

A New Species of the Genus *Tetilla* (Spirophorida: Tetillidae) from Korea

Eun Jung Shim, Chung Ja Sim*

Department of Biological Sciences, College of Life Sciences and Nano Technology,
Hannam University, Daejeon 305-811, Korea

ABSTRACT

A new species in the genus *Tetilla*, *Tetilla hwasunensis* n. sp. was collected from Hwasun Harbor, Jeju Island in 2009. This species differs from *T. serica* its lack of spherules and from *T. radiate* by having sigmaspires. Description and figures of the new species are provided.

Keywords: Spirophorida, *Tetilla*, new species, Jeju Island

INTRODUCTION

The genus *Tetilla* Schmidt, 1868 is differentiated from other genera belonging to Tetillidae by a lack of porocalices and distinct cortex consisting of collagen fibers and special cortical megascleres. Approximately 50 species of *Tetilla* from all parts of the world's ocean have been described (Hooper and van Soest, 2002). Three species of *Tetilla* from Korean waters have been reported: *T. ovate*, *T. australis* and *T. koreana* (Thiele, 1898; Bergquist, 1968; Rho and Sim, 1981). Specimens examined in this study were collected during SCUBA diving at a depth of 5 m from Hwasun Harbor, Jeju Island, Korea. All procedures follow the methods of Rützler (1978). Type specimens are deposited in the Natural History Museum, Hannam University (HUNHM).

SYSTEMATIC ACCOUNTS

Phylum Porifera Grant, 1836
Class Demospongiae Sollas, 1885
Subclass Tetractinomorpha Levi, 1953
Order Spirophorida Bergquist and Hogg, 1969
Family Tetillidae Sollas, 1886

¹**Tetilla hwasunensis* n. sp. (Figs. 1, 2)

Type specimen. Holotype (Por. 104), Hwasun Harbor, Jeju Island, 2 Sep 2009, Kim SH, by SCUBA diving, at 5 m in depth, HUNHM. Paratype (Por. 104-1), collected with Holo-

type, HUNHM.

Description. Globular shape with one root-like base consisting of spicules and sand, size up to 4.3 × 3.5 × 1 cm. A single oscule 5 mm in diameter, opened at center of body. Colour pink in life, beige in ethanol. Texture very compressible. Surface of body even and smooth. Skeletal structure showing radial arrangement without distinct cortex. Bundles of oxeas run from basement to the surface. Surface region densely packed with oxeas and small protriaenes in fence-like structure. Lower part of body with less spongin. Root in base with dense anatriaenes and large protriaenes mixed with sand. Spicules. Oxeas straight or slightly curved. Anatriaenes very long and curved at tip. Protriaenes long and thin, it's clad unequally long. Sigmaspires with fine spines.

Megascleres (μm).

Large 1,180-1,830 × 8-10

Small oxeas 600-950 × 4-6

Anatriaenes rhabds 1,940-4,500 × 2-5

clads 15-40

Large protriaenes rhabds 1,800-2,050 × 4-7

clads 35-60

Small protriaenes rhabds 250-660 × 1-2

clads 75-100

Microscleres (μm).

Sigmaspires 10-15

Etymology. The species is named after the type locality, Hwasun Harbor, Jeju Island.

