

First Report of *Pseudocladochonus hicksoni* Versluis from Korea
(Cnidaria, Anthozoa, Telestacea)

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韓國未記錄種 의소지산호 (*Pseudocladochonus hicksoni*) 의 報告
(자포동물 문, 산호충 강, 소지 목)

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摘 要

韓國産 산호충류의 계통분류학적 研究의 一環으로 1970년부터 1986년까지 大韓海峽의 尾浦, 五六島, 忠武, 鴻島, 虎島와 제주도 海域의 西歸浦에서 채집된 소지류의 표본들을 동정한 결과 韓國未記錄種에 속하는 의소지산호 (*Pseudocladochonus hicksoni*)가 韓國未記錄種임이 밝혀졌다.

Key words: systematics, Telestacea, Anthozoa, Korea.

INTRODUCTION

The present investigation is an extensive work for the study on Korean Anthozoa. The telestacean octocorals are rarely found in shallow water of Korea, and there has been a lack of knowledge of telestacean species.

For the faunal study of Korean telestaceans, the collections of them had been attempted at mean different localities along the coasts of South Korea during the period from 1970 to 1986, and they were collected from Mip'o, Oryukto, Ch'ungmu, Hongdo, Hedo in the Korea Strait, and Sŏgwip'o in the Cheju Island area (Fig.1).

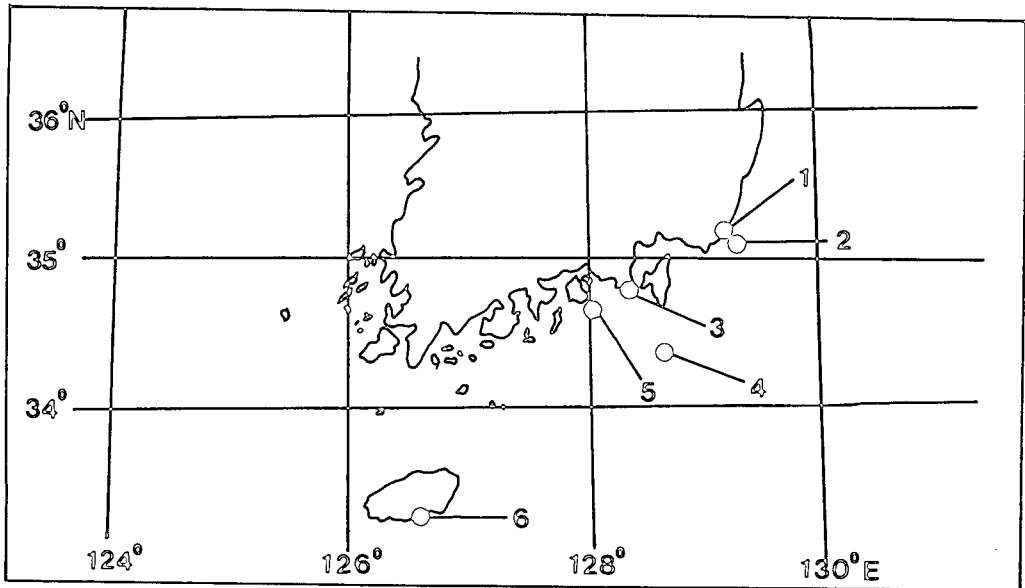


Fig. 1. The sampling sites on the telestaceans.

1, 미포 (Mip'o) ; 2, 오륙도 (Oryukto) ; 3, 충무 (Ch'ungmu) ; 4, 홍도 (Hongdo) ; 5, 호도 (Hodo) ; 6, 서귀포 (Sŏgwip'o).

The telestaceans are distinguished from stoloniferans by production of daughter polyps from the body wall of the axial or primary polyp, and from alcyonaceans by the absence of thick, spiculiferous mesogloea between the polyps. The order contains three families: Coelogorgiidae, Pseudocladochonidae and Telestidae which are clearly distinguished by the patterns of colony formation (Parker, 1982). Madsen (1944) removed *Pseudocladochonus* which differs principally in the equal zooids and the sympodial branching from the Telestidae and placed it in a family Pseudocladochonidae.

The colonies of *Pseudocladochonus hicksoni* Versluys were sampled from hydroids, gorgonians, bryozoans, ascidians, sea weeds, and others collected with fishing nets. They were preserved in 70-80 percent alcohol after anesthetization in the dark place with menthol crystals.

For the identification of the species, the examinations were focused on the following characters: the growth form of corallum, the mode of branching, the size and shape of the polyps and the sclerites, the arrangement of sclerites, the cross section of polyp near base. The size of sclerites were measured with an ocular micrometer.

