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Hydroids (Cnidaria: Hydrozoa: Hydroidida) from Chindo Island, Korea

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ABSTRACT

The joint faunal survey of Chindo Island were made in commemoration of the 10th anniversary of the Korean Society of Systematic Zoology during July 22-26, 1994. The materials collected were identified to 31 species in eight families, of which eight species were previously known and the remainders were newly recorded from Chindo Island. *Halecum magellanicum* and *Obelia flexuosa* are new to the Korean fauna.

Adding three previously known species, which were not examined in this work, to the above results, the hydroids recorded from Chindo Island so far consist of 34 species in eight families.

Key words: Hydroids, Chindo Island, Korea

INTRODUCTION

The joint faunal servey of Chindo Island were undertaken in commemoration of the 10th anniversary of the Korean Society of Systematic Zoology during July 22-26, 1994. By this survey the rich collections of hydroids were made by the author and others.

The Chindo Island is located in the southwestern tip of the Korean Peninsula, between the 125° 37' ~126°28' E and the 34°08' ~34°35' N, where is influenced by warm waters, driven from the Kuroshio. So that the hydroid fauna of Chindo Island consists mostly of tropical forms.

Up to date eleven species of hydroids were recorded from Chindo Island by Park and Rho (1986) and Rho and Park (1986). Twenty three species are newly recorded from Chindo Island. Of which *Halecum magellanicum* and *Obelia flexuosa* are new to the Korean fauna. The descriptions with figures for these two species are given and the previous known species examind/unexamind in this work are investigated for the hydroid fauna of Chindo Island.

SYSTEMATICS

The asterisks (* , ** , ***) indicate the species identified in this work. * is the previous records; ** the new records in Chindo Island; *** the new records in Korean waters.

Order Hydroida 히드라총목

Suborder Arthecata 민컵 히드라총아목

Family 1. Bougainvilliidae 보우겐빌 히드라과

****1. *Bimeria vestita* Wright, 1859** 덮개히드라

Previous records in Korea. Rho and Park, 1983 (Chakyakto); Park, 1990 (Chakyakto).

Material examined. 126°16' -20' E, 34°21' -23' N, 23 July 1994.

Family 2. Eudendriidae 꽃히드라과

****2. *Eudendrium capillare* Alder, 1856** 털꽃 히드라

Previous records in Korea. Rho and Park, 1983 (Chakyakto); Park, 1990 (Sogwip'o); Park, 1991 (Chakyakto); Park, 1993 (Supto).

Material examined. 126°16' E, 34°21' N, 23 July 1994; Hoedong, 25 July 1994.

Family 3. Tubulariidae 관히드라과

****3. *Tubularia mesenbryanthemum* Allman, 1872** 관히드라

Previous records in Korea. Rho, 1969 (Taehaksando); Park, 1990 (Soch'on).

Material examined. Hoedong, 25 July 1994; Chopto, 23 July 1994.

Suborder Thecata 컵 히드라총아목

Family 4. Haleciidae 무늬 히드라과

****4. *Halecium beanii* (Johnston, 1838)** 둥근무늬 히드라

Previous records in Korea. Park, 1990 (Sogwip'o, Hoenggando, Mip'o); Park, 1991 (Sogwip'o).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

****5. *Halecium delicatulum* Coughtrey, 1876** 매혹무늬 히드라

Previous records in Korea. Rho and Park, 1983 (Sogwip'o); Park, 1993 (Supto).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

*****6. *Halecium magellanicum* (Hartlaub, 1905)** 마젤란무늬 히드라(신칭) (**Figs. 1A-D**)

Plumularia magellanicum Hartlaub, 1905, p. 684, figs. N5, D5.

Halecium magellanicum: Linko, 1911, p. 15, fig. 2; Yamada, 1950, p. 6, pl. 1, figs. 3, 4; Yamada, 1959, p. 34.

Material examined. Chopto, 23 July 1994.

