

***Haliclona (Halichocona) vanderlandi* spec. nov.  
(Porifera: Demospongiae: Haplosclerida) from Indonesia**

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A new sponge species, *Haliclona (Halichocona) vanderlandi* is described from three Indonesian localities: Take Bone Rata, Kapoposang (SW Sulawesi) and Manadotua Island (NE Sulawesi). The species belongs to the family Chalinidae and is assigned to the subgenus *Halichocona* of the genus *Haliclona*, hitherto known as the “*fistulosa*” group as distinguished by de Weerd (1989).

### Introduction

The sponge family Chalinidae (order Haplosclerida) comprises more than 150 species occurring in tropical, temperate and polar seas. This large number of species, combined with an extreme morphological simplicity and inherent scarcity and variability of taxonomic characters, rank these sponges among the most difficult to characterize and identify. Yet they are important members of marine benthic communities and some species appear to produce chemical substances with promising biomedical properties (e.g., de Weerd et al., 1999). Recent attempts to tackle the taxonomy of the Chalinidae are mainly restricted to the Mediterranean (Griessinger, 1971), the Arctic and North-east Atlantic (de Weerd, 1986, 1989), and Caribbean (van Soest, 1980; de Weerd, in prep.). Species reported from other parts of the world still need to be taxonomically revised.

In the present paper we describe a new species from Indonesia. This may be not without risk because of the above mentioned reasons. The number of nominal species of Chalinidae recorded from the Indo-West Pacific area is large (>75), so that, in the absence of revisory studies for the area, species identification and recognition of undescribed species often is a difficult matter. We think that it is nevertheless justified in this particular case to describe a new species because size, habit and colour are characteristic and unusual.

The new species belongs to one of eight monophyletic species groups distinguished by de Weerd (1989), the so-called “*fistulosa*” group (“*Pellina*” of authors), for which the name *Halichocona* de Laubenfels, 1932, is available and which is given the status of subgenus of the genus *Haliclona* Grant, 1835 (see de Weerd et al., 1999). The species is compared with Indo-West Pacific and Caribbean chalinids with a similar habit.

### Materials and methods

Material of the new species was collected by SCUBA diving by R. Roozendaal during the Dutch-Indonesian Snellius II Expedition in eastern Indonesia in September 1984 (cf. van Soest, 1990) and by B. Hoeksema in 1998 for the so-called "SYMBIOSPONGE" programme (see Acknowledgements). The material is preserved in 70% ethylalcohol and housed in the collection of the Zoological Museum Amsterdam (ZMA).

Examination of the specimens included study of morphological characters like growth form, life colour, surface structure, consistency, skeletal architecture, amount of spongin and size and shape of the spicules. To study the skeletal architecture with light microscopy hand-cut sections of the ectosome and cross-sections of the choanosome were made. Spicule measurements, based on at least 25 units, are presented as lower range-*mean* (standard deviation)-upper range of length × width.

**Taxonomic part**  
**Phylum Porifera**  
**Class Demospongiae**  
**Order Haplosclerida Topsent**  
**Family Chalinidae Gray, 1867**

Definition: Haplosclerida with a delicate reticulated choanosomal skeleton of uni-, pauci- or multispicular primary lines, which are regularly connected by uni- or paucispicular secondary lines. Ectosomal skeleton, if present, a unispicular, tangential reticulation.

**Genus *Haliclona* Grant, 1835**

Definition: Chalinidae with unispicular secondary lines.

**Subgenus *Halichoclona* de Laubenfels, 1932**

Definition: Choanosomal skeleton consisting of a subisotropic, somewhat confused reticulation, commonly intersepted by many choanosomal spaces. Ectosomal skeleton of the same structure as the choanosome, usually very loosely overlaying the choanosome, from which it may be separated by extensive subectosomal spaces. Spongin absent, or very scarce at the nodes of the spicules. Megascleres usually acerate or hastate oxeas. Microscleres, if present, microxeas or sigmas. Sponges commonly somewhat crisp and brittle, only slightly compressible.

Type species: *Halichoclona gellindra* de Laubenfels, 1932.

*Haliclona* (*Halichoclona*) *vanderlandi* spec. nov.  
 (figs 1, 2A-C)

Material.— Holotype: ZMA POR. 8555, Snellius II Expedition, Sta. 147/III/02, Taka Karlarang, Take Bone Rata, Indonesia, 4-10 m, 27.ix.1984, coll. R. Roozendaal.

Paratypes.— ZMA POR. 14497, NW Kapoposang Island, Spermonde Archipelago, SW Sulawesi, Indonesia, 26 m, 1.v.1998, coll. B. Hoeksema for "SYMBIOSPONGE", #98/SS/MAY01/BH/050; ZMA

POR. 14532, S Manadotua Island, NE Sulawesi, Indonesia, 12 m, 7.v.1998, coll. B. Hoeksema for "SYMBIOSPONGE", #98/NS/MAY07/BH/086.

