

Four Athecate Hydroids from Korean Waters

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ABSTRACT

Four athecate hydroids in 4 families from Chakyakto, Anmyōndo and Yokchido are described as new to the Korean fauna: *Rhizogeton fusiformis* L. Agassiz, 1862 in Clavidae; *Stylactaria reticulata* Hirohito, 1988 in Hydractiniidae; *Pertigonimus serpens* Allman, 1863 in Bougainvilliidae; *Hydrocoryne miurensis* Stechow, 1907 in Hydrocorynidae. Of which the family Hydrocorynidae is reported for the first time in Korean waters.

Key words: athecate hydroids, taxonomy, Korea

INTRODUCTION

The comprehensive taxonomic accounts on the Korean marine hydroids to date have been by previous several authors (Kamita and Sato, 1941; Rho, 1967; 1969; Rho and Chang, 1972; 1974; Rho and Park, 1979; 1980; 1983; 1984; 1986; Park and Rho, 1986; Park, 1988; 1990; 1991; 1992; 1993; 1995). The Korean hydroid fauna identified by them so far consists of 125 species or subspecies in 17 families, of which 13 species of nine families are athecate hydroids. They are listed in below, with the species of each family in parenthesis. Clavidae (*Turritopsis nutricula*), Ptilocodiidae (*Hydrichthella epigorgia*), Solanderiidae (*Solanderia misakinensis*, *S. secanda*), Hydractiniidae (*Hydrissa sodalis*), Bougainvilliidae (*Bimeria vestita*), Eudendriidae (*Eudendrium capillare*, *E. carneum*, *E. insigne*, *E. tenellum*), Corynidae (*Coryne pusilla*), Spaerocorynidae (*Spaerocoryne bedoti*), Tubulariidae (*Tubularia mesembryanthemum*).

Some athecate hydroids were collected from shallow waters of Chakyakto, Anmyōndo and Yokchido of Korea during from May, 1985 to April, 1996. They were identified into 4 species in 4

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families: *Rhizogeton fusiformis*, *Stylactaria reticulata*, *Perigonimus serpens*, *Hydrocoryne miurensis*. So that the athecate hydroids which were reported up to date contains 17 species in 10 families. The brief redescrptions and figures for them are given. The drawings were made with camera lucida and measurements of body portions were done with ocular micrometer.

SYSTEMATIC ACCOUNTS

Class Hydrozoa 히드라충 강

Order Athecatae 민컵히드라충 목

Family Clavidae 진곤봉히드라과

1. ***Rhizogeton fusiformis* L. Agassiz, 1862** 방추곤봉히드라 (신칭) (Fig. 1A-D)

Rhizogeton fusiformis L. Agassiz, 1862, p. 224, 347, pl. 20, figs 17-23; Fraser, 1944, p. 35, pl. 1, fig. 3.

Rhizogeton nudum Broch, 1909, p.137, fig. 1; Ritchie, 1910, p. 827, text-fig. 80; Mammen, 1963, p. 34, fig. 3; Millard, 1975, p. 75, fig. 24E; Antsulevich and Polteva, 1986, p. 967, fig. 2; Genzano, 1993, p. 73, figs 1-6.

Rhizogeton ezoense Yamada, 1964, p. 395, fig. 1a, b; Hirohito, 1988, p. 70, fig. 23a, b.

Material examined. Chakyakto, Apr. 17, 1996 (W. J. Lee).

Description. Colonies arising from reticular stolonial hydrorhiza which creeping on oyster shell. Hydrorhiza covered with transparent periderm reached sometimes to proximal portion of hydranth, 0.13-0.17mm in diameter. Hydranth pinkish color in living form, around 5mm in height, tapering distally, with 16-20 filiform tentacles irregularly distributed on distal half of hydranth. Gonophore borne directly on hydrorhiza, ovate or oblong with short pedicel, variable in size, 0.71mm in total length and 0.26mm in maximum diameter. Female gonophores have not been examined.

