한국동물분류학회지 제16권 제2호
The Korean Journal of Systematic Zoology
Vol. 16, No. 2: 141-146 (October 2000)

New Record of Two Marine Sponges (Demospongiae, Poecilosclerida) in Korea

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ABSTRACT

Some marine sponges were collected from Jindo Island, Kuryongpo and Chejudo Island during the period from 1986 to 1999. Among the identified species, two species *Myxichela spinulosa* (Tanita, 1968) and *Clathria* (*Clathria*) *acanthostyli* (Hoshino, 1981) are new to the Korean fauna.

Key words: taxonomy, marine sponge, Korea

INTRODUCTION

The order Poecilosclerida is the largest and most diverse of demospongiae (Bergquist, 1978; Bergquist and Fromont, 1988), and divided into three suborders, Microcionina, Myxillina and Mycalina (Hajdu *et al.*, 1994). The suborder Microcionina was established for four families of Poecilosclerida (Microcionidae, Raspailiidae, Iophonidae and Rhabderemiidae), which has isochelae of palmate origin, diverse forms of toxas, up to five categories of megascleres and lacking sigmas (Hooper, 1996). Bergquist and Fromont (1988) reviewed the family Iophonidae, including 32 nominal genera, although 17 of these are presently considered. Hooper (1996) recognised seven genera and 12 subgenera of the family Microcionidae. Which is large, containing about 540 described species and many other as yet undescribed species known from various collections. Also he described 459 species, including 52 new species in a phylogenetic revision of the family Microcionidae. Of which 148 species (31 new species) were recorded from the Australian fauna. Poecilosclerid sponges were recorded 63 species from Japan (Hoshino, 1981), and 65 species from Korea (Rho and Sim, 1979; Sim, 1981; Sim and Kim, 1988; Sim and Byeon, 1989; Sim *et al.*, 1992; Sim and Kim, 1994; Sim

This study was supported by the grant of Hannam University, 1999-2000.

and Lee, 1998). In this study, they were collected from the Jindo Island, Kuryongpo and Chejudo Island by fishing nets during years 1986 to 1999, and were identified into *Myxichela spinulosa* of Iophonidae and *Clathria* (*Clathria*) *acanthostyli* of Microcionidae. The materials examined in the present study were deposited in the Departments of Biology, Hannam University.

