

First Record of Two Scyphomedusae (Cnidaria, Scyphozoa) in Korea

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ABSTRACT

Some scyphomedusae were collected from the coasts of Busan (Gijang), Geojedo Island(Jangmok-ri) and Samcheok during the period from June 1989 to May 1999. They were identified into *Stenoscaphus inabai* of Stauromedusae and *Aurelia aurita* in Semaestomeae. They are first recorded in Korea.

Key words: Taxonomy, scyphomedusae, Korea

INTRODUCTION

The scyphomedusae are generally larger than hydromedusae, and the medusa is dominant individual in the life cycle. Most are floating in the open sea but the one order, Stauromedusae is sessile. More than 200 species of scyphozoans were described from around the world oceans (Ruppert and Barnes, 1994), but any species so far were never recorded from Korean waters.

Some scyphomedusae were collected with nylon scape nets and hands from the coasts of Busan (Gijang), Geojedo Island(Jangmok-ri) and Samcheok during the period from June 1989 to May 1999. They were preserved in 5% neutral formalin solution after narcotization with menthol powders.

The specimens were identified into *Stenoscaphus inabai* of Stauromedusae and *Aurelia aurita* in Semaestomeae on the basis of the morphological characters. They are first recorded in Korea.

The redescrptions and illustrations on them are given.

SYSTEMATIC ACCOUNTS

Class Scyphozoa 해파리강

Order Stauromedusae 십자해파리목

Family Eleutherocarpidae 자유손목해파리과(신칭)

***Stenoscyphus inabai* (Kishinouye, 1893) 좁은겹해파리 (신칭) (Fig. 1A-D)**

Depastrum inabai Kishinouye, 1893, p. 416.

Stenoscyphus inabai: Kishinouye, 1902, p. 1, pl. 1, figs. 1-2; Mayer, 1910, p. 525, fig. 334; Uchida, 1929, p. 107, pl. 1, figs. 1-8, pl. III, figs. 1-2; Kramp, 1961, p. 296; Naumov, 1961, p. 85, figs. A, B, γ , δ .

