

A New Species of the Genus *Hymeniacion* (Demospongiae: Halichondrida: Halichondriidae) from Korea

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Key Words:

New species
Hymeniacion
Halichondriidae
Sponge
Korea

A new sponge species of the genus *Hymeniacion* (family Halichondriidae) from Munsum, Jeju Island, Korea is described. This species is similar to *H. sinapium* in spicule size, but the color, oscules, external surface and arrangement of the spicules are considerably different. This species is bright yellow in live, and retains multiple oscules and a plumose bundle of styles in the subectosomal region.

Hymeniacion, which retains encrusting or massively lobate shape and exclusively small styles for megascleres, differs from the other genera of Halichondriidae in having styles instead of oxea. The definition of the family Halichondriidae was amended to include all demospongiae having a choanosomal skeleton consisting of high density spicules occurring in vague, ill-defined, directionless tracts or in a random array (Diaz et al., 1993). Hooper and Soest (2002) synonymized *Stylotella* (Lendenfeld, 1888), *Stylinos* (Topsent, 1891), *Amorphilla* (Thiele, 1898), *Stylohalina* (Kirk, 1909), *Thieleia* (Burton 1932a), *Uritaia* (Burton, 1932b), *Rhaphoxiella* (Burton, 1934) and *Rhaphidostyla* (Burton, 1935) with *Hymeniacion*. Only one species of *Hymeniacion* has been reported from Korean waters (Kim et al., 1968; Sim, 1982; Sim and Byeon, 1989; Sim et al., 1992). This species is commonly encrusted on the surface of rocks in intertidal zone.

We examined this new species on seasonal variation between June 1996 to Feb. 2003 at intertidal zone of Munsum (Seogwipo), Jeju Island, Korea *in situ*. Identification was made mainly on the basis of the external feature, the size of spicules, and the structure of skeleton. To examine the skeletal structure, thin free-hand section was performed with a surgical blade after the specimen was hardened in alcohol. The external surface, skeletal structure and spicules were examined with a light microscope (Carl Zeiss, Axioscope II) and SEM (HITACHI S-3000N) at Hannam University. SEM analysis of spicules followed the procedure of Rützler (1978). The holotype specimen is deposited in the Natural History

Museum, Hannam University (HUNHM), and paratype and other specimens are in the Department of Biology, Hannam University, Daejeon, Korea.

Results

Phylum Porifera Grant
Class Demospongiae Sollas
Order Halichondrida Gray
Family Halichondriidae Gray

Hymeniacion flavia n. sp.
(Figs. 1A-D, 2A-D)

Type specimens: Holotype fragment (Por. 43). Munsum, Seogwipo (Jeju Island), 4 Feb. 2003, Intertidal zone, C. J. Sim. One Paratype. Por. 43-1, Munsum, collected with holotype. Other Materials, Munsum, 6 June 2001, 24 Oct. 2002, intertidal zone, C. J. Sim; Chujado, 23 July 2002, intertidal zone, C. J. Sim; Gudo (Geojedo Island), 2 July 2001, intertidal zone, C. J. Sim.

Description

Holotype. Thickly encrusting, up to 4 cm thick, usually 1.4-1.5 cm. Surface optically smooth, translucent ectosomal membrane with hispid owing to the projecting bundle of spicules from subectosomal. Texture compressible. Oscules conspicuous, 1-1.5 mm, sometimes multiple (sieve-plate). Color bright yellow alive. Skeleton, ectosomal skeleton, detachable paratangential crust with plumose bundle of styles from subectosomal skeleton. Choanosomal skeleton with few tracts and many loose confusedly arranged megascleres.
Spicules. Styles 200-450×5-10 μm (average 300×7 μm)

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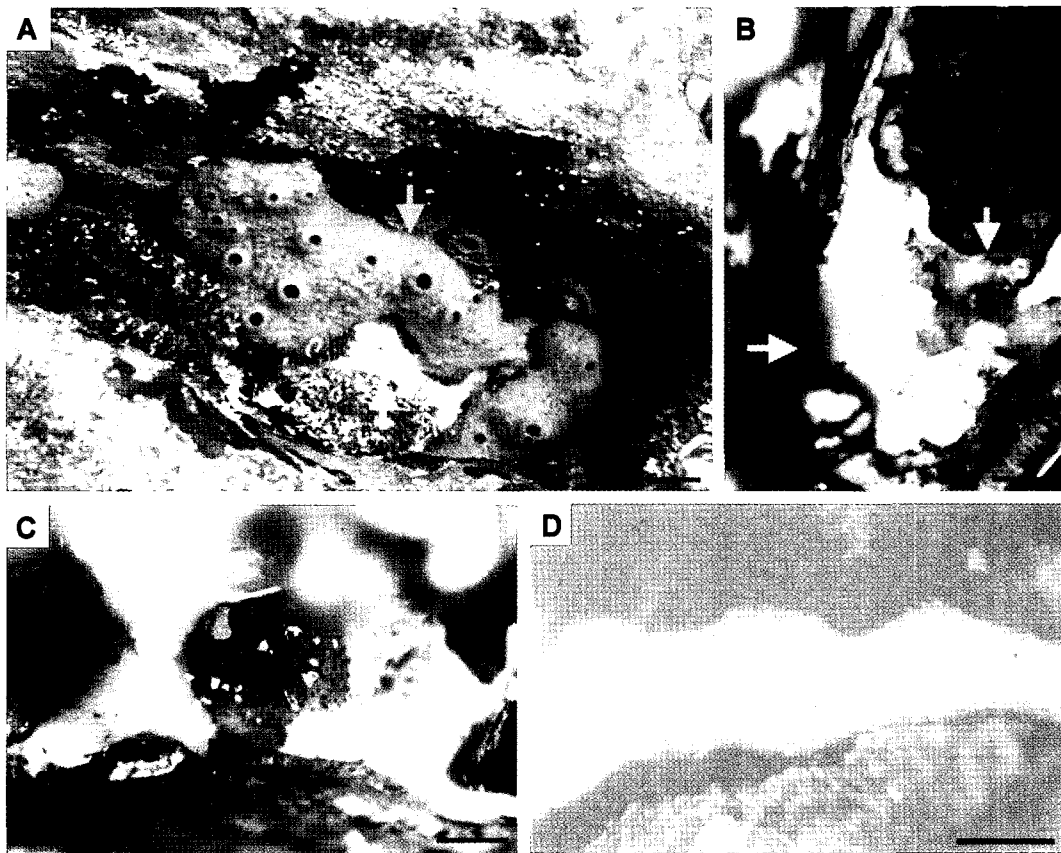