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

***To whom correspondence should be addressed**

Tel: 82-42-629-8455, Fax: 82-42-629-8280

E-mail: cjsim@hnu.kr

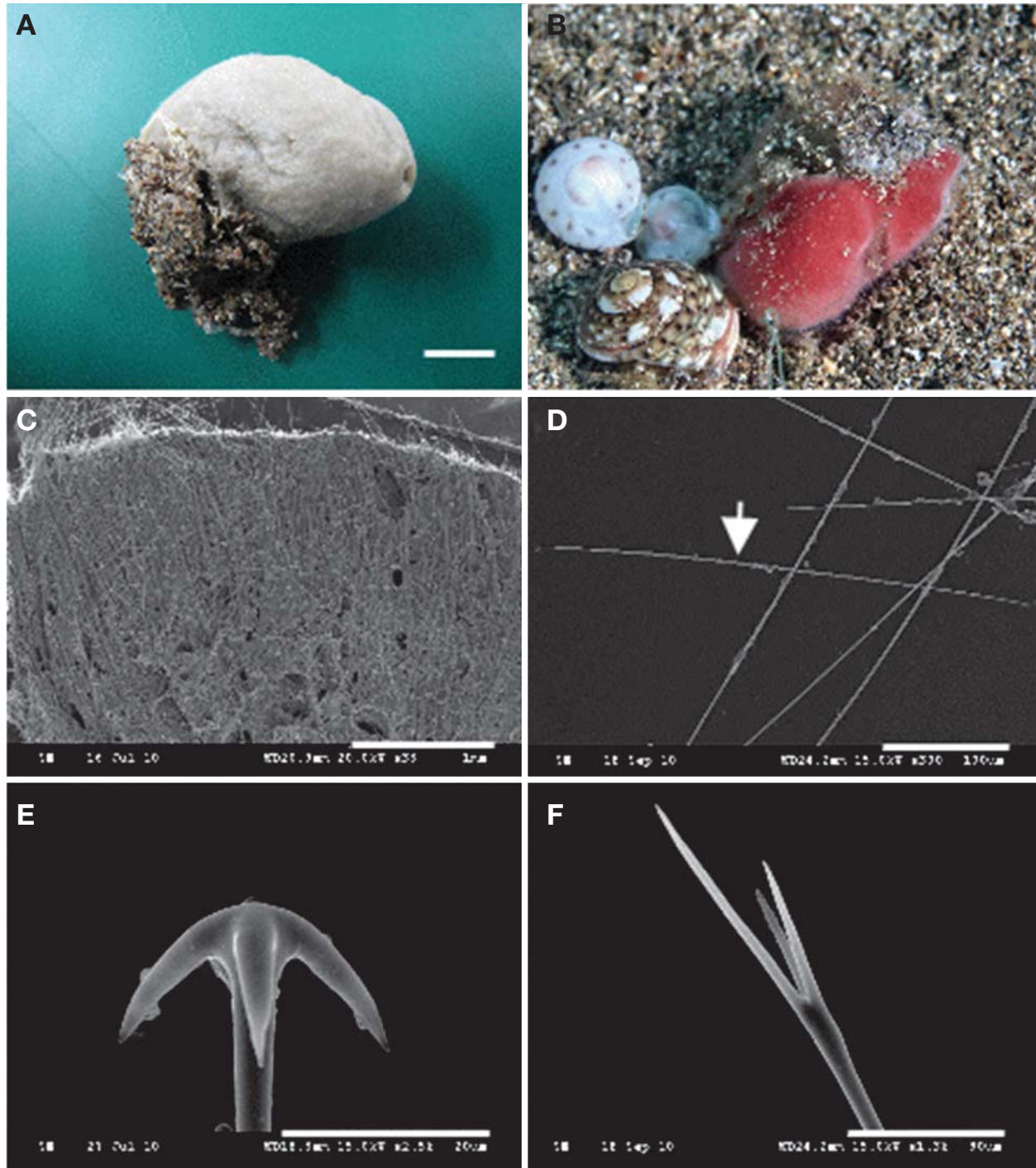


Fig. 1. *Tetilla hwasunensis* n. sp. A, Holotype; B, Sponge *in situ*; C, Skeletal structure; D, Oxea (arrow); E, Clad of anatriaene; F, Clad of large protriaene. Scale bars: A=1 cm, C=1 mm, D=100 μ m, F=30 μ m, E=20 μ m.

Remarks. *T. hwasunensis* n. sp. is similar to both *T. serica* collected from Japan (Lebwohl, 1914) and *T. radiate* from Brazil (Selenka, 1879) in globose shape and radial skeletal structure; however, this species is easily distinguished from

T. serica by a lack of spherules as microscleres. And the new species has sigmaspires; however, *T. radiate* doesn't have spicules. *T. australis*, reported in Korea (Rho and Sim, 1981), are covered with neumerous conules on the surface, whereas