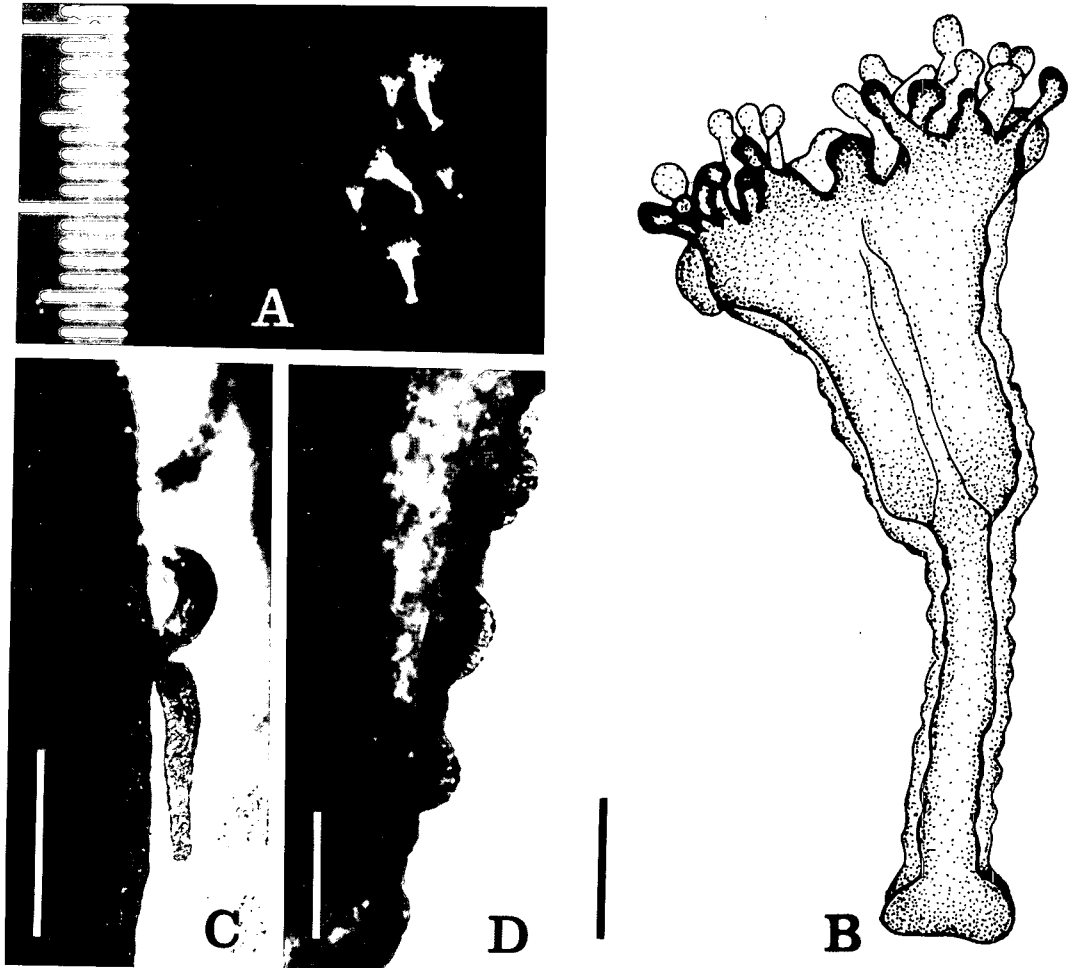


Fig. 1. *Stenoscyphus inabai*. A, individual medusae; B, medusa showing bell, stalk and adhesive disc; C, gastric filaments in stomach cavity; D, battery cells on external surface. Scale unit = mm (A), scale bars = 0.06 mm (C), 0.5 mm (B, D).

Material examined. Busan(Gijang), 18 Mar. 1998, H. S. Ko.

Description. Medusa small, below 5 mm in height, attached on seaweeds, composed of bell, stalk and adhesive disc. Bell elongate, funnel-shaped, margin somewhat quadrate, with 4 paired lobes, each lobe with a cluster of 4-8 capitate tentacles, arranged in radial rows, variable in number according to age, and with 8 adhesive anchors. First tentacles larger than secondary one. Anchor kidney-shaped, with short and thick stalk, and located one in each radius and interradius. Mouth expanded, with 4 pleated lips, and located in lower than bell margin. Stomach cavity long, with gastral filaments arranged in two rows in each interradius. Battery cells distributed on exumbrella and surface of stalk. Stalk somewhat quadrate, 4-chambered and with well developed interradial

