclona* was first established by Grant (Grant 1836) for the species *Spongia oculata* Pallas, 1766, reported from England. The genus is speciose with 436 valid species presently recognised worldwide (van Soest *et al.* 2014) of which 44 have been reported from Australia (Hooper 2012).

Haliclona contains six subgenera and the two species described here conform to the largest of these, *Haliclona* (*Haliclona*), on morphological characters. This subgenus is characterised by a very regular, ladder-like reticulation, and an ectosomal skeleton that is unispicular, tangential and isotropic. Spongin can be moderate to abundant (de Weerd 2002). Currently 23 species of this subgenus are recognised in Australia (Hooper, 2012).

The new species described here were compared with known species from the biogeographic areas surrounding their type localities, principally the temperate Australasian realm (Spalding *et al.* 2007), but also with species from the Northwest Australian Shelf, Sahul Shelf, Northeast Australian Shelf, Java transitional and Western Indian Ocean ecoregions (Spalding *et al.* 2007). We examined type descriptions and type material as well as non-type original historical specimens where these had similarities to our specimens. Some of the species names given to Australian specimens by early sponge taxonomists were of European species and may be misidentifications. However, it is important to re-examine these historical specimens to ensure earlier taxonomists had not seen

durdong sp. nov. producing salicylilhalamide A across its known distribution while *Haliclona djeedara* sp. nov. does not. Although salicylilhalamide A concentration was found to vary with temperature, it was always present and thus the chemical profile of *Haliclona durdong* sp. nov. makes a useful additional diagnostic character for this species (Thompson *et al.* 1987, Abdo *et al.* 2007).

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