DESCRIPTION

Class Demospongiae Sollas, 1885 보통해면강

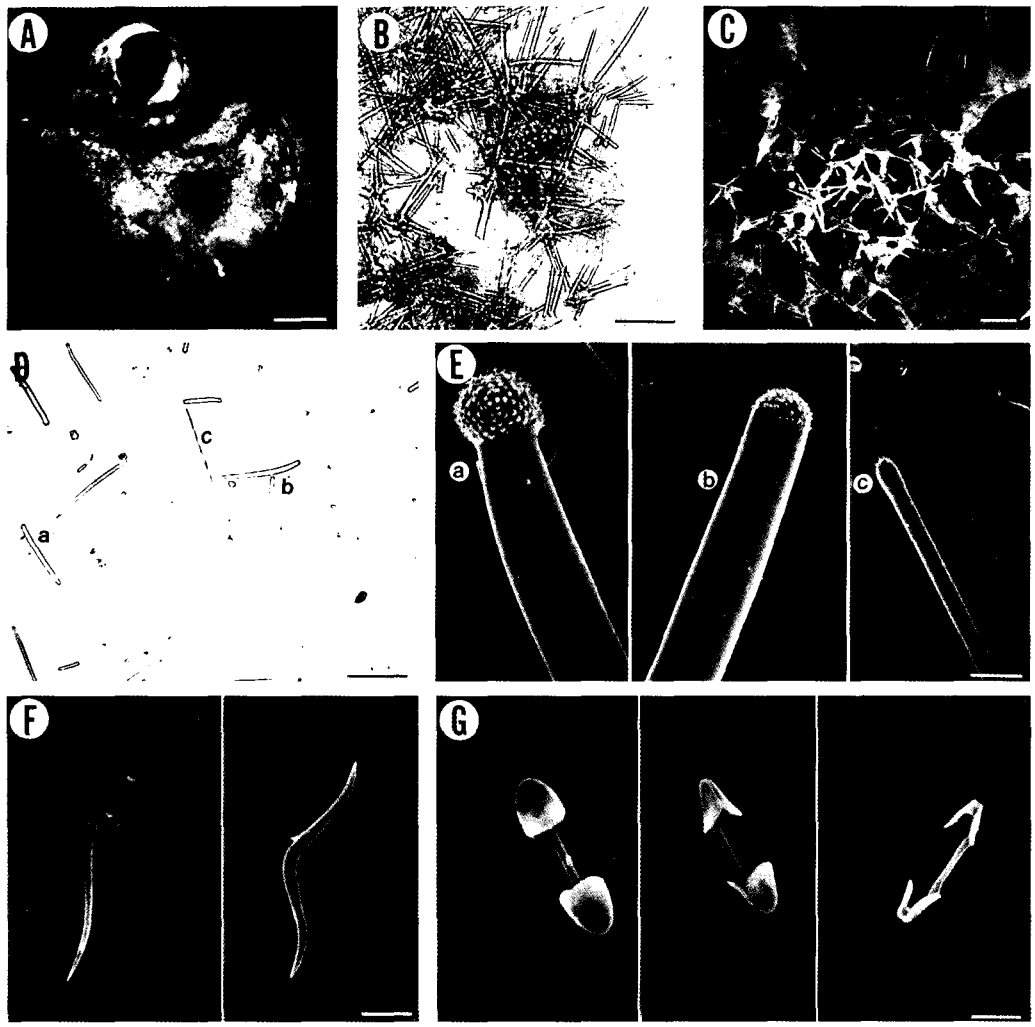

Fig. 1. *Myxichela spinulosa*. A, side view; B, skeletal structure; C, skeletal structure (surface, SEM); D, spicules (a, tylostrongyle, b, thick style, c, slender style); E, megascleres (SEM, a, tylostrongyle, b, thick style, c, slender style); F, toxa (SEM); G, isochelas (SEM, palmate chela and reduced alae of palmate chela). Scale bars = 1 cm (A), 200 μm (B), 100 μm (C), 200 μm (D), 10 μm (E-F), 5 μm (G).

Order Poecilosclerida Topsent, 1928 다골해면목

Suborder Microcionina Hajdu, Soest and Hooper, 1994 유령해면아목

Family Iophonidae Burton, 1929 이오폰해면과

1. *Myxichela spinulosa* (Tanita, 1968) 가시끈적해면 (신칭) **(Fig. 1 A-G)**

Lissodendoryx spinulosa Tanita, 1968, p. 46, pl. 2, fig. 4, text-fig. 6.

Lissodendoryx spinulosa: Hoshino, 1974, p. 10, pl. I, figs. 3-4, 7, pl. II, fig. 14.

Myxichela spinulosa: Hooper, 1996, p. 44.

Material examined. Hoidong (Jindo Island), 25 Jul. 1994; Kuryongpo (Kyongsangbukdo), 14 Sep. 1999.

Description. Sponge thinly encrusting on shell (*Serpulorbis imbricatus*). Oscule or pore invisible. Texture soft. Color redish-brown in life, pale brown in spirits.

Measurements of spicules are as follow.

Megascleres

Thick style ····· 210-470 × 10-15 μm

Slender style ····· 290-380 × 3-5 μm

Tylostrongyle ····· 180-210 × 10-13 μm

Microscleres

Toxa ····· 50-60 × 1-2 μm

Isochela ····· 15-20 μm

Remarks. The Jindo's specimen, described above, shows some differences from Tanita's material in having many palmate isochelas.

Distribution. Korea, Japan.

Family Microcionidae Carter, 1875 유령해면과

2. *Clathria (Clathria) acanthostyli* (Hoshino, 1981) 유극침유령해면 (신칭) **(Fig. 2A-H)**

Thalysias acanthostyli Hoshino, 1981, p. 157, fig. 68, pl. 7, fig. 2.

Clathria (*Clathria*) *acanthostyli*: Hooper, 1996, p. 171.

Material examined. Mosulpo (Chejudo Island), 6 Sep. 1986.

