

## Two Species of Chalinidae (Demospongiae: Haplosclerida) from Korea

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### ABSTRACT

Two species of the family Chalinidae, *Haliclona (Gellius) tubulensis* n. sp. and *Haliclona (Gellius) marismedi* were collected from Hongdo Island and Gageodo Island, Korea during 2004-2007. *H. (G.) tubulensis* n. sp. is closely related to *H. (G.) coreana* in type of spicules and growth form. But it is different in size of toxas and oscules. Toxa of *H. (G.) tubulensis* n. sp. is one type and its oscules are tuberculated. The toxa of *H. (G.) coreana* is two types and lacks projections. The overall shape and spiculation of *H. (G.) marismedi* are nearly identical with specimens described by Pulitzer-Finali (1977).

**Key words:** *Haliclona (Gellius)*, Chalinidae, Korea

### INTRODUCTION

The genus *Haliclona* Grant, 1836 includes 18 synonyms: *Haliclona*, *Chalina*, *Reniera*, *Diplodemia*, *Gellius*, *Orina*, *Asychis*, *Adocia*, *Philotia*, *Veluspa*, *Euchalinopsis*, *Rhaphisia*, *Halichoelona*, *Toxadocia*, *Neoadocia*, *Reniclona*, *Kallypildion* and *Rhizoniera* belongs in the family Chalinidae together with *Chalinula*, *Cladocroce* and *Dendroxea* (Hooper and Van Soest, 2002). The genus *Haliclona* contains the subgenera *Gellius*, *Halichoelona*, *Haliclona*, *Reniera*, *Rhizoniera* and *Soestella*. The subgenus *Gellius* is characterized by a choanosomal skeleton consisting of a rather confused, subhalichondroid reticulation of pauci- to multispicular primary line, irregularly connected by unispicular secondary lines. Ectosomal skeleton, if present, either a regular, tangential, unispicular, isotropic reticulation, or consisting of irregularly strewn, tangentially orientated spicules (Hooper and Van Soest, 2002). Six species of *Haliclona (Gellius)* have been reported from Korean waters (Sim, 1981; Rho and Yang, 1983; Sim and Bae, 1987; Sim and Kim, 1988; Sim and Byeon, 1989; Sim and Kim, 2004).

The present study on marine sponges was based on the specimens collected by SCUBA from Hongdo Island and Gageodo Island, Korea in 2004-2007. All procedures were followed the methods of Kim and Sim (2005) and Rützler (1978). The materials examined in this study were deposited in the Natural History Museum, Hannam University

(HUNHM) Daejeon, Korea and Department of Biological Science, Hannam University, Daejeon, Korea.

### SYSTEMATIC ACCOUNTS

Phylum Porifera Grant, 1836

Class Demospongia Sollas, 1885

Order Haplosclerida Topsent, 1928

Family Chalinidae Gray, 1867

<sup>1</sup>\**Haliclona (Gellius) tubulensis* n. sp. (Fig. 1)

*Material examined.* Holotype (Por. 85), Hongdo (Jebibawi), Heuksan-myeon, Sinan-gun, Jeollanam-do, 22 July 2007 (H.S. Kim and C.J. Sim), SCUBA 20 m in depth, deposited in HUNHM, Daejeon, Korea.

*Description.* This new species, jar shape, size up to 15 × 12 cm, 8.5 cm thick. Texture very soft and fragile. Color ivory in life, gradually changes to white in alcohol. Surface tuberculated and covered with thin dermal membrane. 3-4 oscules scattered and 0.5-1.5 mm in diameter. Ectosomal skeleton pauci-multispicular primary lines, irregularly connected by unispicular secondary lines. Choanosomal skeleton, rather dense and consisting of rather confused, irregular reticulation with many spicules in confusion. Spicules, megascleres with two types of oxea. Microscleres toxa and sigma.