Distribution outside Korea. Nahant, Atlantic coasts of North America, Arctic (Spitzbergen), Pacific (Christmas Isl.), India, Japan (Sagami bay), South Africa (Mozambique, Inhaca to Santa Carolina), Argentina (Buenos Aires).

Remarks. This species is considered as same species with *R. nudum* of Broch(1909) from Mozambique, South Africa and *R. ezoense* of Yamada (1964) from Muroran, Hokkaido. Broch(1909) distinguished *R. nudum* from *R. fusiformis* in the absence of periderm on the basal portion of hydranth. And Yamada(1964) also distinguished *R. ezoense* from *R. fusiformis* in following points. "The polyps are shorter than *R. fusiformis* in length and the tentacles of hydranth are slender and 20-22 in number, while in *R. fusiformis* they are less slender and the number is 10-12." The male gonophores of *R. nudum* are more oval-shaped than in *R. fusiformis*. However the author examined two types that there are presence and absence of periderm on the basal portion of hydranth. And also it is considered that the size and the number of tentacles are not so good taxonomic characters in lower invertebrates. Recently Antsulevich and Polteva(1986) stated that *R. ezoense* may be a synonym of *R. fusiformis*. The author concur in their opinion with them.

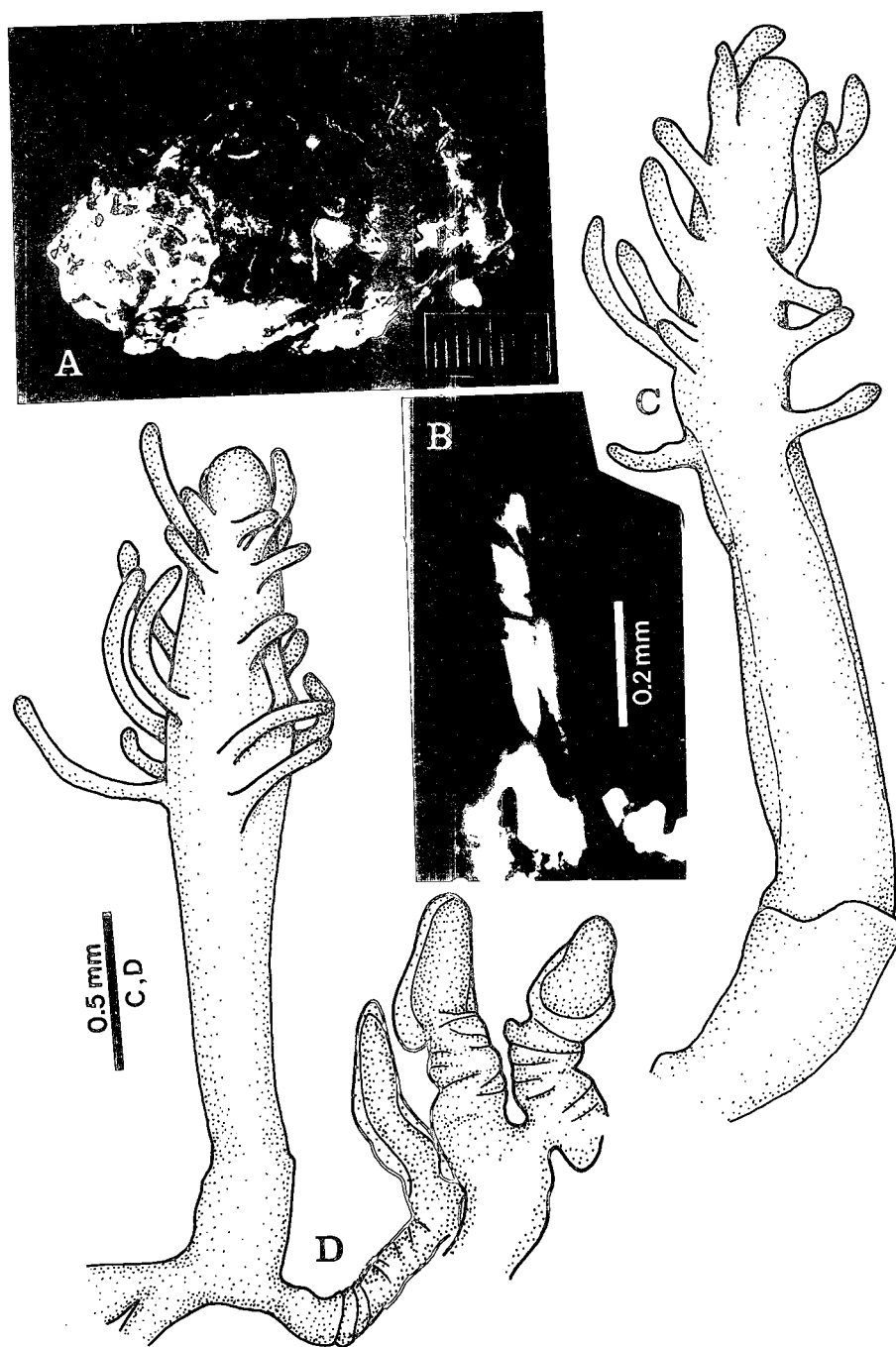


Fig. 1. *Rhizogeton fusiformis*. A, colonies on oyster shell. Scale=1cm; B, photograph of hydranth; C-D, hydranths and male gonophores.

