Two New Species of the Genus Sarcoctagus
(Demospongiae, Dictyoceratida, Ircinidae) in Korea

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ABSTRACT

Sponges of the genus Sarcoctagus are very poorly known in the world. Two new species of Sarcoctagus, S. mornevis n. sp. and S. gapoensis n. sp., are described from Korea.

Key words: Dictyoceratida, Ircinidae, Sarcoctagus, New species, Korea.

INTRODUCTION

The genera Ircinia, Phasmospongia, and Sarcoctagus in the family Ircinidae, once classified as Thorectidae, are distinguished by the presence of fine collaginous filaments within the sponge matrix and the presence of the furanosesterpine variable. Both of these features are unique to the Ircinidae (Bergquist and Wells, 1983). The genus Sarcoctagus has has fasciculate primary fibres that lack or almost lack foreign inclusions. The secondary fibres are clear of debris. Knobbed collagen filaments permeate the matrix, but these are always very fine (Bergquist, 1980; Hooper, 1994). The surface is condose, and its texture is tough. By 1980 there were only three described species of the genus Sarcoctagus worldwide, S. orbicula (Lendenfeld, 1889), S. spinulosa (Schmidt, 1863) and S. muscorum (Schmidt, 1864) (Bergquist, 1980). Seven species (five new species) of Korean Dictyoceratid sponges have been reported by Sim (1985, 1998) and Sim and Lee (1998). The genus Sarcoctagus Schmidt, 1862 is little known.

In this study, the specimens from Manzab and Gapsado (littoral waters of Chejado Island) were collected by scuba diving. Methods used in the light microscopy are described by Cook and Bergquist (1998). Scanning electron microscope (SEM, Akashi ISI-SS40) at the Department of Bio-

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log., Hanyang University, preparations were made after drying skeleton. As a result, two new species belonging to the genus Sarcocraerus are described from Korea, *S. marcanesi* and *S. gaperensis*. Type specimens are deposited in the Natural History Museum, Hanyang University, Taejon, Korea.

**DESCRIPTION**

Order Dictyoceratida Minchin, 1900
Family Isotetradiidae Gray, 1857
Genus Sarcocraerus Schmidt, 1962

1. **Sarcocraerus marcanesi** n. sp. (Fig. 1A-H)

**Type specimen.** Holotype (Por. 32, NHM, Hanyang Univ.), Mando (Cheju Island), on 25 Oct. 1991, SCUBA, 20 m depth. Paratype (Por. 32-1, Dept. of Biology, Hanyang Univ.), collected with holotype.

**Description.** Specimen globose or hemispherical, 16 cm x 10 cm x 12.7 cm high. Habitat on rocky substrate. Oecoles, 2-15 mm in diameter, irregularly scattered on surface, and sometimes has thin filamentous membrane. Texture very soft, and loosely arranged. Endosome and exosome have little matrix, and easily separated from body. Endosome has large canals pass through the sponge. Color in life ivory and purple, in spirit ivory. Surface: Filamentous membrane not cored with detritus. Sharp conules, 2-8 mm high, 2-10 mm apart, well developed and divided into two or three branches at terminal. Skeleton: Primary fibres very complody fasciculated, and secondary fibres arranged plate form (Fig. 1D-G). Sometimes these fibres very difficult to distinguish. Primary fibres lack foreign inclusions. Secondary fibres clear of debris. Filaments, 2-6 μm, very loosely arranged and emerge from holes in the fibre, and they have terminal knobs, 19-15 μm (Fig. 1F).

**Remarks.** Sarcocraerus marcanesi Schmidt is similar to the new species but its filaments are very fine (2-6 μm thick). S. spinosula Schmidt also has very thin filaments, 1-2 μm thick, and small terminal knobs, 3 μm in diameter. *S. exsudis* Leidholz is massive with digitate processes, on the summits of which the oscula are situated, our specimen is globular massive.

**Eymology.** This species is named after its type locality.

2. **Sarcocraerus gaperensis** n. sp. (Fig. 2A-I)

**Type specimen.** Holotype (Por. 33, NHM, Hanyang Univ.), Gapado (Cheju Island), on 21 Aug. 1998, SCUBA, 20 m depth. Paratype (Por. 33-1, Dept. of Biology, Hanyang Univ.), collected with holotype.

**Description.** Subspherical massive sponge, 11 cm x 6.6 cm x 5.3 cm high. Habitat on rocky substrate. Oecoles, 2-4 mm in diameter, irregularly scattered on surface. Thoresonian lived in each oscule. Texture elastic, tough and difficult to tear apart. Surface color in life black or dark brown, endosome ivory. Surface: Conules surface very rough. Conules, 2-5 mm height and 2-6 mm apart, well developed and sharply ended. Some continuous conules joined together, forming irregular ridges.

**Skeleton.** Primary fibres, 280-530 μm in diameter, fasciculated and uncored. Secondary fibres, 60-330 μm in diameter, slightly fasciculated and uncored (Fig. 2D-G). Endosome skeleton thick, simple and dark brown color (Fig. 2F). Filaments, 2.5-5 μm thick, very tightly arranged and emerge from holes in fibre and have terminal knobs, 12-15 μm in diameter (Fig. 2H-I).

**Remarks.** This species differs from all other described species of Sarcocraerus in its appearance, skeletal arrangement and filament size. Fasciculate primary fibres are slightly twisted.
Exonomy. This species is named after its type locality.

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REFERENCES


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Fig. 2. Sarcothoas seseformis n. sp. A, Side view, specimen preserved in alcohol; B, Surface of specimen (nuclei, not illustrated; C, Endosome of specimen (SEM, transsectional section); D-F, Skeletal structure; G, Fasciculate structure of fibre (SEM); H-J, Filaments emerge from the hole of the fibre (SEM). Scale bars: A-B, 1 cm; C, 400 μm; D-F, 200 μm; G, 120 μm; H-J, 10 μm.
한국 유혈실첩면속(Sorocophagus, 병격해면, 거늘실첩면과)의 2종

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요 약

유혈실첩면속(Sorocophagus)은 세계적으로 아직 많이 보고되지 않은 속으로 한국에서 2종, 마라유혈실첩면(S. martaenesis n. sp.)과 거늘유혈실첩면(O. gobanensis n. sp.)의 2종이 한국으로 보고되고 있다.