Shape and size.— Aligned, laterally fused, thick-walled tubes with corrugated rims, tubes up to 9 in number, united by thick ridges; thickness of tube walls up to 6 mm, diameter up to 4 cm, height up to 15 cm. Oscula inside the tubes, inconspicuous, less than 2 mm. Overall size of the holotype 75 × 20 × 15 cm (fig. 1).

Colour.— Red to dark red (ZMA POR. 8555, 14532 resp.) or white (ZMA POR. 14497; colour possibly due to suboptimal conditions) in life, tan in spirit.

Surface.— Smooth, strongly punctate, in places somewhat verrucose.

Consistency.— Firm, friable.

Skeleton.— Ectosomal skeleton (fig. 2A) a tangential, subisotropic, paucispicular reticulation; easily detachable. Choanosomal skeleton (fig. 2B) an alveolate, subisotropic, paucispicular reticulation with ill-defined uni- and secondary lines.

Spongin.— Not apparent.

Spicules.— Oxeas, blunt-pointed, some of them with slightly telescoped ends (fig. 2C). Dimensions: 174.9-202.4 (11.8)-217.3 × 5.8-7.7 (1.5)-10.1 μm.

Ecology.— On top and side parts of coral boulders; known depth range 4-26 m.

Distribution.— Indonesia.

Etymology.— Named in honour of Dr J. van der Land in recognition of his leadership of Dutch tropical marine systematic research.

Discussion.— *Haliclona* (*Halichoelona*) *vanderlandi* spec. nov. is well characterized by its large size and growth form of aligned, laterally fused, thick-walled tubes with

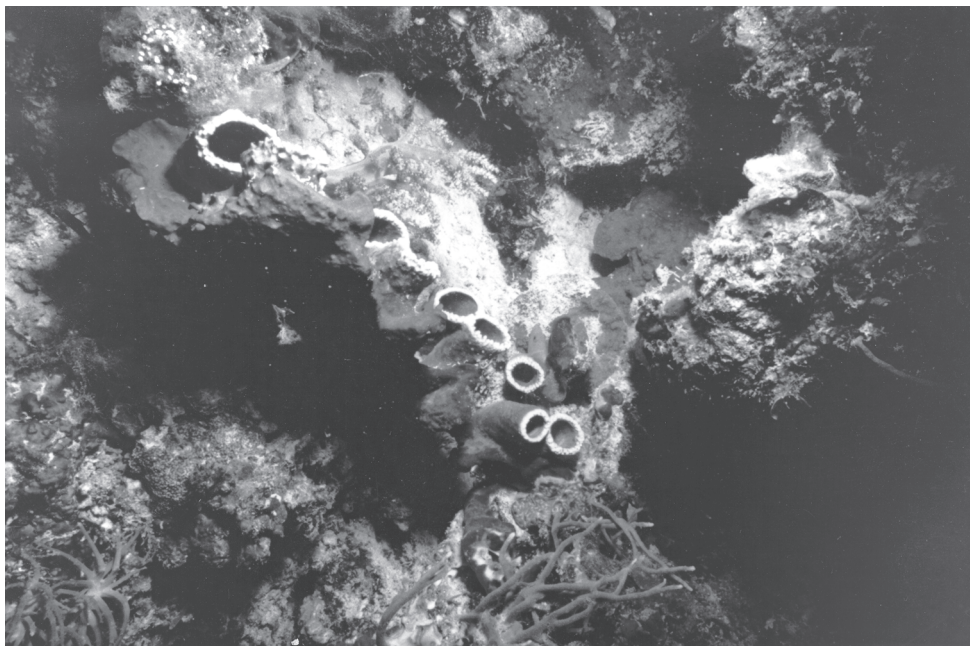


Fig. 1. *Haliclona* (*Halichoelona*) *vanderlandi* spec. nov. In situ photograph of holotype (ZMA POR. 8555). Photo: R. Roozendaal.