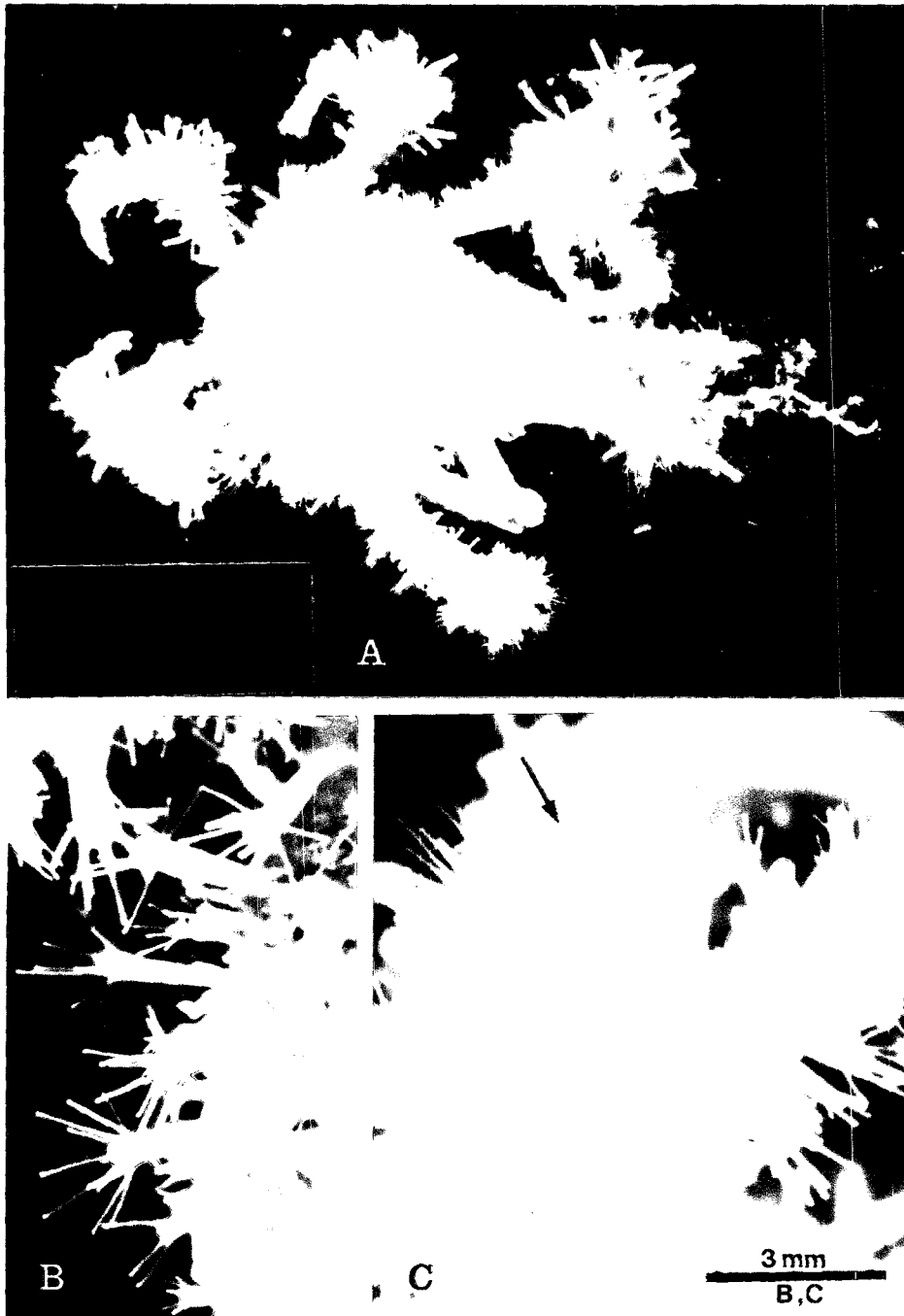


Fig. 2. *Stylactaria reticulata*. A, colonies on body surface of brachyuran. Scale=1cm; B, enlarged slender gastrozooids; C, enlarged thick gastrozooids and female gonozooid. Arrow indicates female gonophore.

Family Hydractiniidae 축히드라 과

2. *Stylactaria reticulata* (Hirohito, 1988) 가시그물히드라 (신칭) (Fig. 2A-C)

Stylactis reticulata Hirohito, 1988. p. 139, fig. 51d-f.

Material examined. Yokchido, Oct. 13, 1995 (H. S. Ko).

Description. Colonies growing on body surface of brachyuran species, *Hyastenus elongatus* (Ortman, 1893) from 10m deep in Yokchido by SCUBA. Hydrorhiza closely reticulated and overlapped forming like a mat. Colonies consist of gastrozooids and gonozooids. Dactylozooids and spines absent. Thick gastrozooids moderately club-shaped in extension conditions after feeding sufficiently, with 4-12 long and short filiform tentacles arranged alternately in a single circlet around base of hypostome, below 3mm in height and around 0.5mm in diameter of thick portions, Slender gastrozooids cylindrical, 5mm in length. Gonozooids far smaller than gastrozooids, one-half or one-third of gastrozooids in size, with 3-5 filiform tentacles arranged in a single circlet, 1-3 gonophores on slightly above the middle of gonozooid.

Distribution outside Korea. Japan (Sagami Bay).

Remarks. The substrata of Hirohito (1988) from Sagami Bay are rock, barnacle shells and bryozoans. While our substratum is brachyuran, *Hyastenus elongatus* from 10m deep. Our specimens differ from that of Hirohito (1988) in the number of tentacles and gonophores of gonozooids. The gonozooids of Hirohito (1988) bear six gonophores and up to 10 filiform tentacles. Stechow (1921) proposed that the new name *Stylactaria* be applied to species of *Stylactis*, with gonophores on gonozooids, if such hydroids were to be recognized as a distinct genus, and designated *Stylactis inermis* Allman, 1872 as type species of the genus. Calder (1988) stated that the genus *Stylactaria* is recognized as the valid name of the genus. In according with Stechow (1921) and Calder (1988)'s proposals, the author replaced *Stylactis* with *Stylactaria*.

Family Bougainvilliidae 보우갠빌히드라 과

3. *Perigonimus serpens* Allman, 1863 작은기느히드라 (신칭) (Fig. 3A, B; Fig. 4A-C)

Perigonimus serpens: Mayer, 1910, p. 109, fig. 59; Ree and Russell, 1937, p. 63, fig. 9; Leloup, 1952, p. 115, fig. 56.