*Spicules.*

Megascleres

Thick oxeas ..... 395-480 × 15-20 μm

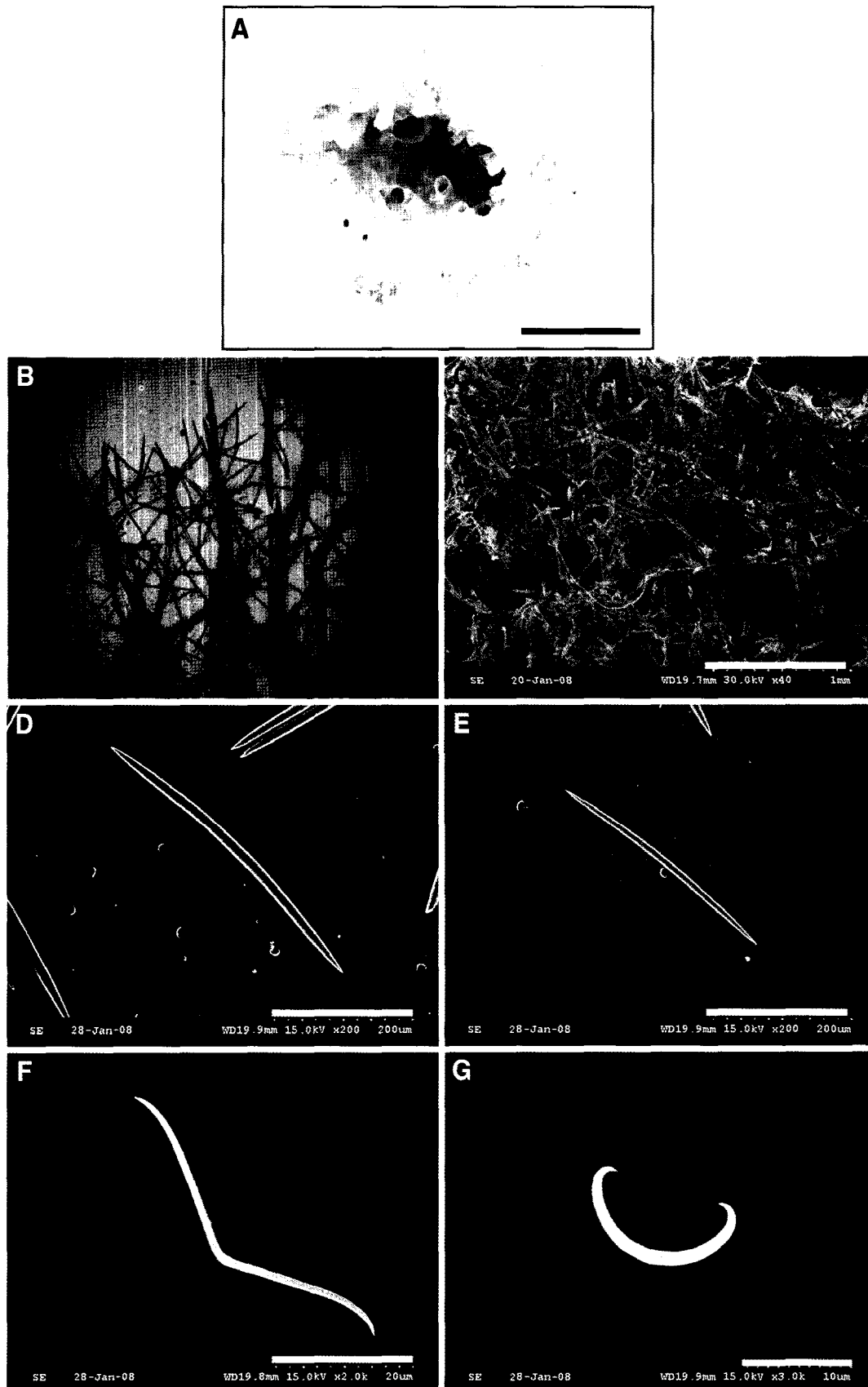
Thin oxeas ..... 320-380 × 6-10 μm

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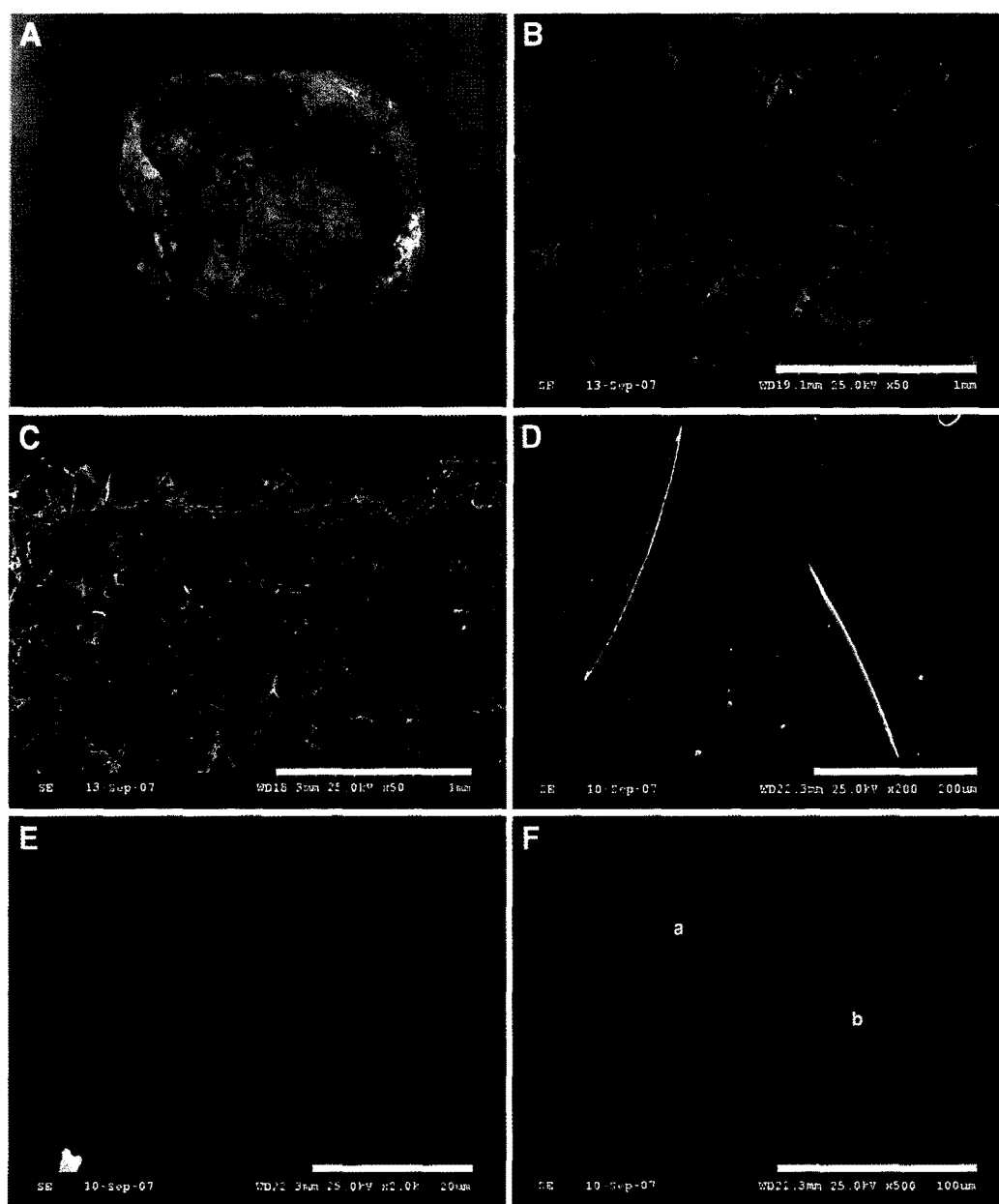
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**Fig. 1.** *Haliclona (Gellius) tubulensis* n. sp. A, entire animal; B, ectosomal skeleton; C, choanosomal skeleton; D, thick oxea; E, thin oxea; F, toxa; G, sigma. Scale bars=4 cm (A), 1 mm (B, C), 200 μm (D, E), 20 μm (F), 10 μm (G).

