

## Two New Records of Marine Sponge in Jeju Island, Korea

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### ABSTRACT

Some marine sponges were collected from intertidal zone of Jeju Island with hands during the period from 2000 to 2002. Among them, two species, *Strongylacidon conulosa* Bergquist and Fromont, 1988 and *Haliclona brøndstedti* Bergquist and Warne, 1980 are newly recorded in Korea.

Key words: Marine sponge, new record, Jeju Island, Korea

### INTRODUCTION

The genus *Strongylacidon* Lendenfelds, 1897 (Demospongiae, Poecilosclerida, Phoriospongiidae) is poorly known sponges. It has only known in England (Lendenfelds, 1897), Australia (Hentschel, 1911; Burton, 1934), Netherlands (Soest, 1984) and New Zealand (Bergquist and Fromont, 1988). The characteristics of the genus *Strongylacidon* are as follows. The shape is encrusting or massive. Ectosomal skeleton with strongyles is protruding brush-shaped from the ascending choanosomal fibres. Choanosomal skeleton is plumose in encrusting specimens and it is becoming plumoreticulate in more massive specimen. Fibres are cored by strongyles and some detritus. Microscleres are unguiferous-arcuate isochelae and sigmas (Hooper, 1994). The genus *Strongylacidon* and the family Phoriospongiidae including the genus are new to Korean fauna.

The genus *Haliclona* Grant, 1835 (Demospongiae, Haplosclerida, Chalinidae) includes very diverse sponges. More than 120 species have been described from around the world oceans (Bergquist and Warne, 1980; Hoshino, 1981; Soest and Weerdt, 1986). Twelve species have been reported in Korea (Rho and Lee, 1976; Rho and Yang, 1983; Sim and Bae, 1987; Sim and

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Byeon, 1989; Sim, Kim and Kim, 1992). The genus *Haliclona* does not have ectosomal skeleton and microscleres. Their choanosomal skeleton arranged in unispicular isodictyal (Hooper, 1994).

The identification was made on the basis of the external feature, the shape and structure of skeleton and size of spicules. For the skeleton's structure, the thin free-hand section was made with specimen hardened in alcohol using a surgical blade. Spicules were prepared by dissolving a piece of sponge in sodium hypochlorite and it were examined with SEM (AKASHI ISI-SS40) at Hannam University. SEM analysis of spicules followed the procedure of Rützler (1978).

## RESULT

Phylum Porifera Grant, 1836 해면동물문

Class Demospongiae Sollas, 1885 보통해면강

Order Poecilosclerida Topsent, 1928 다골해면목

Family Phoriospongiidae Lendenfeld, 1888 포리오해면과 (신칭)

### 1. *Strongylacidon conulosa* Bergquist and Fromont, 1988 원추봉상해면 (신칭) (Fig. 1A-H)

*Strongylacidon conulosa* Bergquist and Fromont, 1988, p. 38, pl. 12F, 13A-C.

**Material examined.** Munsom (Jeju Isl.), Intertidal Zone, 6 Jun. 2001; 29 Jan. 2002.

**Description.** Encrusting sponge, size up to 35 × 15 mm and 5 mm thick. Surface smooth and soft. Oscules 0.3-1 mm in diameter, rarely scattered on surface and pores invisible. Texture tender and flexible. Closely black in life, while, khaki in preservation.

Ectosomal skeleton: Strongyle arranged in like brush, and rarely mixed with isochela.

Endosomal skeleton: Megascleres, strongyle, made bundle by spongin fiber.

Spicules: Megascleres, Strongyle ..... 115-210 × 3-6 μm

Microscleres, Isochela ..... 11.5-16 μm

**Remark.** This species is characterized by the small size and the shape of the unguiferate isochelae.

**Distribution.** Korea, New Zealand.

Order Haplosclerida Topsent, 1928 단골해면 목

Family Chalinidae Gray, 1867 고삐해면 과

### 2. *Haliclona brøndstedti* Bergquist and Warne, 1980 브론스테디보라해면 (신칭) (Fig. 2A-E)

*Haliclona brøndstedti* Bergquist and Warne, 1980, p. 15, pl. 1e-f, 2a.