Fig. 1. *Hymeniacidon flavia* n. sp. *in situ*. A, *H. flavia* n. sp. (yellow arrow) and *H. sinapium* (orange arrow). B, *H. flavia* n. sp. (yellow arrow) and *Halichondria panicea* (green arrow). C, *H. flavia* n. sp. and anemone. D, *H. flavia* n. sp. showing the oscules. Scale bars=1 cm.

Etymology

The species name, *flavia* is based on the yellow color from flav (L).

Remarks

This species retains distinctive bright yellow coloration in the field. It is found in the intertidal zone and is sympatric with *Hymeniacidon sinapium* and *Halichondria panicea*. This species is similar to *H. sinapium* in its spicule size, but the color, oscules, external surface and

arrangement of its spicules are considerably different from those of (see Figs. 1A-D, 2A-D). With regard to seasonal variation, the external surface of *H. flavia* n. sp. has a more compact arrangement of ectosomes with more styles in winter (4 Feb. 2003) than in summer (21 June 2002) (Table 1).

Acknowledgement

This work was supported by a grant from the Korea Research Foundation (KRF-2002-070-C00089).

Table 1. Comparison of *Hymeniacidon flavia* n. sp. and *H. sinapium*

Species	Spicule size (µm)	Shape of oscule	Skeletal structure in surface	Skeletal structure in subectosome	Seasonal variation of skeletal arrangement in ectosome	
					Summer	Winter
<i>H. flavia</i> n. sp.	200-450×5-10 (holotype)	multiple (sieve-plate)	tangential	plumose	loose	compact
<i>H. sinapium</i>	125-420×2-10	solitary	paratangential	unordered		

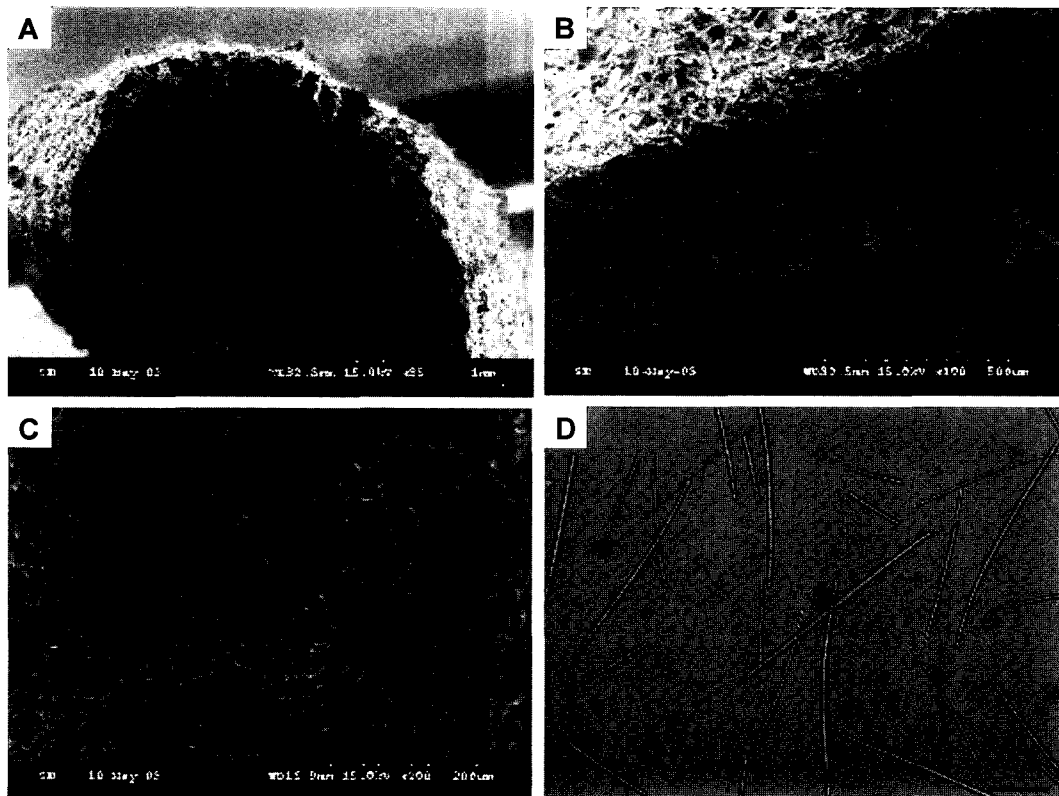


Fig. 2. *Hymeniacidon flavia* n. sp. A-B, transverse section. C, surface (paratangential skeleton). D, styles. Scale bars=100 μm.

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[Received May 24, 2003; accepted July 4, 2003]