Material examined. Chakyakto, Sep. 27, 1995 (W. J. Lee).

Description. Colony small, below 5mm long, arising from stolonial hydrorhiza. Stem smooth, monosiphonic, not branched and with hydranth distally. Hydranth club-shaped, with eight filiform tentacles in a single whorl around bluntly conical hypostome. Four filiform tentacles outward at right angle and four upward angle of about 30° to length axis of hydranth in living state. No distinct demarcation between hydranth and stem. In living state, hydranth deep reddish orange, hydrocaulus bright reddish orange, but tip of hypostome remaining white color. As colonies grow older, creeping stolonial hydrorhizae anastomosed to form open network (Fig. 3A). Gonophores arising from stolon, bulbous-shaped, with short pedicels and liverating small medusae (Fig. 4B).

Distribution outside Korea. Plymouth (U. K.), Belgium.

Remarks. This species is similar with *P. minutus* of Mayer (1910) in the shape of hydranth and colony. However *P. serpens* is distinguished from *P. minutus* in that the gonophore of *P. serpens* arise from stolonial hydrorhiza, while the one of *P. minutus* from from stem.

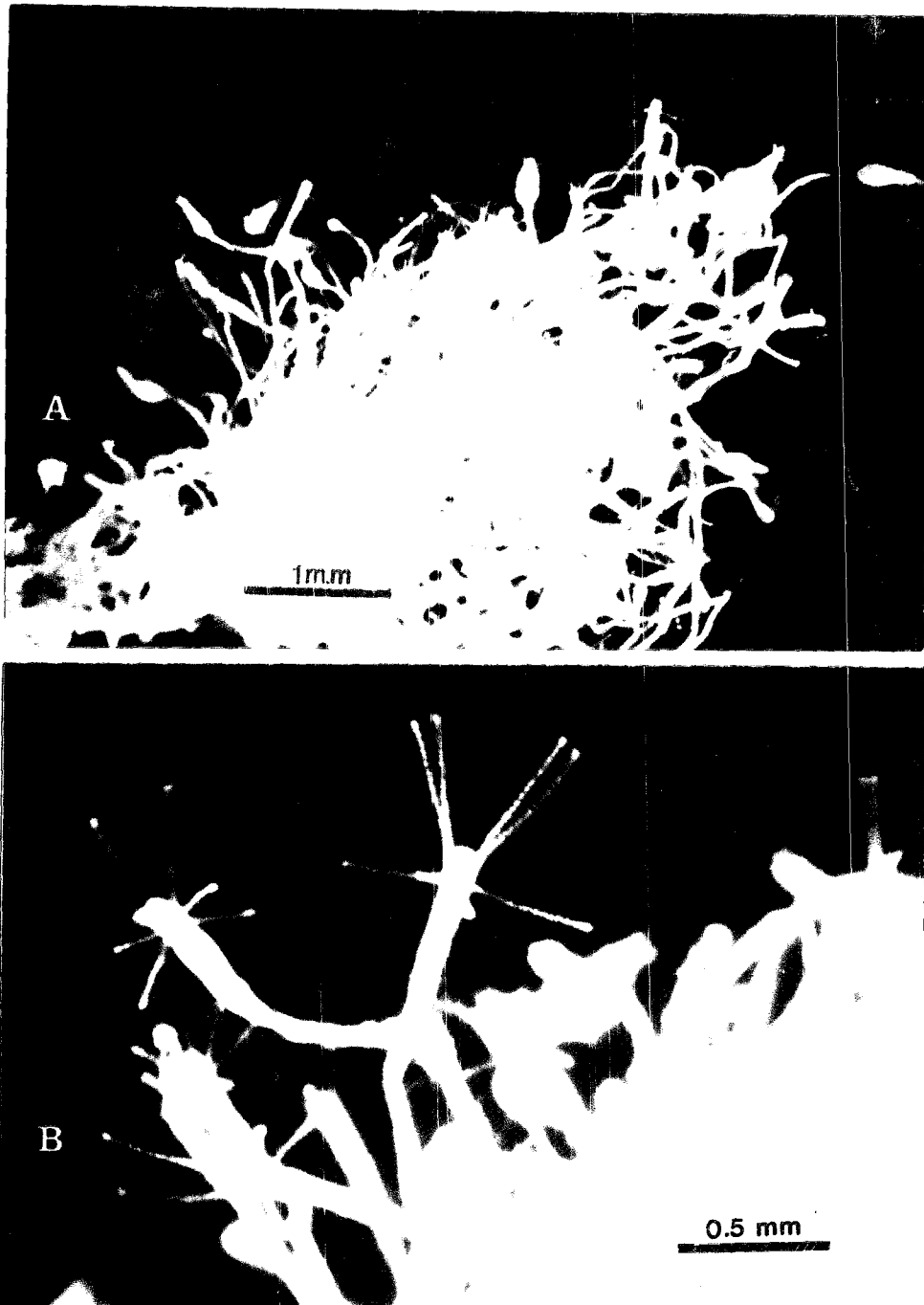


Fig. 3. *Perigonimus serpens*. A, stolons anastomosed to form open network; B, enlarged hydranths with filiform tentacles.