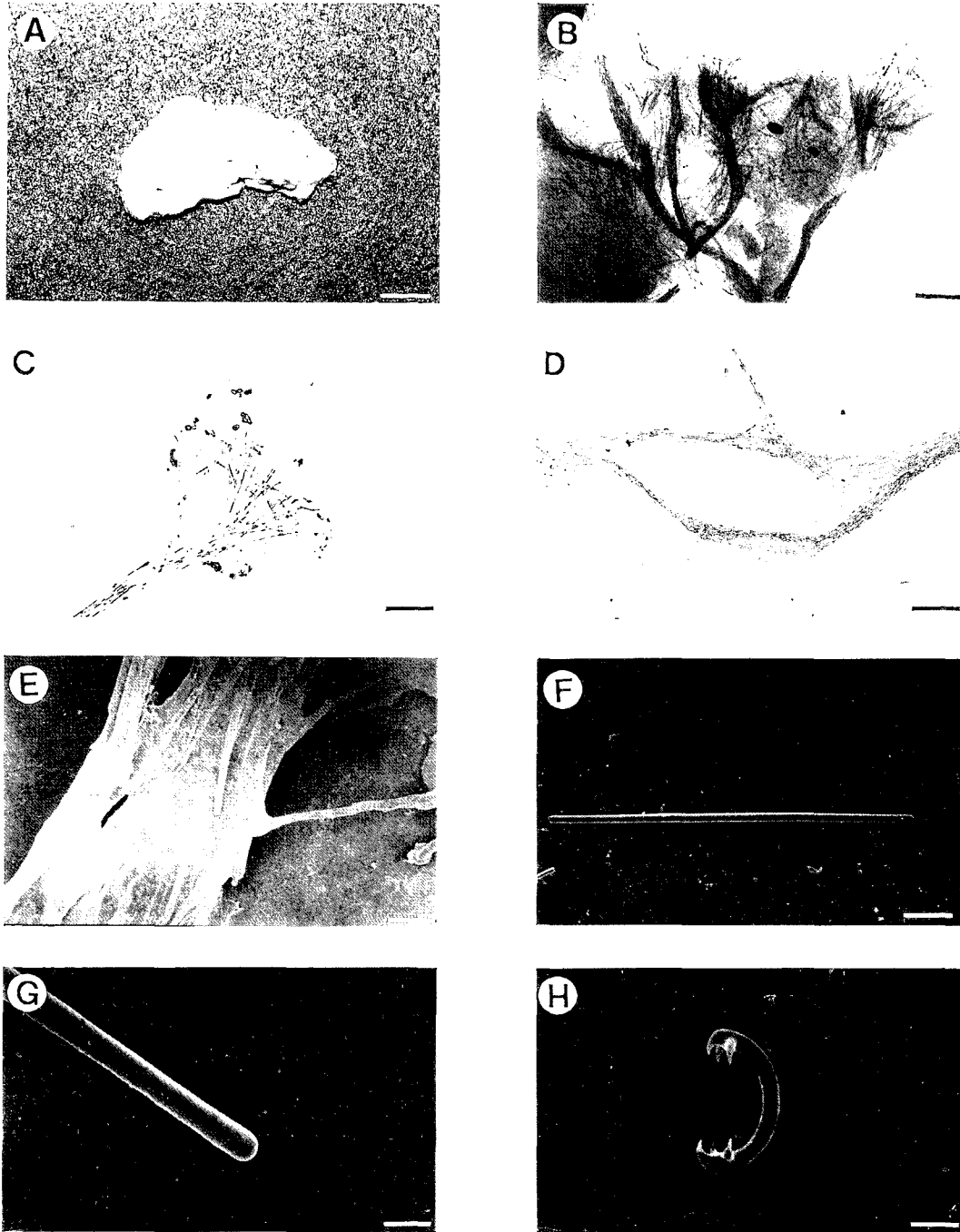
**Material examined.** Munsom (Jeju Isl.), Intertidal Zone, 6 Jun. 2001.

**Description.** Encrusting sponge, 1-2 mm thick, soft and crumbly. Oscules 0.5-1 mm in diameter, scattered on surface. Deep violet in water, but changed to black in air. Skeleton: unispicular rectangular mesh. Ectosomal and endosomal skeletons not divided.

