

## Two New Species of the Halichondriidae (Demospongiae: Halichondrida) from Korea

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**Abstract:** Two new marine species of the family Halichondriidae, *Ciocalypta sasuenis* n. sp. and *Epipolasis maraensis* n. sp., are collected from Chujado Island and Jejudo Island, Korea during 2000-2005. *Ciocalypta sasuenis* n. sp. is closely related to *C. penicillus* (Bowerbank, 1864) in the type of shape and ectosomal skeleton. However, *C. sasuenis* n. sp. is larger than *Ciocalypta penicillus*. *Epipolasis maraensis* n. sp. is similar to *E. suluensis* (Wilson, 1925) in the type of skeleton, but is different in size of spicule and growth form. Its oxeas and raphide are smaller than *E. suluensis*'s. The growth form of this new species is semispherical and massive, but *E. suluensis* is lamellated.

**Key words:** *Ciocalypta*, *Epipolasis*, new species, Halichondrida, Halichondriidae, Korea

The marine sponges of family Halichondriidae Gray, 1867 are distributed worldwide with more than 180 extant species living in all parts of the seas. This family consists of 11 genera: *Axinyssa*, *Amorphinopsis*, *Ciocalapata*, *Ciocalypta*, *Epipolasis*, *Hymeniacidoan*, *Halichondria*, *Laminospongia*, *Spongisorites*, *Topesntia* and *Vosmaeria* (Hooper and Van Soest, 2002). Among them, the genus *Ciocalypta* is characterized by growth form mass with conically tapering erect finger-shaped projection. Its choanosomal skeleton is composed of styles in confused, directionless arrangement, spicule tracts, whereas the projection is supported by multispicular columns of styles (Hooper et al., 1997). This genus is the first record in family Halichondriidae from Korea. The genus *Epipolasis* is characterized by trichodragmata. The choanosomal skeleton has confused mass of single spicules (Hooper and Van Soest, 2002).

Genus *Ciocalypta* contains 15 species and genus *Epipolasis* contains three species worldwide (Hooper and Van Soest,

2002). One species of the genus *Epipolasis* has been reported from Korean waters (Sim et al., 1992) but the genus *Ciocalypta* is reported in the Korean fauna for the first time.

### MATERIALS AND METHODS

The sponges were collected by SCUBA from Chujado Island and Jejudo Island, Korea during 2000-2005. Specimens were fixed in 95% or 99.9% ethanol. They were prepared and examined under both light microscope (Carl Zeiss Axioskop II) and scanning electron microscope (SEM, HITACHI S-3000N) following the procedures described by Rützler (1978). The holotypes have been deposited in the Department of Biological Sciences, Hannam University, Daejeon, Korea.

### SYSTEMATIC ACCOUNTS

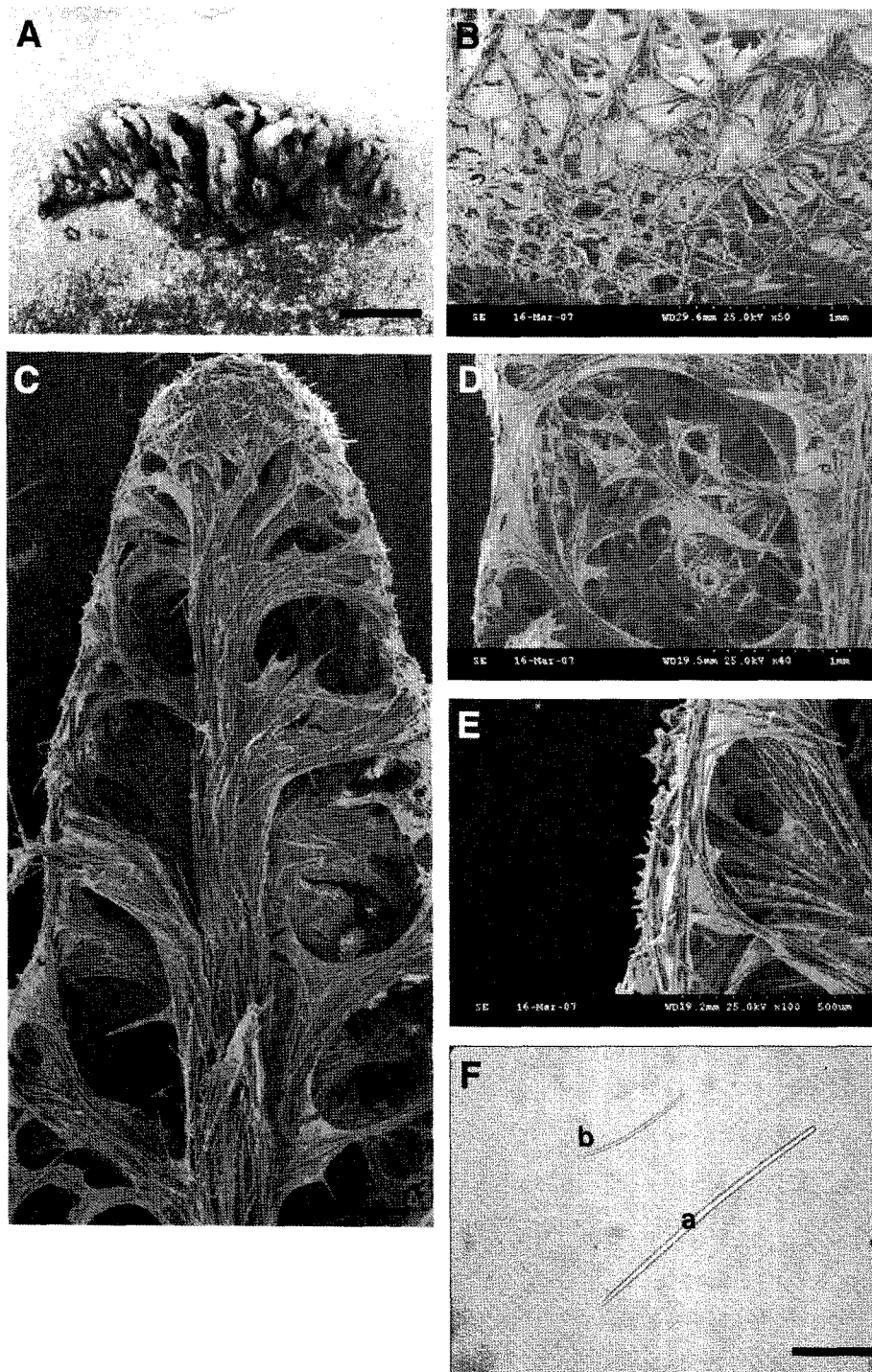
Phylum Porifera Grant, 1836  
Class Demospongiae Sollas, 1885  
Order Halichondrida Gray, 1867  
Family Halichondriidae Gray, 1867