Description. Colony small, below 10 mm in height, arising from rather thick stolon creeping on sea weed or *Mytilus* shells. Stem not fascicled, with one to three annulations in proximal, divided into

regular internodes, 0.09-0.10 mm in diameter, 0.31-0.40 mm in length on nodes, each of which bearing a short branches or hydrothecal pedicel. Branches from apophysis, alternate on stem, usually irregular segmented, giving to a hydrotheca in distal end, sometimes giving off secondary branches on distal end of hydrothecal pedicels. Hydrotheca cup shaped, 0.08-0.11 mm in height, 0.13-0.15 mm in margin, 0.07 mm in diameter of base, with long hydrothecal pedicel (0.09-0.11 mm). Gonangium from hydrorhiza and stems, 0.62-0.63 mm in length, 0.16-0.17 mm in margin, with corrugations on gonothecal wall, truncated distal end and with short smooth pedicel.

Remarks. Branches are variable in length and structure. Some ones consist of one short segment and the others several segments which are irregular in length with one another.

Distribution. North polar regions of the world and Japan (Akkeshi Bay).

****7. *Halecium tenellum* Hincks, 1861** 연한무늬하드라

Previous records in Korea. Rho and Chang, 1974 (Sōgwip'o, Anmyōndo); Park, 1993 (Mundo).

Material examined. 126°10' -21' E, 34°19' -23' N, 23 July 1994.

****8. *Hydrodendron gardineri* (Jarvis, 1922)** 가드너무늬하드라

Previous records in Korea. Park, 1991 (Sōgwip'o).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

Family 5. Lafoeidae 바위불이하드라과

****9. *Filellum serratum* (Clarke, 1879)** 톱니실하드라

Previous records in Korea. Rho and Chang, 1974 (Yōsu, Anmyōndo, Chakyakto); Park, 1990 (Mip'o, Kyōkpō-ri); Park, 1991 (Sōgwip'o, Sangch'ujado); Park, 1993 (Mundo).

Material examined. 126°16' E, 32°21' N, 23 July 1994.

****10. *Lafoëa fruticosa* (M. Sars, 1851)** 덤불바위불이하드라

Previous records in Korea. Rho and Chang, 1974 (Supto, Sōgwip'o, Yōsu, Wimi-ri); Park, 1990 (Mip'o, Nohwado, Sōgwip'o, Ch'ōnsando, Piyangdo, Kapádo); Park, 1991 (Sōgwip'o, Cheju harbour, Ullingdo); Park, 1993 (Mundo).

Material examined. 126°10' -16' E, 34°19' -21' N, 23 July 1994.

Family 6. Campanulariidae 종하드라과

****11. *Eucopella crenata* (Hartlaub, 1901)** 주걱하드라

Previous records in Korea. Rho and Park, 1980 (Sōgwip'o, Kōmundo, Sōngsanpō); Park, 1990 (Taehüksando, Sōgwip'o).

Material examined. Chōpto, 23 July 1994.

****12. *Obelia bicuspidata* (Clarke, 1875)** 쌍뾰족혹하드라

Previous records in Korea. Rho and Park, 1980 (Chakyakto); Rho and Park, 1983 (Komso, Chakyakto, Taehüksando); Park, 1990 (Öch'ōngdo, Mip'o, Samch'ōnp'o); Park, 1993 (Mundo).

Material examined. Chōpto, 23 July 1994.

*****13. *Obelia flexuosa* (Hincks, 1861)** 굴곡혹하드라(신칭) (**Figs. 1E-H**)

Laomedea flexuosa Hincks, 1861, p. 260.

Campanularia flexuosa: Hincks, 1868, p. 168; Nutting, 1915, p. 45, pl. 7, figs. 1-6.

Obelia flexuosa: Naumov, 1960, p. 266, fig. 154.

Material examined. Yongho-ri, 25 July 1994.

