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Two New Records of Siphonophora (Hydrozoa) and Semaeostomeae (Scyphozoa) in Korea

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ABSTRACT

Some siphonophores and scyphomedusae were collected from the coasts of Hoopo (Sea of Japan) and Geojedo Island, Changson (Korea Strait) in Korea respectively. They identified into *Porpita umbella* O. F. Muller, 1776 of the order Siphonophora in the Hydrozoa and *Dactylometra quinquecirrha* L. Agassiz, 1862 of the Semaeostomeae in the Scyphozoa. *P. umbella* looks like a blue button. It's chitinous float is light brown and the other body portions are turquoise blue. *D. quinquecirrha* has four long curtain-like oral lobes which are highly flexible and ornamented with numerous nematocyst warts, and 32 radiating reddish brown stripes upon exumbrella. The Siphonophora is reported for the first time and three scyphomedusae are reported in Korea so far.

Key words: Taxonomy, Siphonophora, Scyphozoa, Korea

INTRODUCTION

Siphonophores are floating hydroid colonies. At the top of the colony of some genera, there is a gas-filled float called the pneumatophore. Their gastrozooids and gonozooids are invariably present, while dactylozooids and nectophores are characteristic of certain genera (Kozloff, 1990).

The genus *Porpita* possessses a flat discoidal umbrella and circular float with numerous gas-filled chambers (Haeckel, 1888). In Scyphozoa the medusa is the dominant and conspicuous in the life

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cycle. The polypoid form is restricted to a small, sessile stage (Kozloff, 1990; Ruppert and Barnes, 1991). The genus *Dactylometra* is provided with 40 tentacles and 48 marginal lappets. It is closely related with *Pelagia, Chrysaora* and *Kuragea* of the family Pelagiidae bearing 8 sensory organs and being composed of 8 radial sectors. The genus *Pelagia* shows the structure of ephyra. After passing through the *Pelagia* stage, the medusa is transformed into *Chrysaora* which has 24 tentacles and 32 marginal lappets. And then as passing through the *Dactylometra*, the medusa changed into *Kuragea* which is equipped with 56 tentacles and 64 lappets (Mayer, 1910; Uchida, 1935, 1938).

Some siphonophores and scyphomedusae were collected in the coasts of Hoopo and Geojedo Island respectively. They were preserved in 5% formalin after narcotization with menthol powders. The specimens were identified into *Porpita umbella* in the Hydrozoa and *Dactylometra quinquecirrha* in the Scyphozoa. The redescriptions and photographs of their characters are provided.

RESULTS

Phylum Cnidaria 자포동물문

Class Hydrozoa 히드라충강

Order Siphonophora 관해파리목

Family Porpitidae 푸른우산관해파리과(신칭)

***Porpita umbella* O. F. Muller, 1776** 푸른우산관해파리 (신칭) **(Fig. 1A-D)**

Porpita porpita: Cairns *et al.*, 1991, p. 17; Wrobel and Mills, 1998, p. 31.

Porpita umbella: Bigelow, 1914, p. 24; Kawamura, 1954, p. 125; Vanhoffen, 1906, p. 39, figs. 64-65.

Material examined. Hoopo, 24 Aug. 2001 (H. S. Ko).

Description. Chitinous float flat, circular like as coin, 18-21 mm in diameter, without any tubercles, covered with thin umbrella which extended outward from float and forms narrow marginal limbus in about 1.5-2 mm wide. Float usually golden brown, with numerous radial ridges and ring ridges which form a central chamber and numerous radial chambers filled with gases. Stigmata on superior surface of disc in central region larger than ones in marginal region. Beneath float, with numerous marginal tentacles, a large central gastrozooid, and numerous smaller and slender gonozooids densly crowded in broad zone between marginal tentacles and a central gastrozooid. Marginal tentacles arranged in several circular raws, equally distributed along whole margin of unbrella, not branched, with three longitudinal raws of stalked nematocyst knobs. A large central gastrozooid conical shaped in contraction, composed of a mouth, manubrium and broad stomach. Gonozooid densely crowded in broad zone between margini tentacles and central gastric siphon, smaller than gastrozooid, with stalked nematocyst knobs, a mouth and bearing many medusa buds in its proximal portion. Marginal limbus, marginal tentacles and zooids turquoise blue in live.