Description. Sponge erect, branching in one plane from single trunk. Size up to 18 cm in high and 10 cm in width and branches about 0.8~1.5 cm in diameter. Oscules up to 1 mm in diameter, scattered on surface. Pore invisible. Texture tough. Color orange in life, pale ivory in spirits.

Measurements of spicules are as follow.

Megascleres

Large acanthostyle ····· 230-345 × 10-15 μm

Slender style ····· 150-280 × 3-4 μm

Small acanthostyle ····· 60-130 × 5-9 μm

Microscleres

Toxa ····· 30-120 × 0.5-1 μm

Isochela ····· 13-20 μm

Remarks. In size acanthostyles and isochelas of this species are larger than those of Hoshino's (1981).

Distribution. Korea, Japan.

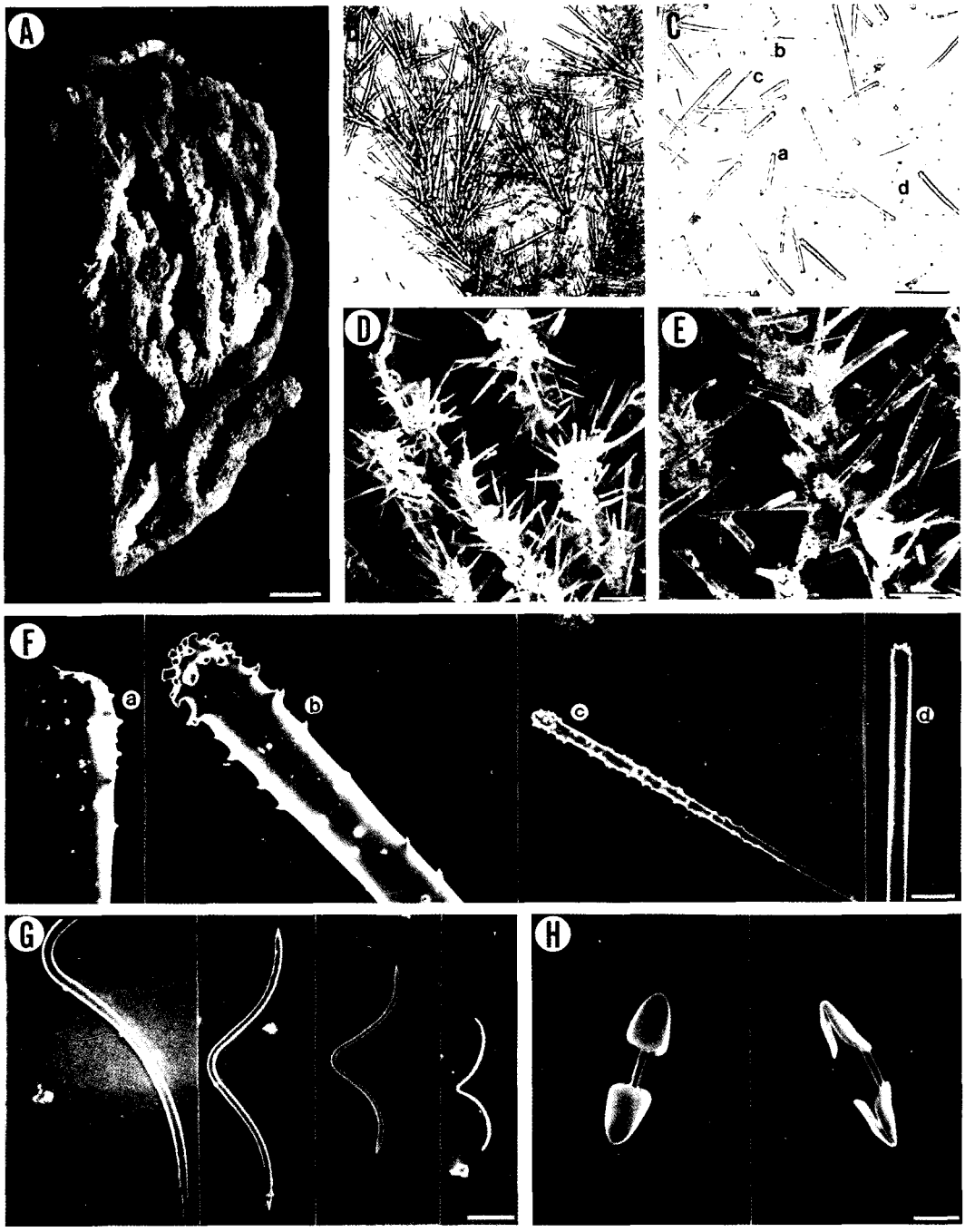

Fig. 2. *Clathria* (*Clathria*) *acanthostyli*. A, side view; B, skletal structure; C, spicules (a, large acanthostyle, b, small acanthostyle, c, slender style, d, toxa); D-E, skeletal structure (SEM): F, spined head of megascleres (SEM, a-b, large acanthostyle, c, small acantho style, d, slender style); G, the various size of toxas (SEM); H, isochelas (SEM). Scale bars = 1 cm (A), 200 μm (B-E), 10 μm (E-G), 5 μm (H).

REFERENCES

Bergquist, P. R., 1978. Sponges. Hutchinson, London, pp. 1-268.

Bergquist, P. R. and P. J. Fromont, 1988. The Marine Fauna of New Zealand: Porifera, Demospongiae. Part 4. Poecilosclerida. N.Z. Oceanogr. Inst. Mem., **96**: 1-197.

Hajdu, E., R. W. M. Soest and J. N. A. Hooper, 1994. Proposal of a Phylogenetic Subordinal Classification of Poecilosclerid Sponges (Demospongiae, Porifera). Balkema, Rotterdam, pp. 123-140.

Hooper, J. N. A., 1996. Revision of Microcionidae (Porifera: Poecilosclerida: Demospongiae), with Description of Australian Species. Mem. Queensl. Mus., **40**: 1-626.