Description. Colony small, below 10 mm in height. Stem not fascicled, slightly flexuous, sometimes branched, divided into regular internodes. Each internode annulated on proximal ends, 5-8 annuli and with a distal apophysis alternately, which bears hydrotheca. Hydrotheca typical funnel-shaped and margin smooth, distinct intrathecal diaphragm, hydrothecal pedicel annulated throughout or usually middle part of pedicel smooth, 0.27-0.30 mm in total length, 0.19-0.26 mm in width of margin, 0.05-0.07 mm in width of base. Gonangium arising on hydrothecal pedicel or distal apophysis of stem, with annulated pedicel, cylinder-shaped, above truncated, 0.53-1.05 mm in length, 0.22-0.27 mm in maximum width. Gonothecal pedicel short, annulated throughout, 0.12-0.22 mm in length, 0.06-0.07 mm in width.

Remarks. The number of annulation on the base of each internode of stem, hydrothecal pedicel and gonothecal pedicel are variable.

Distribution. New England coast (America), British Islands, Norway, Iceland, Denmark, Helgoland, France, Mediterranean, Morocco, Baltic, Barents and White seas.

****14. *Obelia longissima* (Pallas, 1776)** 긴혹하드라

Previous records in Korea. Rho and Park, 1980 (Taehaksando, Yosu); Park, 1990 (Taejin, Chumunjin, Imwon).

Material examined. Kimgaphaesuyokchang, 23 July 1994.

****15. *Rhizocaulus chinensis* Marktanner-Turneretscher, 1890** 뿌리하드라

Previous records in Korea. Rho and Park, 1980 (Ullungdo, Mip'o, Chakyakto); Park, 1990 (Och'ongdo, Mip'o, Changho, Samch'önp'o); Park, 1993 (Mundo).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

Family 7. Sertulariidae 테하드라과

****16. *Amphisbetia pacifica* Stechow, 1931** 태평양테하드라

Previous records in Korea. Kamita and Sato, 1941 (Inch'ön harbour); Rho, 1967 (Sogwip'o, Wimi-ri, Yosu, Anmyondo, Piin); Park and Rho, 1986 (Sogwip'o, Chindo <Hoedong, Chöpto>, Kyökp'o-ri, Mokto, Taech'ön, Yejako); Park, 1990 (Chumunjin, Imwon); Park, 1993 (Supto).

Material examined. Hoedong, 25 July 1994.

****17. *Diphasia palmata* Nutting, 1905** 넓은입하드라

Previous records in Korea. Rho and Chang, 1972 (Sogwip'o); Rho and Chang, 1974 (Chodo, Supto, Sogwip'o, Anmyondo); Rho and Park, 1986 (Sogwip'o, Pomong-ri, Mipó); Park, 1990 (Mip'o, Sogwip'o); Park, 1993 (Mundo).

Material examined. 126°10' -16' E, 34°19' -21' N, 23 July 1994.