Remarks. This species quite resembles *Porpita pacifica* in the shapes of float, marginal tentacles and zooids. But it is readily distinguished from *P. pacifica* which has tubercles on the upper surface

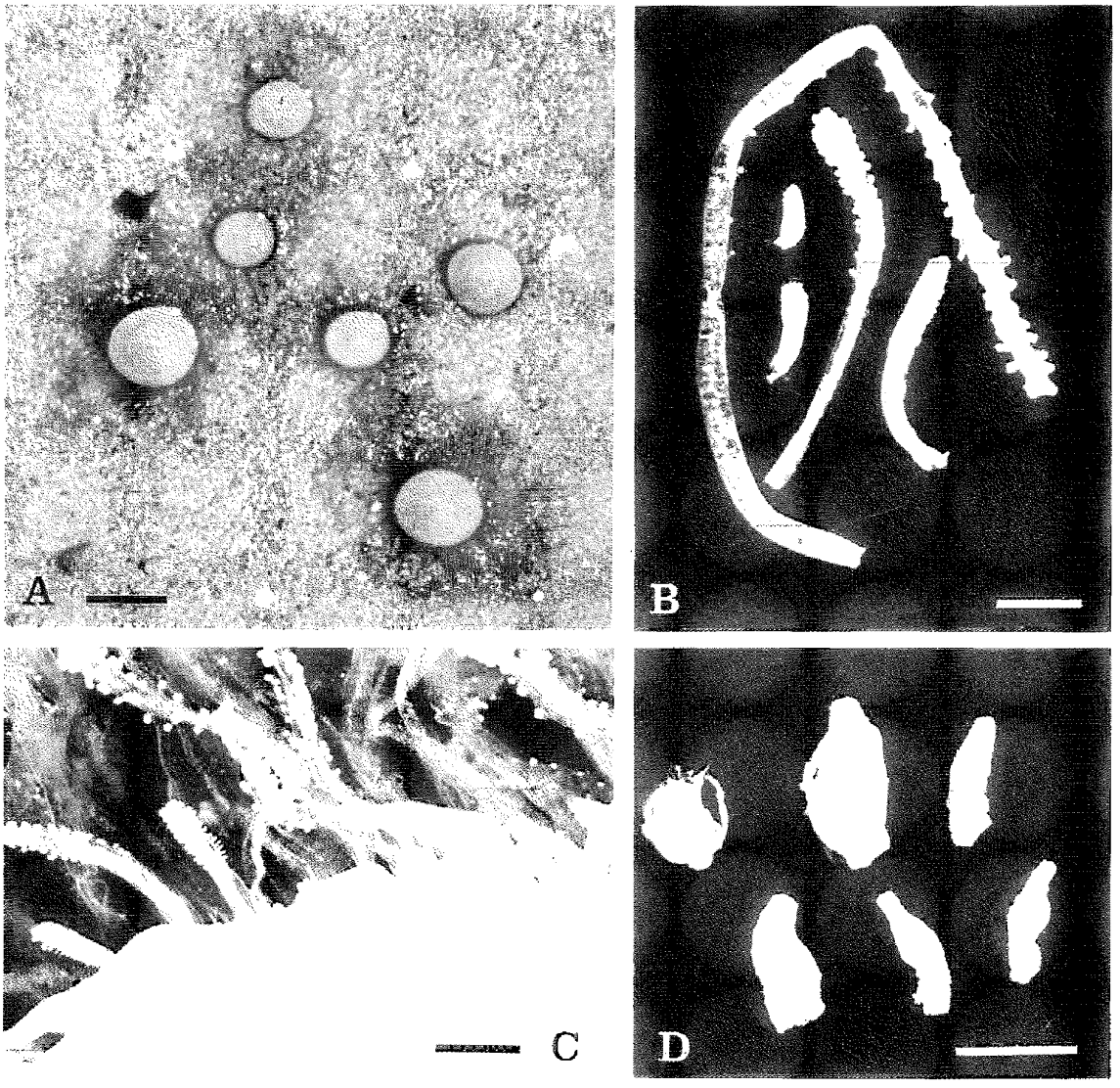

Fig. 1. *Porpita umbella*. A, colonies are on the sandy shore; B, marginal tentacles in various sizes; C, umbrella margin; D, gonozooids. Scale bars = 1 mm (D), 2 mm (B, C), 20 mm (A).

