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Two New Records of Smittinids (Bryozoa: Gymnolaemata: Cheilostomata) from Korea

Ji Eun Seo* and Yong-Hak Gong
(Department of Life Sciences, Woosuk University, Jeonbuk 565-701, Korea)

ABSTRACT

Two smittinid species, *Pleurocodonellina signata* and *Smittina torques*, are new to Korean bryozoan fauna. *Smittina elongata* recorded as a new species from Japan is synonymized with *Pleurocodonellina signata*, and *Smittina torques* has been reported only from New Zealand so far. The genus *Pleurocodonellina* is recorded in Korean waters for the first time.

Key words: taxonomy, Smittinidae, Bryozoa, Korea

INTRODUCTION

This work is a part of systematic study of Korean Smittinidae. Fifteen species of smittinid bryozoans were recorded from Korean waters so far (Rho and Lee, 1980; Rho and Kim, 1981; Song, 1985; Rho and Seo, 1986; Seo, 1993, 2002a, b, 2003). They are as follows: *Parasmittina areolata, P. contraria, P. crosslandi, P. delicatula, P. elongata, P. pyrifomis, P. serrula, P. triangularis, Smittina landsborovii, S. malleolus, S. marsupium, Smittoidea levis, S. pacifica, S. prolifica* and *S. reticulata*. Of which, *P. elongata* recorded as a new species by Okada and Mawatari (1936) is herein synonymized with *Pleurocodonellina signata*. *Smittina malleolus* and *Smittoidea levis* from Korea are misidentification of *Smittina torques* and *Schizomavella acuta*, respectively. *Schizomavella acuta* doesn't belong to the family Smittinidae. As a result of this study, 14 smittinids are recorded from Korean waters.

*To whom correspondence should be addressed
Tel: 82-63-290-1516, Fax: 82-63-290-1512, E-mail: jeseo@woosuk.ac.kr

The materials examined have been collected from 5 localities (Moseulpo, Supseom, Beomseom, Chagwido and Seogwipo) of Jeju-do waters, Mipo and Hongdo during the period from 1975 to 1992. All of them were collected from the fishing net and SCUBA diving, and fixed and preserved in 70% methyl alcohol. Some parts of the colony were bleached and dried in air. They were then gold-coated for observation under a Scanning Electron Microscope.

SYSTEMATIC ACCOUNTS

Phylum Bryozoa Ehrenberg, 1831
Class Gymnolaemata Allman, 1856
Order Cheilostomata Busk, 1852
Suborder Ascophora Levinsen, 1909
Family Smittinidae Levinsen, 1909 입이끼벌레과
Genus **Pleurocodonellina* Soule and Soule, 1973

*****Pleurocodonellina signata* (Waters, 1889), Comb. nov. (Fig. 1)**

Smittia signata Waters, 1889, p. 17, pl. 3, figs. 4-6.
Smittina elongata Okada and Mawatari, 1936, p. 69, text-fig. 8.
Smittina signata: Harmer, 1957, p. 928, pl. 63, figs. 27-29.
Parasmittina signata: Ryland and Hayward, 1992, p. 273, fig. 24b.
Parasmittina elongata: Seo, 1993, p. 38, pl. 2; 2003, p. 135.

Material examined. Moseulpo, 18 Jun. 1985 (J. E. Seo), on other bryozoan (*Celleporaria* sp.); Supseom (Jeju-do), 14 Jul. 1987; Beomseom (Jeju-do), 22 Oct. 1991 (J. I. Song), on seaweeds and other bryozoan (*Watersipora platypora*); Chagwido (Jeju-do), 23 Oct. 1991 (J. I. Song), on oyster shells.

Description. Colony encrusting on other bryozoans, mollusk's shells and seaweeds, and forming extensive, unilaminar sheets. Zooids commonly 0.54×0.31 mm, with a finely nodular frontal wall, bordered by a single series of large and conspicuous areolae. Primary orifice 0.12×0.11 mm, with broad and flat condyles delimiting a narrow and rounded proximal sinus. One distal oral spine base presents in some zooids without distal peristome. Peristome thin, erect, completely surrounding orifice and obliterating spine base in most zooids. Single avicularium proximo-lateral to orifice, 0.10×0.03 mm; rostrum slender, elongate triangular, proximally directed; opesia semicircular and pivot bar complete. Ovicell recumbent on succeeding zooid, 0.15×0.11 mm, wider than long; frontal surface slightly flattened, with pores.