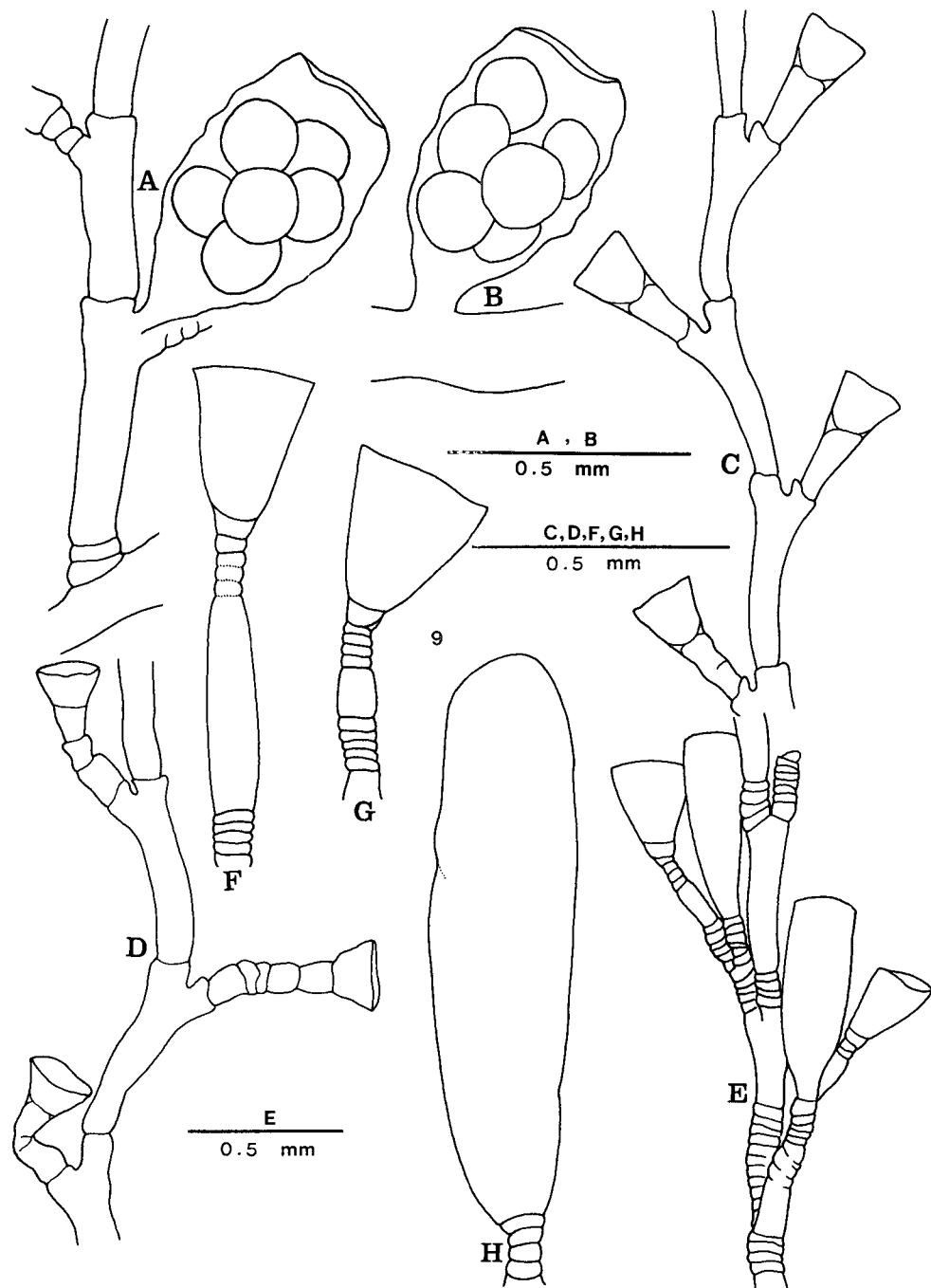


Fig. 1. A-D. *Halecium magellanicum*: A, gonangium from stem; b, gonangium from hydrorhiza; C, D, parts of colonies with hydrothecae. E-H. *Obelia flexuosa*: E, part of colony with hydrothecae and gonangia; F, G, enlarged hydrothecal pedicels with hydrothecae; H, enlarged gonangium.

***18. *Dynamena crisioides* Lamouroux, 1824 민테하드라**

Previous records in Korea. Rho, 1967 (Sōgwip'o); Rho, 1969 (Haeundae, Mijo-ri, Kangnūng); Rho and Chang, 1972 (Sasudo, Hoenggando); Rho and Chang, 1974 (Sōgwip'o, Udo, Yundoldo, Kōjedo, Sangju-ri); Park and Rho, 1986 (Mokto, Chindo <Hoedong, Chōpto>, Yōnhwado, Udo, Wando, Shinhūng-ri); Park, 1990 (Kūm-odo).

Material examined. Kūmgaphaesuyokchang, 23 July 1994.

19. *Pasythea nodosa* Hargitt, 1908 층쌍컵하드라

Previous records in Korea. Park and Rho, 1986 (Chindo <Hoedong>, Kuryongpó, Mundo, Sōgwip'o).

****20. *Selaginopsis triserialis* Mereschkowsky, 1878 비단테하드라**

Previous records in Korea. Park and Rho, 1986 (Kyōng-yōlbīyōldo, Mip'o, Taech'ön).

Material examined. 126°10' E, 34°19' N, 23 July 1994.

****21. *Sertularella gayi* Lamouroux, 1827 가이테하드라**

Previous records in Korea. Park and Rho, 1986 (Chakyakto); Park, 1990 (Mip'o, Ch'ōngsando).