Pseudocladochonus hicksoni newly known in the Korean fauna was described with figures and plate figures. The specimens are deposited in Department of Biology, Ewha Womans University.

RESULTS

Phylum Cnidaria Hatschek, 1888
Class Anthozoa Ehrenberg, 1834

자포동물 문
산호충 강

Subclass Octocorallia Hackel, 1856 팔방산호 아강
Order Telestacea Hickson, 1930 소지 목

Erect, branching colonies arising from bandlike reticulate or membranous stolons. Primary polyp produces daughters from its body wall. Sclerites numerous, free, or partially or entirely gastrovascular cavities may be filled in with spiculiferous intrusion tissue.

Family Pseudocladochonidae Madson, 1944 의소지산호 과

All polyps more or less equal on length, each giving rise near its distal to one daughter at an acute angle, thus forming zigzag, sympodial colonies. Each polyp slender, partially filled with spiculiferous mesogloel tissues which leave open 8 canals. Body wall thin, with 8 indistinct longitudinal grooves in external surface.

Monogeneric family of deep-water telestacean octocorals represented by the genus *Pseudocladochonus*.

Genus *Pseudocladochonus* Versluys, 1907 의소지산호 속

Sclerites of body walls much branched, anastomosing, fused to form rigid but delicate tubes. Sclerites of mesogloel intrusion tissue larger and less branched.

Pseudocladochonus hicksoni Versluys, 1907 의소지산호 (Pls.1-2)

Pseudocladochonus hicksoni Versluys (1907, pp.9-39, text-figs.1-16, pls.2-3, figs.1-14); Bayer, 1955 (p.F186, text-figs.137, 4a-e, 8); Utinomi, 1962 (p.106); 1973 (pp.149-152).

Material examined: Sögwip'o, Aug.8, 1970, 1 colony (J.I. Song); Oryukto, Apr.25, 1975, 12 colonies creeping on hydroids (J.I. Song); Ch'ungmu, Jun.5, 1978, 16 colonies on sea weed; Ch'ungmu, Jul.19, 1978, two colonies on tunic of ascidian (J.I. Song); Hongdo, Jul.20, 1978, many colonies on gorgonians, *Acalyigorgia inermis* (J.I. Song); Mip'o, Nov.26, 1983, many colonies on bryozoans (J.I. Song & J.H. Park); Hodo, Jul.19, 1984, 18 colonies with hydroids and bryozoans on tube of annelid (G.E. Seo); Mip'o, Dec.27, 1986, 15 colonies on gorgonians, *Melithaea* sp. (J.I. Song & H.S. Hann).

Description: Colonies arising from creeping stolons, 0.5-1.0mm in diameter, simple or branched, and attend to 23mm in height. Primary axial polyps extend up to 8mm in total length, and give rise near its distal end to one daughter at an acute angle. Each equal polyps arising from near tip of each polyp successively in a form of zigzag manner (thus forming zigzag, sympodial colonies) (Fig.2). These daughter polyps 4.0-6.0mm tall, 1.0-1.3mm wide at upper part, and 0.5-0.7mm wide at lower part. On same colony, polyps arranged 2.5-3.0mm apart at an acute angle (Table 1).

Body walls thin, rigid in texture, forming delicate tubes with anastomosing sclerites, overgrown by athecate hydroids. They shows the typical *en chevron* arrangement with spiculation from base of polyp to distal ends of axial and subordinate polyps.

Polyps head, 1mm long usually completely retracts into truncate-conical anthostele, and neck zone transparent with no sclerites. Anthocodial spiculation shows typical *en chevron* arrangement by point sclerites. Intermediate sclerites 2-3 in number, situated between points. On the aboral side of tentacles, about 0.04-0.14mm long slender rodlet sclerites transversely placed towards each pinnules. Tentacles have 10