of disc, many more numbers of nemetocyst knobs on the marginal tentacles and more branched complex canals of limbus. Bigelow (1911) noted that the smooth Atlantic *P. umbella* probably changed into the papillated Pacific *P. pacifica* in growth.

Distribution. Cosmopolitan in warmer waters.

Class Scyphozoa 해파리강

Order Semaeostomeae 기구(旗口) 해파리목

Family Pelagiidae 원양해파리과(신칭)

***Dactylometra quinquecirrha* L. Agassiz, 1862** 커튼원양해파리 (신칭) **(Fig. 2A-G)**

Dactylometra quinquecirrha L. Agassiz, 1862, p. 125, 166; Vanhoffen, 1906, p. 50, fig. 13; Mayer, 1910, p. 585, fig. 371-372, pls. 62-64A; Kramp, 1961, p. 326; Southcott, 1959, p.

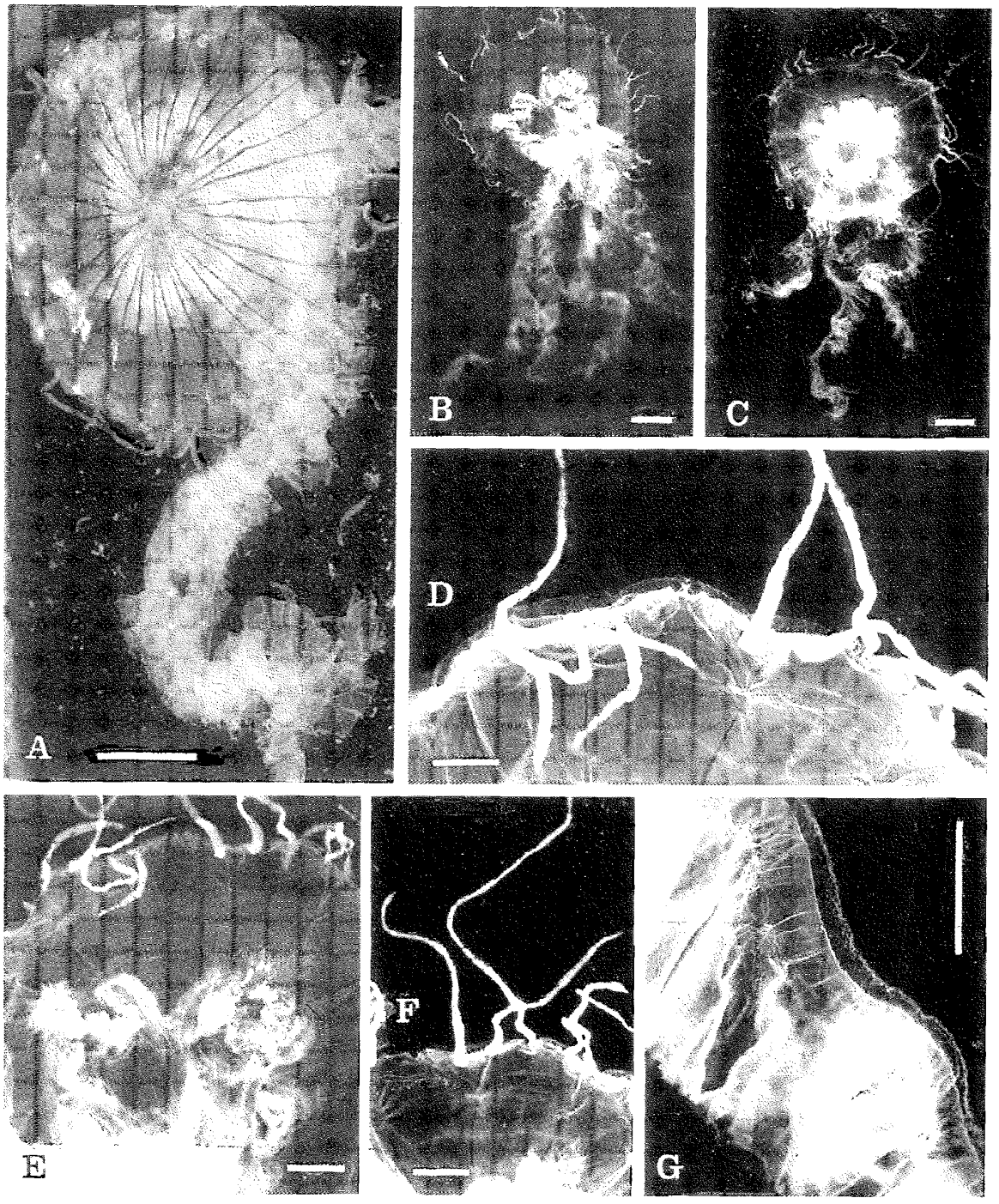

Fig. 2. *Dactylometra quinquecirrha*. A, aboral view; B, oral view; C, aboral view (black and white); D, bell margin; E, gastric pouches; F, five tentacles per octant; G, a part of curtain-like oral lobe. Scale bars = 10 mm (D-G), 20 mm (A-C).

575, fig. 5.

Chrysaora quinquecirrha : Kramp, 1961, p. 327.

Datylometra pacifica : Uchida, 1927, p. 229; 1935, p. 44; 1938, p. 44.

Material examined. Geojedo Island (Changson), 26 June 2000 (H. S. Ko).

Description. Bell light brown, about 90 mm wide, flatter than hemispherical, divided into 8 sectors. Mouth in center of subumbrella, with 4 long oral lobes. Oral lobes curtain-like, finely fringed margin and highly flexible, ornamented with numerous nematocyst warts, about 3-4 times as long as bell diameter. Large central stomach with 4 