Material examined. 126°10' -16' E, 34°10' -21' N, 23 July 1994.

****22. *Sertularella gotoi* Stechow, 1931 고또테하드라**

Previous records in Korea. Rho and Chang, 1974 (Yōsu, Sōgwip'o, Anmyōndo); Park and Rho, 1986 (Anmyōndo, Mip'o, Toch'ōng-ri, Ullūngdo); Park, 1990 (Mip'o, Ch'ōngsando, Chumunjin).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

23. *Sertularella levigata* Stechow, 1931 민테하드라

Previous records in Korea. Park and Rho, 1986 (Mijodo, Mip'o, Chindo <Hoedong, Nokchin>, Sōgwip'o, Ōch'ōngdo, Sōngsanp'o, Yesong-ri, Sangju-ri, Pohang, Samch'ōnp'o).

***24. *Sertularella miurensis* Stechow, 1921 가로테하드라**

Previous records in Korea. Rho, 1967 (Sōgwip'o, Tolsando, Taehūksando); Rho, 1969 (Tolsando, Haeundae, Mijo-ri, Nodo, Kuryongp'o); Rho and Chang, 1974 (Sōgwip'o, Piin, Ōch'ōngdo, Wimi-ri, Kamp'o, Odongdo, Yōsu, Anmyōndo, Sokch'o); Park and Rho, 1986 (Sōgwip'o, Kōjedo, Anmyōndo, Haeundae, Mijodo, Sangju-ri, Mokto, Chindo <Hoedong, Chōpto>, Sōngsanp'o, Kōkpō-ri, Komsø, Pōmdo, Yōsōdo, Mip'o, Taech'ön, Pijindo, Kūndōk); Park, 1990 (Ōch'ōngdo, Ullūngdo, Taejin, Chumunjin, Samch'ōk, Imwon, Sokch'o).

Material examined. Chōpto, 23 July 1994; Haedong, 25 July 1994; Kunp'o, 25 July 1994.

***25. *Sertularella obtusa* Stechow, 1931 무딘테하드라**

Previous records in Korea. Park and Rho, 1986 (Anmyōndo, Chindo <Hoedong>, Taehūksando, Sōgwip'o); Park, 1990 (Naksan, Chukpyōn); Park, 1993 (Mundo).

Material examined. Hoedong, 25 July 1994.

****26. *Sertularella sinensis* Jäderholm, 1896** 그물테하드라

Previous records in Korea. Rho and Chang, 1974 (Sōgwip'o, Yōsu); Park and Rho, 1986 (Cheju harbour, Mip'o, Sōgwip'o, Supto, Pusan harbour, Toch'ōng-ri, Pōndo); Park, 1990 (Mip'o, Chumunjin).

Material examined. 126°16' E, 34°21' N, 23 July 1994; Kūmgaphaesuyokchang, 23 July 1994.

***27. *Sertularia densa* Stechow, 1919** 빠빠화관하드라

Previous records in Korea. Rho and Park, 1983 (Odongdo); Park and Rho, 1986 (Hoenggando, Yōsu, Piin, Chindo <Chōpto>); Park, 1993 (Mundo, Supto).

Material examined. Hoedong, 25 July 1994.

28. *Symplectoscyphus hozawai* Stechow, 1931 호자와테하드라

Previous records in Korea. Park and Rho, 1986 (Mip'o, Chindo <Hoedong, Chōpto>, Supto, Yōnhwado, Yejakto, Taedundo).

Family 8. Plumulariidae 깃 히드라과

****29. *Aglaophenia suensonii* Jäderholm, 1896** 주발깃하드라

Previous records in Korea. Rho, 1967 (Sōgwip'o); Rho, 1969 (Tolsan, Yokchido); Rho and Chang, 1972 (Sasudo, Sōgwip'o, Pōndo, Chigwido); Rho and Chang, 1974 (Chodo, Supto, Sōgwip'o, Wimi-ri); Rho and Park, 1986 (Kuryongp'o, Haeundae, Mip'o, Sōgwip'o, Yokchido, Ch'ungmu, Haegūmgang, Samch'ōnp'o, Taep'o).