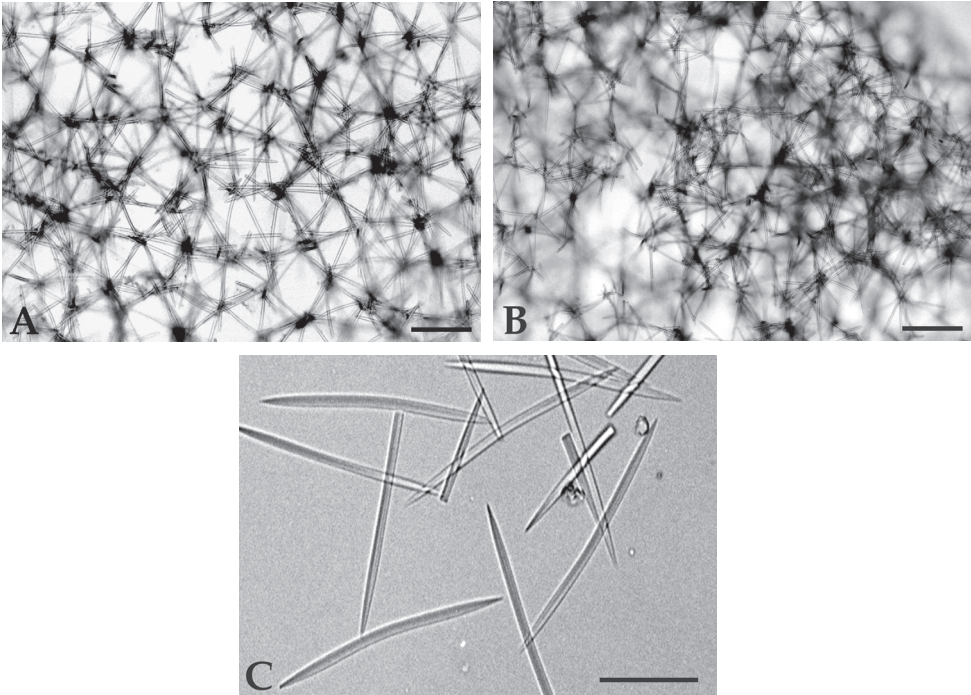


Fig. 2. *Haliclona (Halichocona) vanderlandi* spec. nov. A, tangential view of ectosomal skeleton. B, perpendicular section of choanosome. C, oxeas (scale bars: A, B = 200  $\mu$ m, C = 75  $\mu$ m).

corrugated rims and firm consistency. A tubular shape is rare in the subgenus *Halichocona*, where a massive or cushion shape is more common. The Caribbean species *Haliclona (Halichocona) magnifica* de Weerd et al. (1991) is also tube-shaped, but the tubes arise by themselves from a common base; it is furthermore a mangrove dwelling species, typically occurring under overhanging peat banks and among sea grass. Other differences are the colour, which is blueish pink to dull pink and drab in *H. (H.) magnifica*, and the oxeas which are thinner, fusiform and somewhat flexuous, though similar in length (approx. 195-205  $\times$  5-6  $\mu$ m).

Other Indo-West Pacific Chalinidae with a tubular shape are *Haliclona scyphanooides* sensu Ridley, 1884, and Lindgren, 1898 (as *Reniera*), *Haliclona implexa* sensu Baer, 1906 (as *Reniera*), *Haliclona implexa* var. *baeri* (Wilson, 1925; as *Reniera*) and *Haliclona fascigera* (Hentschel, 1912; as *Siphonochalina*).

Whether *Haliclona scyphanooides* sensu Ridley (Australia, Torres Strait) and *H. scyphanooides* sensu Lindgren (South China Sea) belong to the same species needs to be confirmed by study of the original material. The main difference is the size of the oxeas (210/11  $\mu$ m in Ridley's material; 130/6  $\mu$ m in Lindgren's material). They are quite certainly not conspecific with *Spongia scyphanooides* Lamarck, 1814 (cf. Topsent, 1932), because this species was described from Canada. Both Ridley's and Lindgren's sponges differ from *H. (H.) vanderlandi* spec. nov. by size and consistency: they consist of much smaller tubes (Ridley: 45 mm high; Lindgren: 7 mm diameter) and are soft and compressible.



*Haliclona implexa* sensu Baer consists of short (3-5 cm) fingershaped tubes, with a unispicular skeleton and oxeas of 129-140/7  $\mu\text{m}$ , and probably belongs to another subgenus along with *H. implexa* (Schmidt, 1868), which is a North Atlantic species.

*Haliclona implexa* var. *baeri* Wilson resembles *H. (H.) vanderlandi* spec. nov. by the lateral fusion of the tubes, but it has a unispicular skeleton and smaller oxeas (132/6  $\mu\text{m}$ ), and it is soft and compressible. It probably also belongs to another subgenus.

*Haliclona fascigera* Hentschel differs from *H. (H.) vanderlandi* spec. nov. by its much smaller oxeas (56-72  $\mu\text{m}$ ) and a unispicular skeleton that is reinforced by tracts of spicules and spongin. It is a common Indonesian reef species (Van Soest, 1989).

Indo-Pacific Chalinidae with a firmly friable consistency, as in *H. (H.) vanderlandi* spec. nov., are *Haliclona madrepora* (Dendy, 1889; as *Reniera*), *Haliclona integra* (Topsent, 1897; as *Pellina*), and *Haliclona tulearensis* Vacelet et al., 1976.

*Haliclona madrepora* is bushily ramose and stalked. This distinguishes the species immediately from *H. (H.) vanderlandi* spec. nov.

*Haliclona integra* differs from *H. vanderlandi* spec. nov. by its habit and skeletal architecture. It consists of branches (not tubes), and it has a unispicular ectosome and an anisotropic choanosomal skeleton of paucispicular primary and unispicular secondary lines, and rather abundant spongin.

*Haliclona tulearensis* is massive lobate with an unispicular skeleton. The oxeas are shorter than in *H. (H.) vanderlandi* spec. nov., viz. 155-175  $\mu\text{m}$ ; the thickness is the same (7.5-10  $\mu\text{m}$  in *H. tulearensis*). All these species probably belong to other subgenera.

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