**Table 1.** The comparison of characters between *H. (G.) coreana* and *H. (G.) tubulensis* n. sp.

Species		<i>H. (G.) coreana</i>	<i>H. (G.) tubulensis</i> n. sp.
Characters			
Oscule		Lacks projections	Tuberculated
Ectosomal skeleton		Irregular and rather confused	Pauci-multispicular primary lines, irregularly conneted by unispicular secondary lines
Choanosomal skeleton		Rather dense and irregular reticulation	Rather dense and irregular reticulation
Spicules ( $\mu\text{m}$ )	Thick oxeas	420-450 $\times$ 15-18	395-480 $\times$ 15-20
	Thin oxeas	240-370 $\times$ 3-8	320-380 $\times$ 6-10
	Large toxas	20-40	30-50
	Small toxas	8-15	-
	Sigmas	15-20	10-17.5

**Fig. 2.** *Haliclona (Gellius) marismedi*. A, entire animal; B, ectosomal skeleton; C, choanosomal skeleton; D, spicules (oxea); E, toxa; F, sigma (a, small sigma; b, large sigma). Scale bars=1 cm (A), 1 mm (B, C), 200  $\mu\text{m}$  (D), 20  $\mu\text{m}$  (E), 100  $\mu\text{m}$  (F).

**Table 2.** Comparison in characters of *Haliclona (Gellius) marismedi*

Characters	Specimens	Pulitzer-Finali's specimens	Korean specimens
	Shape	Encrusting	Encrusting
Color		Ivory	Ivory
Spicules (µm)	Oxeas	134-348 × 1.5-11.4	220-320 × 5-10
	Large toxas	40-73	47-80
	Small toxas	10-13.4	25-30
	Large sigmas	20-27	42-59
	Small sigmas	12-13.5	11-13

**Microscleres**

- Toxas ..... 30-50 µm
- Sigmas ..... 10-17.5 µm

*Etymology.* This species is named after the shape.

*Remark.* *Haliclona (Gellius) tubulensis* n. sp. is closely related to *H. (G.) coreana* Sim, 2004 in spiculation and growth form. However, it is different in size of toxa and oscules. Toxa of *H. (G.) tubulensis* n. sp. is one type and has tyberculated oscules. But toxa of *H. (G.) coreana* is two types and lacks projections (Table 1).

<sup>1</sup>*\*Haliclona (Gellius) marismedi Pulitzer-Finali, 1977 (Fig. 2)*

*Haliclona (Gellius) marismedi:* Pulitzer-Finali, 1977, p. 81

*Material examined.* Kukhuldo, Gageodo Island, 20 July 2007 (H.S. Kim), SCUBA 20 m in depth, deposited in HUNHM, Daejeon, Korea.

*Description.* Thin encrusting on surface rock, sized up to 5.5 × 4 cm wide, 0.1-0.2 cm thick. Oscules 0.1-0.2 cm in diameter, infrequently opened on surface. Color ivory in life, gradually changes to dark ivory in alcohol. Texture tough and firm but fragile. Surface smooth. Ectosomal skeleton unispicular and tangentially orientated spicules. Chaonosomal skeleton, subhalichondroid reticulation, isodictyal reticulation. Spicules megascleres, oxeas. Microscleres sigma and toxa of two sizes.

**Megascleres**

- Oxeas ..... 220-320 × 5-10 µm

**Microscleres**

- Large sigmas ..... 42-59 µm
- Small sigmas ..... 11-13 µm
- Large toxas ..... 47-80 µm
- Small toxas ..... 25-30 µm

*Remarks.* The shape of the entire animal and the spicule are

nearly identical with specimens described by Pulitzer-Finali, 1977 (Table 2).

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