gastric pouches and gastric cirri, give rise to 16 simple radial canals. Marginal tentacles arising from shallow clefts, shorter than oral lobes, laterally compressed, 5 in number between each successive pair of sense organs (rhopalia) in common. Sense organs placed in deep clefts, contain a concretion but no ocelli, 8 in number. Lappets tongue-shaped, narrow at base, with numerous nematocyst warts upon its external surfaces, 48 in number. 32 radiating reddish brown stripes on surface of exumbrella. Gonads not developed.

Remarks. *Dactylometra quinquecirrha* is similar to *Chrysaora melanaster* in having 8 sense organs and 8 radial sectors, but it is readily distinguished from latter by having 24 tentacles and 32 marginal lappets. Mayer (1910) noted that the genera *Chrysaora, Dactylometra* and *Kuragea* may be transitional stages in the growth of one and the same medusa.

Distribution. Korea, Japan, Kamchatka to California, southern coast of New England to the tropics, Florida (Tampa Bay), Bermuda, North Carolina (Beaufort).

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관해파리목(히드라충강)과 기구해파리목(헤파리강)의 한국 미기록 2종

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요 약

후포의 연안에서 채집된 푸른우산관해파리(*Porpita umbella*)와 거제도의 연안에서 채집된 커튼원양해파리(*Dactylometra quinquecirrha*)가 각각 한국 미기록종으로 판명되어 재기재하여 보고한다. 푸른우산관해파리의 부유기는 연한 갈색의 둥글고 납작한 단추 모양이고 촉수, 개충 그리고 우산의 테두리는 푸른색을 띤다. 커튼원양해파리는 긴 커튼과 같은 신축성 있는 4개의 구엽을 가지고 있다. 관해파리류는 우리나라에서 처음 보고되고 해파리류는 본 연구 결과 3종이 보고된다.