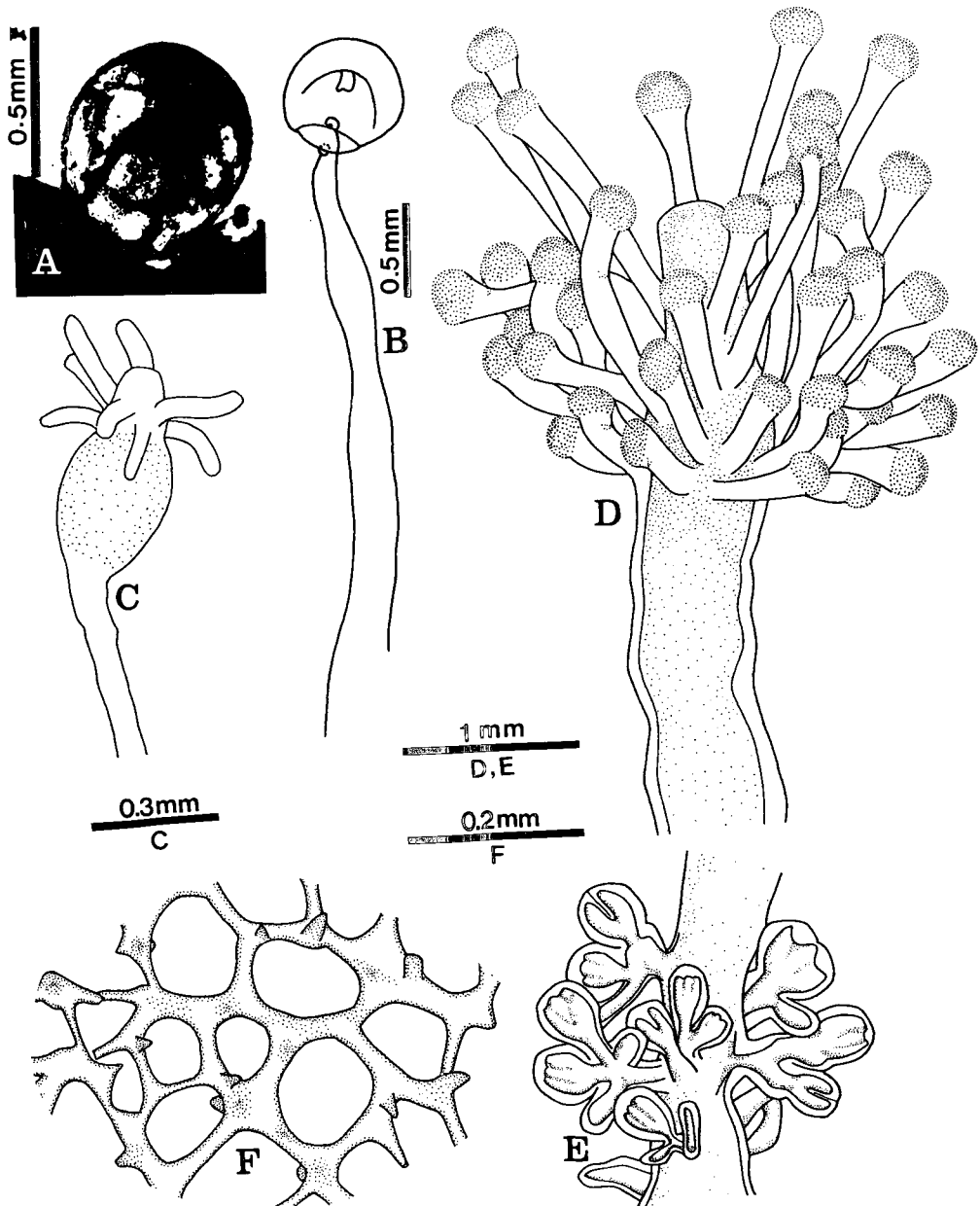


Fig. 4. *Perigonimus serpens*. A, gonophore on stolon; B, medusa; C, retracted hydranth. *Hydrocoryne miurensis*, D, enlarged hydranth with capitata tentacles; E, blastostyles with gonophores on proximal part of stem; F, hydrorhizal plate consists of chitinous reticular skeleton.

Family Hydrocorynidae 물곤봉히드라 과(신칭)

4. *Hydrocoryne miurensis* Stechow, 1907 새로줄물곤봉히드라 (신칭) (Fig. 4C-F)

Hydrocoryne miurensis: Stechow, 1907, p. 193; Stechow, 1909, p. 35, pl. 3, figs. 1-3, pl. 5, figs. 1-4; Stechow, 1923, p. 2; Uchida and Nagao, 1967, p. 197, figs. 1-11; Hirohito, 1988, p. 44, fig. 13a, b, c.

Material examined. Anmyŏndo (Panpŏhaesuyokchang), May 14, 1985 (B. J. Rho).

Description. Colonies attached on rocks, below 5cm long, arising from hydrorhizal plate which consists of dark brown chitinous reticular skeleton (Fig. 4F). Stem smooth, not branched covered with somewhat thick periderm, tapering proximally, about 2mm wide in upper portion and about 1mm wide in