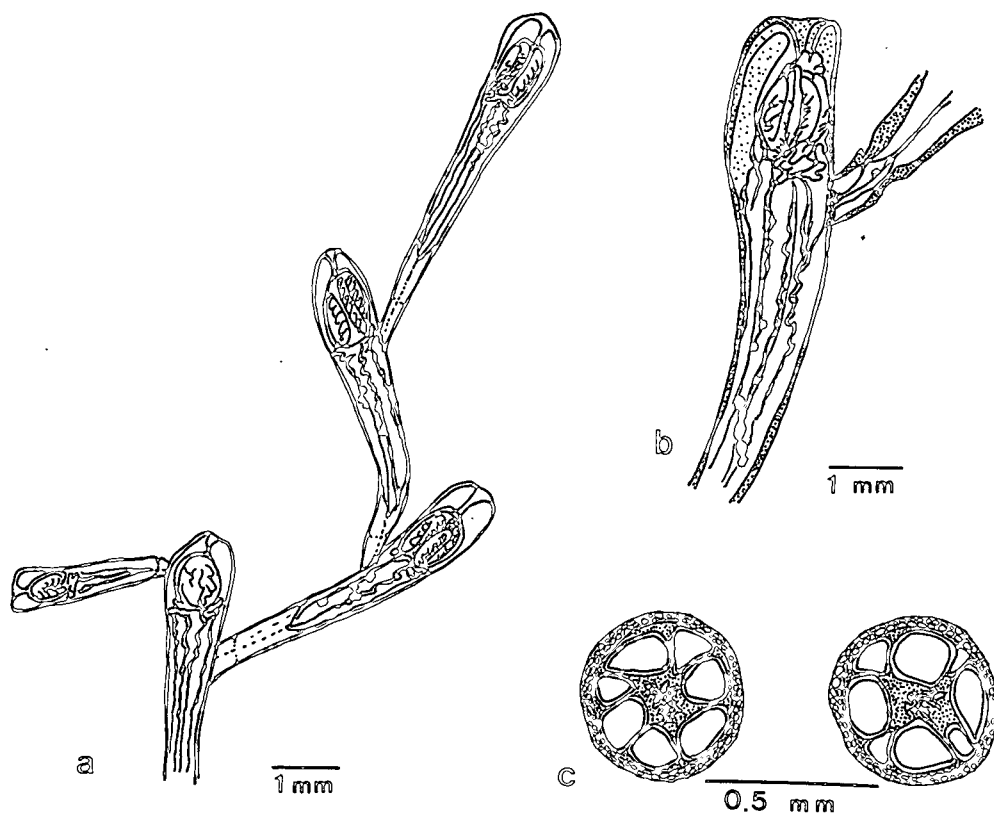


Fig. 2. *Pseudocladochonus hicksoni* Versluys.

- a. A sympodial colony with successive polyps.
 b. Distal part of axial polyp with lateral branching.
 c. Cross section of axial polyp near base.

Table 1. Comparison of some characteristics in relation to sampling sites.

Characters	Oryukto Apr. 25, 1975	Ch'ungmu Jun. 5, 1978	Hodo Jul. 19, 1984	Mip'o Dec. 27, 1986
No. of colonies	12	16	18	15
Colony(mm)				
height	4-17	8-23	8-16	10-20
width	2-9	4-12	2-12	3.5-13
thickness	2-3	2-6	2-5	1.5-8
Polyp(mm)				
length	3.0-6.0	3.0-6.5	4.0-8.0	4.0-6.5
width	1.0-1.5	1.2-1.5	1.0-1.5	1.0-1.5
Stolon(mm)				
width	0.5-1.0	0.5-1.0	0.5-1.0	0.5-0.8
No. of branch	2-5	2-6	2-4	3-8
Gonads	-	+	+	-

pinnules on each side.

Anthostele extremely rigid, spiculiferous, brittle, truncate-conical. On a cross section through basal part of branches, 0.5-0.7mm in diameter, 8 solenia perforate in a ring concentrically around central spiculiferous intrusion tissue. Eight mesenteries in gastrovascular cavity show through semi-transparent spiculiferous anthostele (calycular wall), and gonads occur in mesenteries of specimens collected from Ch'ungmu in June and Hodo in July.

In color, all colonies yellowish orange in life, pale yellow in alcohol, and spicules all colorless.

Measurement (mm) of sclerites are as follows:

Tentacles	rodlets	0.04 × 0.01 - 0.14 × 0.04
Anthocodia	spindles	0.21 × 0.03 - 0.36 × 0.04
Neck zone	none	
Anthostele	spindles	0.05 × 0.02 - 0.20 × 0.04
	radiates	0.09 × 0.04 - 0.25 × 0.09
	fused rods	0.25 × 0.10 - ?
Intrusion tissue	branched spindles	0.07 × 0.05 - 0.14 × 0.11
	fused rods	0.22 × 0.09 - 0.26 × 0.13
Base of anthocodia	irregular radiates	0.05 × 0.04 - 0.13 × 0.10
	fused rods	0.22 × 0.09 - ?
Stolon	irregular	0.06 × 0.02 - 0.16 × 0.13
	fused rods	0.22 × 0.09 - ?

Habitat: Stolons often covered with sponges are creeping on hydroids, gorgonians, bryozoans, ascidians, sea weeds, and others. Colonies overgrown with athecate hydroids are branching sympodially near distal end of each polyp.

Remarks: The present specimens agree in general with Versluys's original description (1907) and Bayer's description (1956) except for the differences in the length of gastrovascular cavity, and the size of sclerites and colonies.