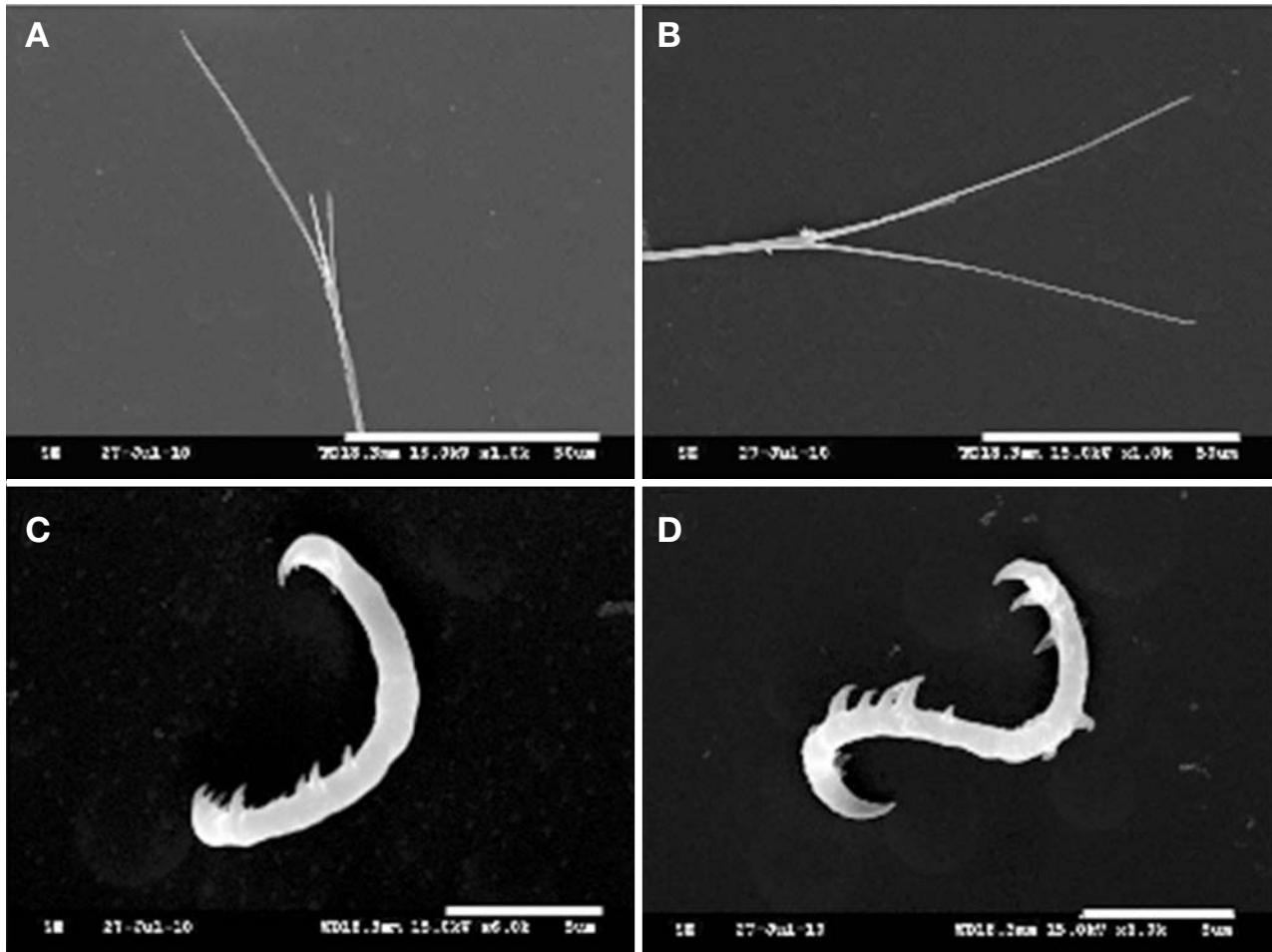


Fig. 2. *Tetilla hwasunensis* n. sp. A, B, Clads of small protriaenes; C, D, Sigmaspires. Scale bars: A, B=50 µm, C, D=5 µm.

the new species has an even surface.

ACKNOWLEDGEMENTS

This research was supported by a grant from the Marine Biotechnology Programme funded by the Ministry of Land, Transport and Maritime Affairs of the Korean Government. We thank Dr. G.J. Bakus, Department of Biological Science, University of Southern California for his review of the manuscript and S.H. Kim, IN THE SEA KOREA, for providing the specimens.

REFERENCES

- Bergquist PR, 1968. The marine fauna of New Zealand: Porifera, Demospongiae, Part 1. Tetractinomorpha and Lithistida. New Zealand Oceanographic Institute Memoir, 37:1-105.
- Hooper JNA, van Soest RWM, 2002. Systema Porifera: a guide to the classification of sponges. Kluwer Academic/Plenum Publishers, New York, pp. 1-1101.
- Lebwohl F, 1914. Japanische Tetraxonida. I. Sigmatophora und II. Astrophora metastrosa. The Journal of the College of Science, Imperial University of Tokyo, Japan, 35:1-116.
- Rho BJ, Sim CJ, 1981. One new species of Tetractinomorpha (Spirophorida) from Chugsan in Korea. The Korean Journal of Zoology, 24:145-150.
- Rützler K, 1978. Sponges in coral reefs. In: Coral reefs: reaserch methods. Monographs on oceanographic methodology. No. 5 (Eds., Stoddart DR, Johannes RE). UNESCO, Paris, pp. 299-313.
- Selenka E, 1879. Ueber einen Kieselschwamm von achtstrahligen Bau, und über Entwicklung der Schwammknospen. Zeitschrift für Wissenschaftliche Zoolgie, 33:467-476.
- Thiele J, 1898. Studien über pazifische Spongien. I. Zoologica, 24:1-72.

Received January 28, 2011
Accepted March 3, 2011