Remarks. The genus *Parasmittina* has the frontal wall with areolar pores, while *Smittina* has the one with numerous pores over the whole area. *Smittina elongata* from Japan reported as a new species by Okada and Mawatari (1936) was synonymized into *Parasmittina elongata* (Seo, 1993; 2003). However, both genera has a well developed lyrula. The genus *Pleurocodonellina* reported by Soule and Soule (1973) is characterized by the frontal wall with areolar pores and the primary orifice with no lyrula. Therefore, Ryland and Hayward (1992) placed *Smittia signata* Waters and

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*종사촌이끼벌레속 (신칭), **길쭉종사촌이끼벌레 (신칭)

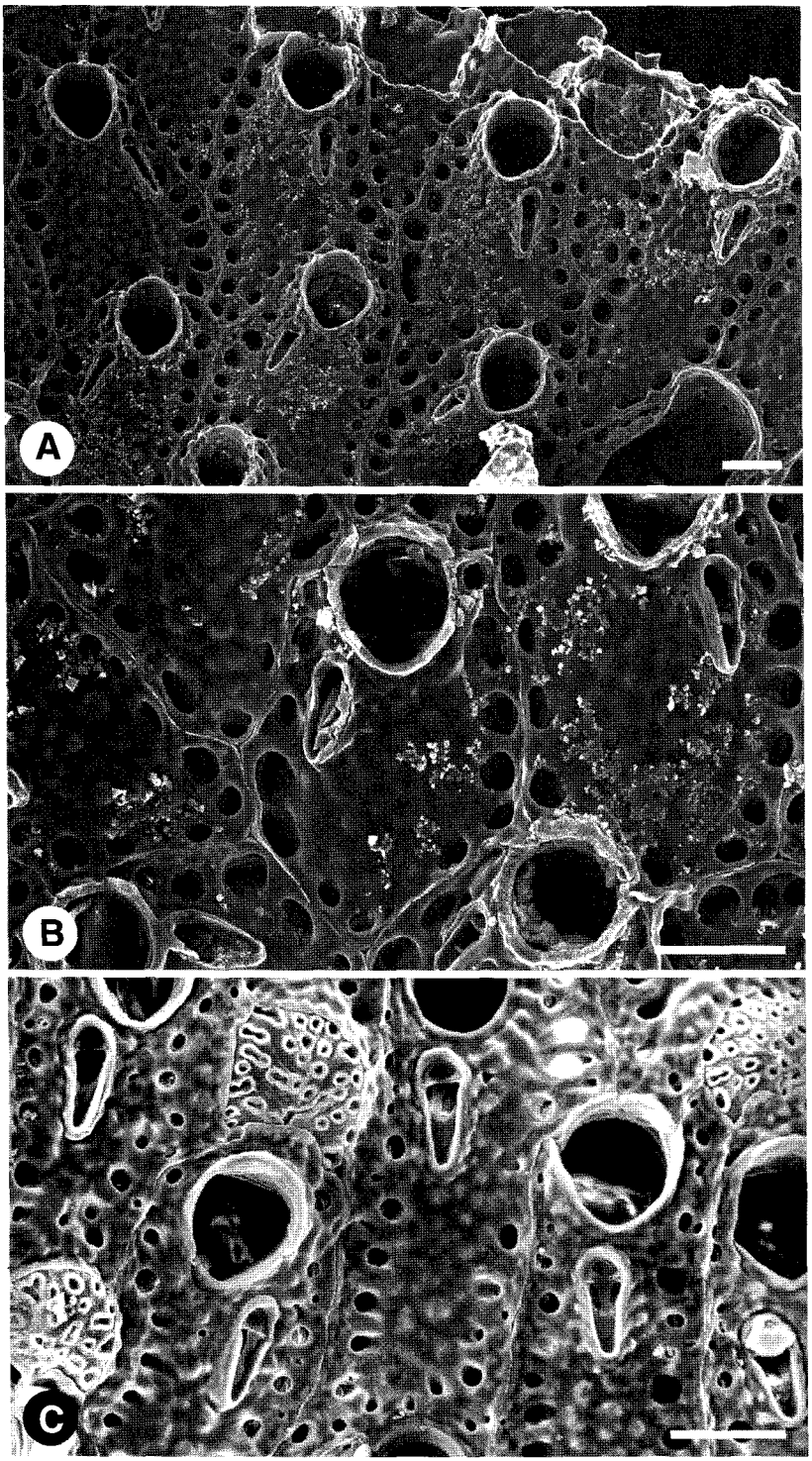

Fig. 1. *Pleurocodonellina signata*. A, zooids with a spine and avicularium; B, orifice showing the condyles C, ovicellate zooids. Scale bars = 0.1 mm (A-C).