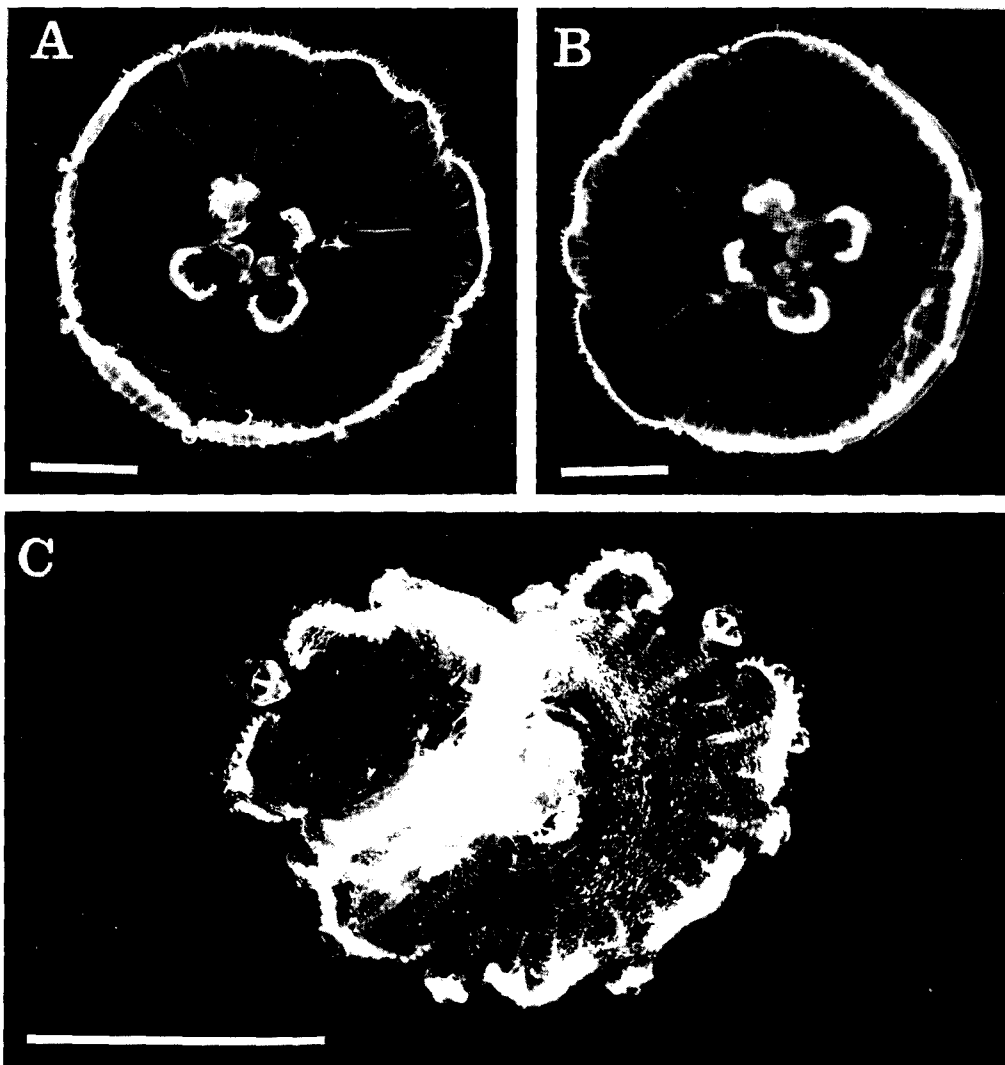


Fig. 2. *Aurelia aurita*. A, oral view of adult medusa; B, aboral view of adult medusa; C, aboral view of young medusa with rhopalia. Scale bars = 5 mm (C), 10 mm (A, B).

muscle, its length variable according to age and relatively longer in young species. Adhesive disc widened, flattened and round, but constricted in 4 interradii.

Remarks. It seems that the specimens from Korean waters are young since they have no gonads and smaller than those of Kishinouye (1902) and Uchida (1929). According to them gonads