proximal portion, with longitudinal rows on surface of stem, with hydranth distally. Hydranth cylinder shaped, with conical hypostome and about 40 capitate tentacles arranged in 5-6 alternate whorls below hypostome. Blastostyle arising from proximal portion of stem, bearing clusters of gonophores.

Distribution outside Korea. Japan (Sagami Bay).

Remarks. This species is very similar with *Spaerocoryne bedoti* of Park (1991) from Korea in the shape of hydranth and stem. However *S. bedoti* has gonophores on hydranth, no longitudinal rows on the surface of stem and stolonial hydrorhiza creeping under the sponges.

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요 약

우리 나라의 작약도, 안면도, 옥지도에서 채집된 한국미기록 민첩히드라충류 4종을 재기재하였다: 진곤봉히드라 과(*Clavidae*)의 방추곤봉히드라 (*Rhizogeton usiformis*), 축히드라 과(*Hydractiniidae*)의 가시그물히드라 (*Stylactaria reticulata*), 보우갠빌히드라 과(*Bougainvilliidae*)의 작은기는히드라 (*Perigonimus serpens*) 그리고 물곤봉히드라 과(*Hydrocorynidae*)의 세로줄 물곤봉히드라 (*Hydrocoryne miurensis*). 이 중 물곤봉히드라 과는 우리 나라에서 처음으로 알려지는 과이다.