1. *Ciocalypta sasuenis* n. sp.  
(Fig. 1)

**Type specimen:** Holotype (Por. 80), Sasudo, Chujado Island, 24 May 2005, SCUBA 39 m, K. J. Lee and H. J. Kim, deposited in the Department of Biological Sciences, Hannam University, Daejeon, Korea.

**Description:** Encrusting with cornical or digitate projection, 0.2~0.5 cm thick and 3~7 cm high. Sized up to 15 cm wide, 10 cm high and less than 1 cm thick. Oscules opened at the top of some of the projection. Texture firm but flexible to the touch. Surface, smooth with thin membrane and rough.

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**Fig. 1.** *Ciocalypta sasuenesis* n. sp. A, entire specimen. B, surface skeleton. C, choanosomal skeleton. D-E, ectosomal skeleton (tangential). F, style (a. large style, b. small style). Scale bars = 4 cm (A), 1 mm (C), 200  $\mu$ m (F).

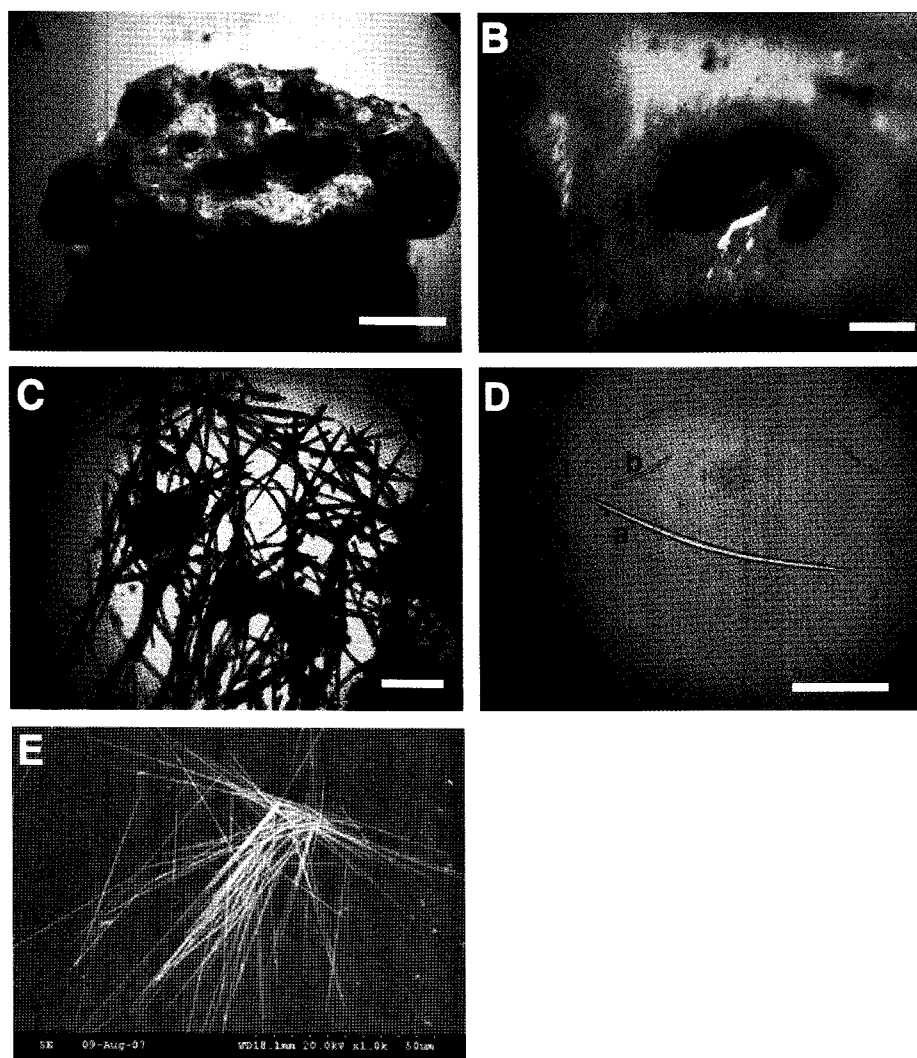
Ectosomal skeleton tangentially reticulated by intercrossing spicule bundles. Subectosomal space present. Choanosomal skeleton irregular and confused reticulation with larger spicules. Central condensation in projection with column with 3~4 thick tract. Spicules two size of style, no microscleres. Colour yellow in life which gradually changes to ivory in ethyl alcohol.