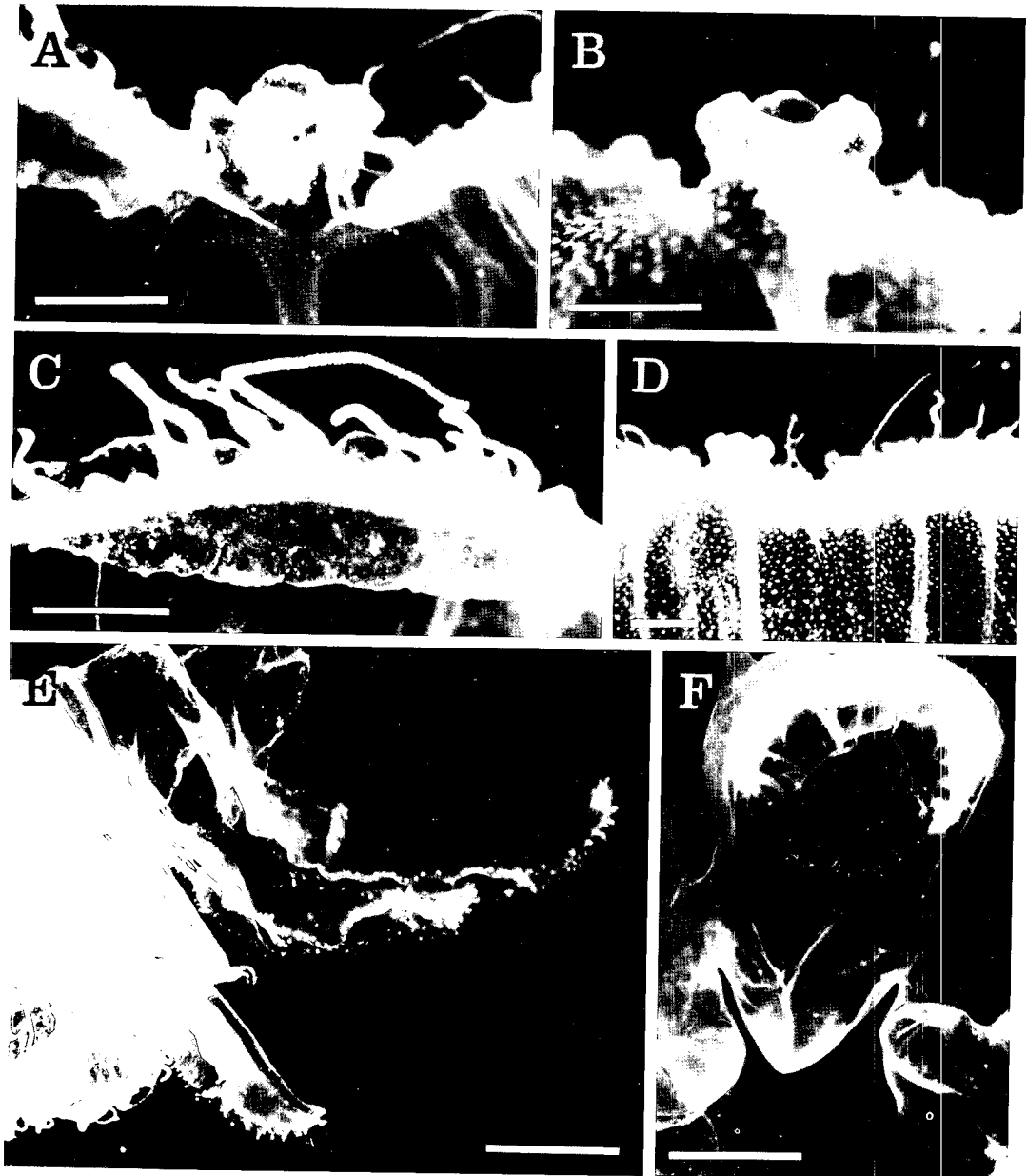


Fig. 3. *Aurelia aurita*. A, Aboral view of rhopalium; B, oral view of rhopalium; C, marginal tentacles and velum-like structure; D, surface of exumbrella; E, frilly oral lobes with nematocysts; F, degenerated oral lobes and gastric pouch with short tentacles. Scale bars = 1 mm (A-F).

arrange in 4 pairs of longitudinal rows in each interradius, extending from near the bell margin to the base of the stomach cavity.

Distribution. Korea, Japan, China.

Order Semaestomeae 기구해파리목

Family Ulmaridae 느릅나무해파리과 (신칭)

***Aurelia aurita* (Linnaeus, 1758)** 보름달물해파리 (신칭) (Figs. 2A-C, 3A-F)

Aurelia fraividula: Agassiz, L., 1862, p. 10, 12, 51, 160.

Aurelia aurita colpota: Maas, 1903, p. 26, taf. 1, fig. p.

Aurelia aurita: Browne, 1901, p. 90, figs. 1-3; Vanhoffen, 1906, p. 60, figs. 27-31; Kramp, 1924, p. 53, fig. 38; Krumbach, 1928, p. 181, figs. 17-25; Uchida, 1954, p. 210; Vannucci, 1958, p. 595; Kramp, 1961, p. 337; Spangenberg, 1965a, p. 303, figs. 1-9; Spangenberg, 1965b, p. 1, figs. 1-4; Thiel, 1971, p. 79, pl. 1, figs. 1-4, pl. 2, figs. 5-8.

Aurelia aurita: Mayer, 1910, p. 623, pl. 67, fig. 4, pl. 68, figs. 1-4; Mayer, 1917, p. 204.

Material examined. Samcheok, 29 Jun. 1989, J. H. Park; Geojedo Island (Jangmok-ri), 5 May 1999, W. J. Lee.

Description. Bell shallow, flatter than hemisphere, 40-110 mm wide, gelatinous substance (mesoglea) thick at center but thin at margin, with nematocysts on entire surface of exumbrella. Bell margin scalloped into 8 partitions and with 8 notches in regular interval. Each notch with a rhopalium and a pair of lobe-like projections (lappets), rhopalium with an ocellus. Marginal tentacles numerous, small and armed with nematocysts. Mouth centered on subumbrellar side. In normal specimens manubrium usually drawn out into 4 frilly oral lobes with nematocysts. Stomach divided into 4 gastric pouches containing small tentacles. Velum-like structure lying below marginal tentacles. With 4 perradial-, 8 adradial- and 4 interrarial canals and a ring canal. In normal type each perradial canal with a strait canal running direct from stomach to rhopalium, and strait canal gives off two opposite branches, each of which subdivided into many lateral branches entering to ring canal. Lateral branches opposite in common but often not opposite each other. Adradial canal always simple, unbranched, and never run to rhopalium. Interrarial canal branched like perradial one. Gonads developed in gastric pouches.

Table 1. Morphological variations of characters of Korean specimens according to the bell diameter.

| Character | Diameter of bell (in mm) | | | |
|-------------------|--------------------------|--------------------|--------------------|-----------------------|
| | 10 | 20 | 40 | 110 |
| gastric pocch | incomplete | incomplete | complete | partially degenerated |
| radial canal | unbrached | partially branched | branched | branched |
| marginal tentacle | developed but incomplate | well developed | well developed | degenerated |
| oral lobe | well developed | well developed | degenerated | degenerated |
| mesoglea | thin | thin | more or less thick | more or less thick |
| gonad | undeveloped | developed | developed | partially degenerated |
| rhopalium | 8 well developed | 8 well developed | 8 well developed | partially degenerated |

Remarks. *A. aurita* has the greatest morphological variation of aurelian species (Mayer, 1910). The morphological variations of characters according to the bell diameter are shown in Table 1.

Distribution. World-wide distribution.

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요 약

부산(기장), 거제도(장목리) 및 삼척에서 1989년 6월부터 1999년 5월까지 채집한 해파리는 십자해파리목(Stauromedusae)의 좁은컵해파리(*Stenoscyphus inabai*)와 기구해파리목(Semaeostomeae)의 보름달물해파리(*Aurelia aurita*)로 동정 분류되었다. 이들은 우리 나라 해역에서 처음으로 보고된다.