Material examined. 126°16' E, 34°21' N, 23 July 1994.

***30. *Aglaophenia whiteleggei* Bale, 1888** 흰깃히드라

Previous records in Korea. Kamita and Sato, 1941 (Inch'ōn harbour); Rho, 1969 (Mijo-ri, Yokchido); Rho and Chang, 1972 (Hoenggando, Sōgwip'o); Rho and Chang, 1974 (Piin, Yōsu); Rho and Park, 1986 (Supto, Sōgwip'o, Mip'o, Ch'ōllip'o, Chindo <Chōpto>, Yōng-ilman, Hongdo <Yellow Sea>, Nohwado, Taedundo, Samch'ōnp'o, Pōhang, Mosūlp'o, Tōkchōkto); Park, 1990 (Mip'o); Park, 1993 (Mundo, Supto).

Material examined. Kūmgaphaesuyokchang, 23 July 1994; Kunp'o, 25 July 1994; 126°10' E, 34°19' N, 23 July 1994.

***31. *Antennella secundaria* (Gmelin, 1789)** 둘째깃히드라

Previous records in Korea. Rho, 1967 (Sōgwip'o); Rho and Chang, 1972 (Sōgwip'o, Chakyakto, Anmyōndo); Rho and Park, 1986 (Sōgwip'o, Chindo <Hoedong, Chōpto>, Kuryongp'o, Chakyakto, Yokchido, Hongdo <South Sea>, Yejakto); Park, 1990 (Ch'ōllip'o, Sōgwip'o); Park, 1993 (Mundo).

Material examined. 126°10' -16' E, 34°19' -21' N, 23 July 1994.

****32. *Plumularia pennycuikai* Millard et Bouillon, 1973** 페나깃히드라

Previous records in Korea. Rho and Park, 1980 (Chakyakto); Rho and Park, 1986 (Yōngjongdo, Sōgwip'o, Chakyakto, Ullīngdo, Taech'ōn); Park, 1990 (Tōkchōkto).

Material examined. Kŭmgaphaesuyokchang, 23 July 1994.

*****33. *Plumularia setacea* (Linnaeus, 1758) 깃하드라**

Previous records in Korea. Rho, 1967 (Kōmundo); Rho, 1969 (Tolsan, Haeundae); Rho and Chang, 1974 (Sōgwip'o, Hallim, Wimi-ri); Rho and Park, 1986 (Wimi-ri, Anmyōndo, Naksan, Kuryongp'o, Sōgwip'o, Taehūksando, Mip'o); Park, 1993 (Mundo).

Material examined. Chōpto, 23 July 1994.

***34. *Pycnotheca mirabilis* (Allman, 1883) 질긴컵하드라**

Previous records in Korea. Rho, 1967 (Sōgwip'o, Sōnyudo); Rho and Chang, 1972 (Sōgwip'o); Rho and Chang, 1974 (Sōgwip'o, Supto, Wimi-ri); Rho and Park, 1986 (Wimi-ri, Mip'o, Chindo <Chōpto>, Kuryongp'o, Sōgwip'o, Samch'ōnp'o); Park, 1990 (Kap'ado, Chumunjin); Park, 1993 (Mundo, Supto).

Material examined: 126°10' -16' E, 34°19' -21' N, 23 July 1994.

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진도산 히드라충류(자포동물문: 히드라충강)

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요 약

1994년 7월 22일부터 26일까지 한국동물분류학회 창립 10주년 기념 학술대회에서 진도에서 실시되었다. 이 기간 중 채집된 히드라충류는 8과 31종으로 동정·분류되었는데, 이 중 8종은 진도기록종이고 나머지는 진도미기록종으로 판명되었다. 진도 미기록종 중 *Halecium magellanicum*과 *Obelia flexuosa*는 한국미기록종으로 밝혀졌다. 본 연구에서 관찰되지 않은 3종의 진도기록종을 포함하여 현재까지 동정된 진도산 히드라충류는 8과 34종이 된다.