**Etymology:** This species is named after the type locality, Sausudo, Chujado Island, Korea.

**Remark:** *Ciocalypta sasuenesis* n. sp. is closely related to *C. penicillus* Bowerbank, 1864 in type of shape and ectosomal skeleton. However, style of *C. sasuenesis* n. sp. are larger than *C. penicillus* (see the Bergquist, 1970) (Table 1).

**Table 1.** The comparison of characters between *Ciocalypta sasuenesis* n. sp. and *Ciocalypta penicillus* Bowerbank, 1864.

Characters	Species	<i>Ciocalypta penicillus</i> Bowerbank, 1864	<i>Ciocalypta sasuenesis</i> n. sp.
Growth form		Encrusting, conical projections or digits grow upwards	Encrusting, conical projections or digits grow upwards
Ectosomal skeleton		tangential reticulation of intercrossing bundles	tangential reticulation of intercrossing bundles
Spicule ( $\mu\text{m}$ )	Large style	600~630 $\times$ 12~18	610~810 $\times$ 15~20
	Small style	340~390 $\times$ 5~10	250~570 $\times$ 5~10
Color		white cream, yellow	yellow

**Fig. 2.** *Epipolasis maraensis* n. sp. A, entire specimen. B, oscule on the surface. C, choanosomal skeleton. D, spicule (a. large oxea, b, small oxea). E, raphide. Scale bars = 3 cm (A), 5 mm (B), 1 mm (C), 500  $\mu\text{m}$  (D).

## 2. *Epipolasis maraensis* n. sp. (Fig. 2)

**Type specimen:** Holotype (Por. 81), Marado, Jeju Island, 4 Nov. 2000, SCUBA, 20 m depth, K. J. Lee, deposited in the Department of Biological Sciences, Hannam University, Daejeon, Korea.

**Description:** Semispherical and massive, size up to 18 $\times$ 9 cm wide. Oscules, 0.5~1.0 cm in diameter, scattered on surface. Texture hard. Surface smooth with 0.1~0.3 cm thick membrane. Choanosomal skeleton largely irregular mass of single spicules and few vague tract. Spicules megascleres two size of oxea. Microscleres raphide. Colour yellow in life, gradually changed to ivory in ethyl alcohol.

**Table 2.** Comparison of characters between *Epipolasis maraensis* n. sp. and *Epipolasis suluensis*

Species	Characters	<i>Epipolasis suluensis</i>	<i>Epipolasis maraensis</i> n. sp.
	Growth form	lamellate	Semispherical massive
Spicule ( $\mu\text{m}$ )	Large oxea	140~1,350 $\times$ 17~32	900~1,040 $\times$ 15~20
	Small oxea	140~450 $\times$ 7~16	140~330 $\times$ 5~10
	Raphide	100~228	30~50

**Etymology:** This species is named after the type locality, Marado, Jejudo Island, Korea.

**Remark:** *Epipolasis maraensis* n. sp. is similar to *E. suluensis* Wilson, 1925 in type of skeleton. However, it is different in size of spicule and growth form. Their spicules are smaller than *E. suluensis*'s. The growth form of this new species is semispherical massive, but *E. suluensis* is lamellated (see Hooper & Van Soest, 2002) (Table 2).

**ACKNOWLEDGMENTS**

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