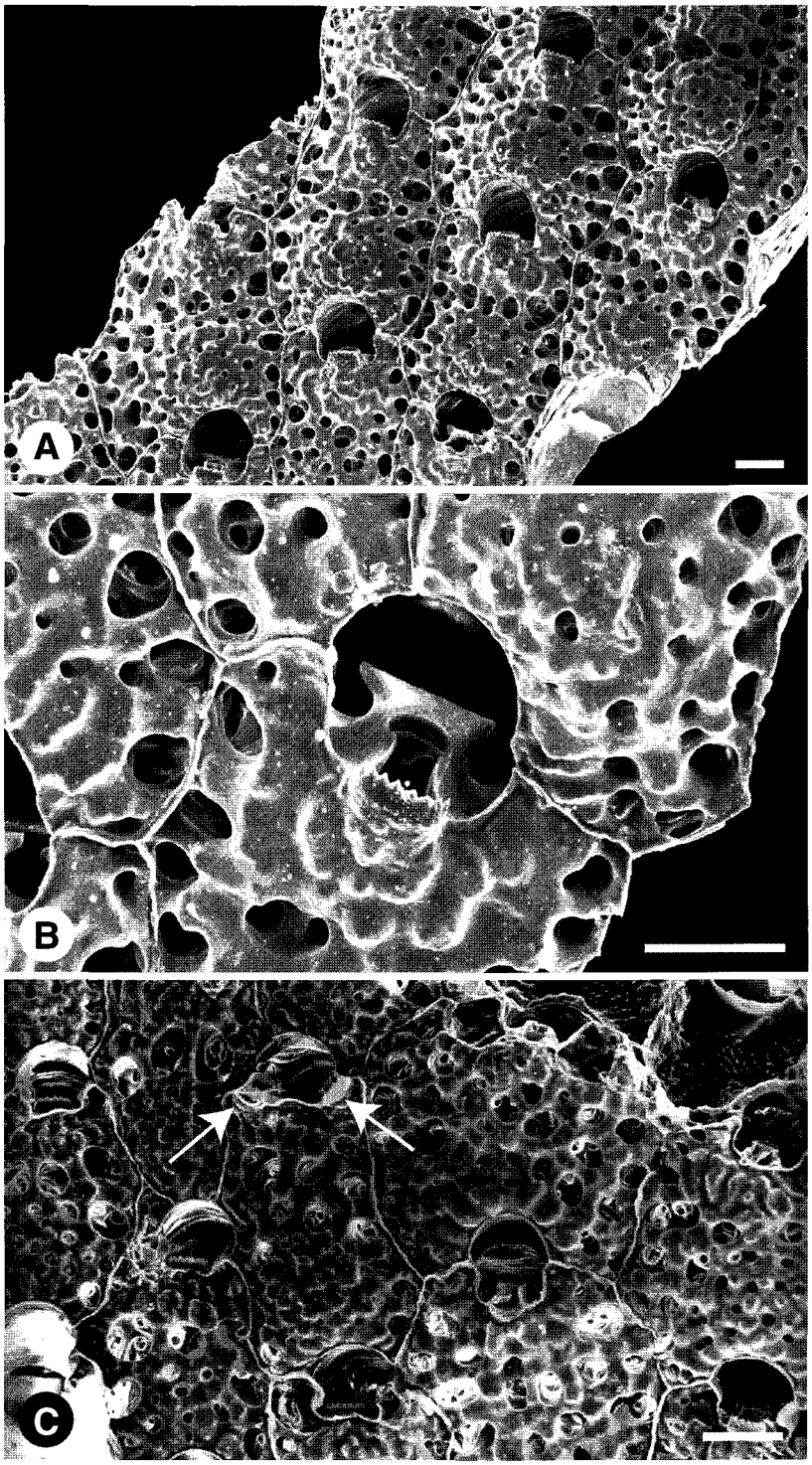

Fig. 2. *Smittina torques*. A, ovicellate zooids; B, oral avicularium; C, zooid showing additional avicularia (arrows). Scale bars = 0.1 mm (A-C).

Smittina signata (see Harmer, 1957) in the new genus *Pleurocodonellina* by the flaring peristomial rim which obliterates the distal spines, and only a pair of condyles producing the sinus. The primary orifice without lyrula and frontal wall with areolar pores also made Korean and Japanese specimens to fall within the genus *Pleurocodonellina*. *Pleurocodonellina signata* is known to be circumtropical in distribution. (Ryland and Hayward, 1992). All of the specimens collected from Korea were only from the southern part of Jeju-do waters. The genus *Pleurocodonellina* is new to Korean waters.

Distribution. Korea, Japan, Australia (New South Wales), Heron Island (Great Barrier Reef), Mauritius, East Africa, West Africa, Caribbean Sea.

Genus *Smittina* Norman, 1903

***Smittina torques* Powell, 1967 (Fig. 2)**

Smittina torques Powell, 1967, p. 325; Gordon, 1970, p. 323; 1984, p. 91, pl. 32 E; 1989, p. 51; Ryland, 1975, p. 388.

Smittina malleolus: Seo, 1993, p. 37, pl. 1; 2003, p. 134 [not *S. malleolus* (Hincks, 1884)].

Material examined. Mipo, 25 Apr. 1975 (B. J. Rho); Seogwipo, 22 May 1982 (J. I. Song); Moseulpo (Jeju-do), 18 Jun. 1985 (J. E. Seo); Seogwipo (Jeju-do), 9 Jul. 1985 (J. I. Song), on other bryozoans; Hongdo (Jeollanamdo), 26 Jun. 1992, by SCUBA diving.