Hoshino, T., 1974. Demospongia of Hiryu-jima (Biro-jima), an Islet in the Ariake Sea. J. Sci. Hiroshima Univ., **4**: 8-15.

Hoshino, T., 1981. Shallow-Water Demosponges of Western Japan I. J. Sci. Hiroshima Univ. Ser. B Div. 1., **29**: 47-205.

Rho, B. J. and C. J. Sim, 1979. A Taxonomic Study on the Korean sponges. 1. Poecilosclerida. J. Kor. Res. Inst. Better Liv., Ewha Womans Univ., **23**: 61-67.

Sim, C. J., 1981. A Systematic Study on the Marine Sponges in Korea. 1. Ceratinomorpha and Tetractinomorpha. Soong Jun Univ., **11**: 83-105.

Sim, C. J. and H. S. Byeon, 1989. A Systematic Study on the Marine Sponges in Korea. 9. Ceractinomorpha. Kor. J. Syst. Zool., **5**(1): 33-57.

Sim, C. J. and M. H. Kim, 1988. A Systematic Study on the Marine Sponges in Korea. 7. Demospongia and Hexactinellida. Kor. J. Syst. Zool., **4**(1): 1-42.

Sim, C. J., Y. S. Kim and Y. H. Kim, 1992. A Systematic Study on the Marine Sponges in Korea. 10. Demosponges of Chejudo Island. Kor. J. Syst. Zool., **8**(2): 301-324.

Sim, C. J. and Y. H. Kim, 1994. A Systematic Study on the Marine Sponges in Korea. 11. Sponges of Islets Near the Coast of Cheju Island. Kor. J. Syst. Zool., **10**(1): 17-37.

Sim, C. J. and K. J. Lee, 1998. Three New Species of Poecilosclerid Sponge from Korea. Korean J. Biol. Sci., **2**: 21-26.

Tanita, S., 1968. Sponge Fauna of the Ariake Sea. Bull. Seikae Reg. Fish Res. Lab., **36**: 39-63.

RECEIVED: 1 August 2000
ACCEPTED: 16 September 2000

한국 해산 해면류 (보통해면강: 다골해면목)의 2미기록종

김 지 영 · 심 정 자
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요 약

1986년부터 1999년까지 진도, 구룡포, 제주도에서 채집된 해면동물을 동정 · 분류한 결과 이오폰해면과(Iophonidae)에 가시끈적해면 (*Myxichela spinulosa*)과 유령해면과 (Microcionidae)에 유극침유령해면[*Clathria (Clathria) acanthostyli*] 2종이 한국미기록종으로 밝혀졌다.