Distribution: Korea (Korea Strait, Cheju Is.), Japan (Sagami Bay to southwestern coast of Kyusyu, 90-100m in depth), Malay Peninsula.

ABSTRACT

The telestaceans were collected from Mip'o, Oryukto, Ch'ungmu, Hongdo and Hodo in the Korea Strait, and Sogwip'o in the Cheju Island area from 1970 to 1986. *Pseudocladochonus hicksoni* identified in the present study is new to the Korean fauna.

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Explanation of Plates 1-2

Plate 1

- Fig. 1-3. Colonies, overgrown by athecate hydroids.
- Fig. 4. Expanded polyp, showing the arrangement of sclerites.
- Fig. 5. A tentacle, showing dorsal transverse sclerites.
- Fig. 6. Anthocodial sclerites arranged *en chevron*.
- Fig. 7. Neck zone of polyp and distal part of anthostele.

Plate 2

- Fig. 1. Four sclerites from tentacles.
- Fig. 2. Four sclerites from anthocodia.
- Fig. 3. Various and fused sclerites of anthostele.
- Fig. 4. Various and fused sclerites of stolon.
- Fig. 5. Sclerites of intrusion tissue.
- Fig. 6. Sclerites of base of anthostele.

PLATE 1

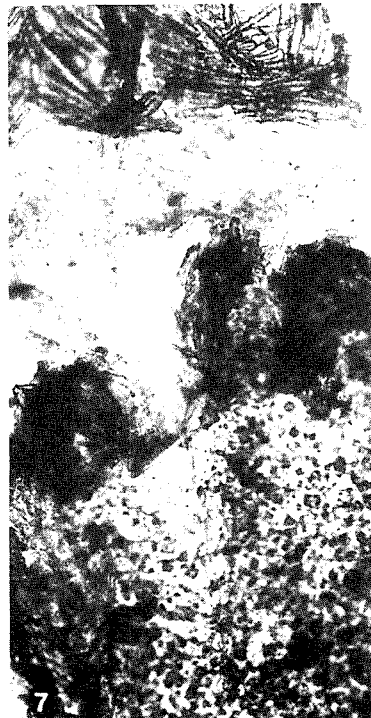
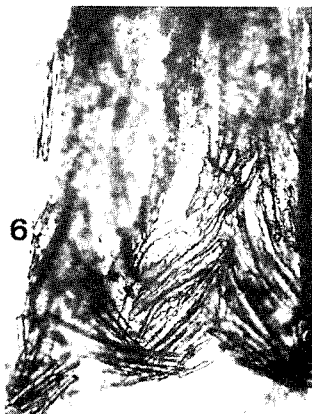
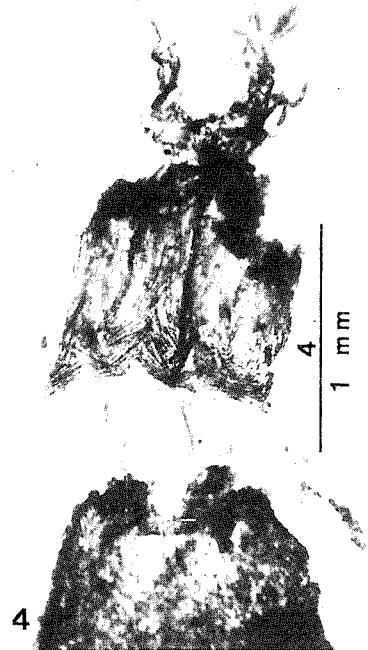
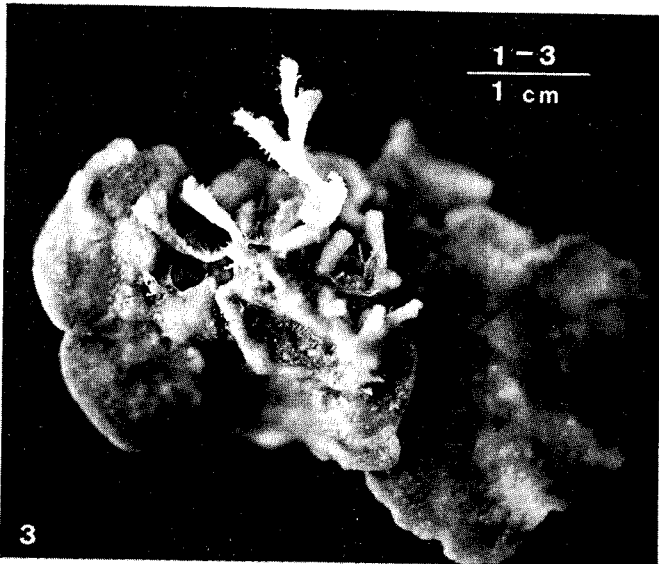


PLATE 2