Description. Colony encrusting on plastic, seaweeds or other bryozoans. Zooids 0.39 × 0.33 mm, arranged longitudinally. Frontal wall with pores coarsely. Primary orifice wider than long, 0.08 × 0.12 mm with a pair of acute condyles and a broad alate lyrula almost hidden by a median avicularium. A rather broad, imperforate but tubercular, inflated peristomial collar proximal and lateral to orifice. A median oral avicularium 0.05 × 0.03 mm, with broad spatulate toothed rostrum located on base of lyrula and directed proximally upward; opesia semicircular and pivot bar complete. Additionally, a pair of avicularia similar to median one in shape, very rarely situated within sinus; its rostrum not toothed. Ovicell subimmersed in next distal zooid, with 8-14 pores.

Remarks. The Korean specimens are exactly same as the description and figures of the one from New Zealand in Gordon (1984). However, the frontal avicularium described in Powell (1967) is not found in both Korean and Gordon (1984, 1989)'s specimens. Additional pair of oral avicularia are characteristic only in some of Korean ones (Seogwipo and Mipo) instead. This species has been reported only from New Zealand so far and is fouling bryozoan encrusting on the plastic. Therefore, *S. torques* seems to be the introduced species from New Zealand.

Distribution. Korea, New Zealand.

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*목걸이입이끼벌레 (신칭)

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서 지 은*·공 용 학
(우석대학교 생명과학과)

요 약

길쭉종사촌이끼벌레(*Pleurocodonellina signata*)와 목걸이입이끼벌레(*Smittina torques*)의 두 종을 한국미기록종으로 보고한다. 일본에서 신종으로 보고되었던 *Smittina elongata*는 길쭉종사촌이끼벌레의 동종이명이며 목걸이입이끼벌레는 현재까지 뉴질랜드로부터만 보고되었던 종이다. 종사촌이끼벌레속(*Pleurocodonellina*)은 한국해역에서 처음으로 보고된다.