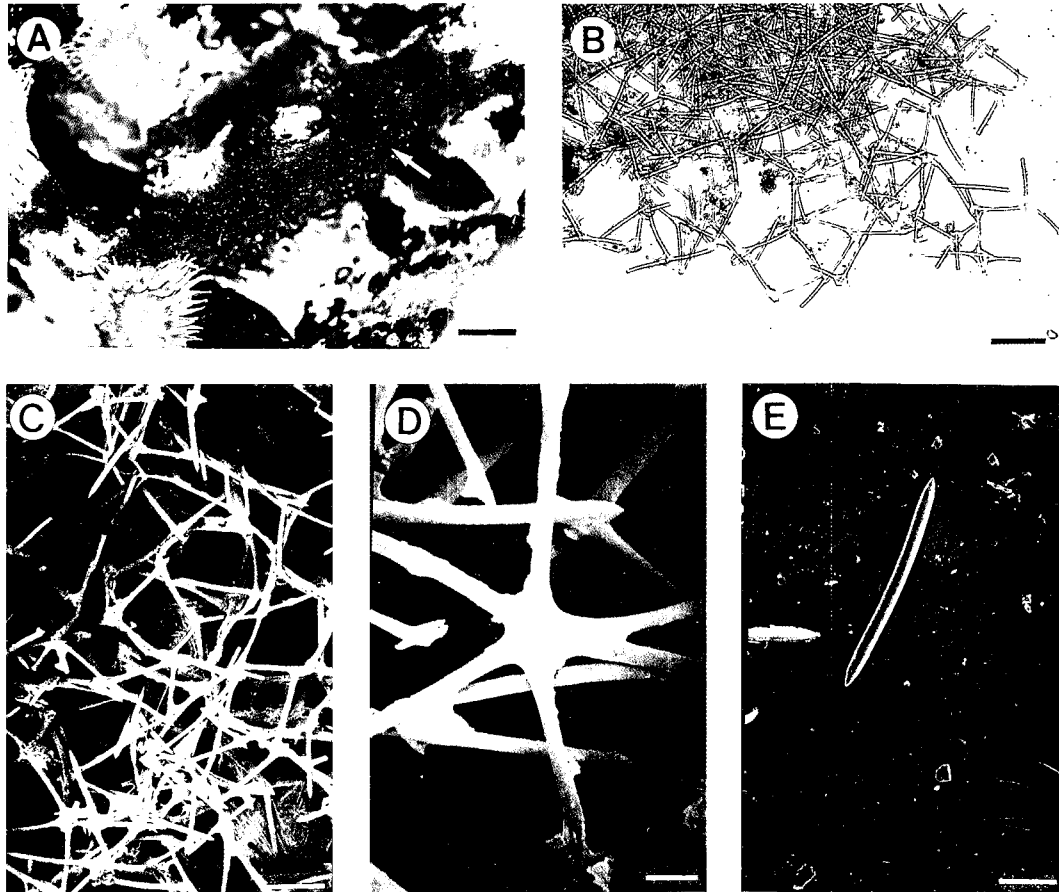
Spicules: Megascleres, Oxea ..... 70-95 × 4-6 μm

**Remark.** Specimens of Bergquist and Warne (1980) have or not microscleres, small toxas (5-15 μm).

**Distribution.** Korea, New Zealand.



**Fig. 1.** *Strongylacidon conulosa*. A, upper view of specimen preserved in alcohol; B, skeletal structure (longitudinal section); C, ectosomal skeletal structure; D, endosomal skeletal structure; E, fibre cored with strongyles (SEM); F, megasclere, strongyle (SEM); G, end of strongyle (SEM); H, microsclere, isochela (SEM). Scale bars : A, 15 mm; B, D, 150  $\mu$ m; C, 100  $\mu$ m; E, 30  $\mu$ m; F, 10  $\mu$ m; H, 3  $\mu$ m.



**Fig. 2.** *Haliclona brøndstedii*. A, whole specimen in situ (arrow); B, skeletal structure of ectosome (longitudinal section); C, skeletal structure of endosome (cross section, SEM); D, single spicules bounded at nodes by spongin (SEM); E, megasclere, oxea (SEM). Scale bars: A, 1 cm; B-C, 100  $\mu$ m; D-E, 10  $\mu$ m.

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## 제주도 해산 해면류의 한국 미기록 2종

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### 요 약

2000년부터 2002년까지 제주도 조간대에서 채집한 해면류를 동정·분류한 결과 원추봉상해면 (*Strongylacidon conulosa* Bergquist and Fromont, 1988)과 브른스테디보라해면 (*Haliclona brøndstedii* Bergquist and Warne, 1980)이 한국 미기록종으로 밝혀졌다.