



HOKKAIDO UNIVERSITY

| | |
|------------------|---|
| Title | On Two New Species of Athecate Hydroid Stylactis from Hokkaido (With 7 Textfigures) |
| Author(s) | YAMADA, Mayumi |
| Citation | 北海道大學理學部紀要, 9(4), 383-387 |
| Issue Date | 1948-07 |
| Doc URL | https://hdl.handle.net/2115/27069 |
| Type | departmental bulletin paper |
| File Information | 9(4)_P383-387.pdf |



On Two New Species of Athecate Hydroid
Stylactis from Hokkaido¹⁾

By

Mayumi Yamada

Zoological Institute, Faculty of Science, Hokkaido
University Sapporo

(With 7 Textfigures)

This report deals with two new species of the athecate hydroid *Stylactis*, which were taken by myself in the littoral of Muroran during my stay at the Institute of Algological Research of our University for the collection of hydroids last spring. The specimens are composed of colonies of two athecate hydroids, one developed on rock and shells of barnacles and the other on a species of the gastropods. On closer examination, these hydroids seem to be each referable to distinct species of *Stylactis*, one of the primitive members in the Bougainvilliidae. The representatives of the genus *Stylactis* hitherto reported from the Japanese waters are the following four species, two from Misaki by Iwasa and two from Seto by Komai and Hiro, i.e. *S. yerii* (Iwasa), *S. misakiensis* (Iwasa), *S. piscicola* Komai and *S. carcinicola* Hiro, but none from Hokkaido. Descriptions of the present new species will be given as follows. Before proceeding further, I should like to express my cordial thanks to Prof. Dr. Tohru Uchida for his kind guidance in preparing this manuscript.

Stylactis conchicola n. sp.

(Figs. 1-4)

The colony grows on the surface of the shell of a living gastropod, *Homalopoma sangarensis* (Schrenck). It develops closely set in the grooves of the suture lines, but several polyps and spines are sparsely found separately in other parts. But some colonies are so well-developed that they cover the whole surface of the shell. The hydro-

1) Contributions from the Akkeshi Marine Biological Station, No. 48.

rhiza is a network of stolons forming a plane, which are coated with a thin perisarc. The stolons in the parts in which the polyps are scarcely present, form an open, rather regular square network, about 0.05 mm in thickness, but in thickly grown parts they are very

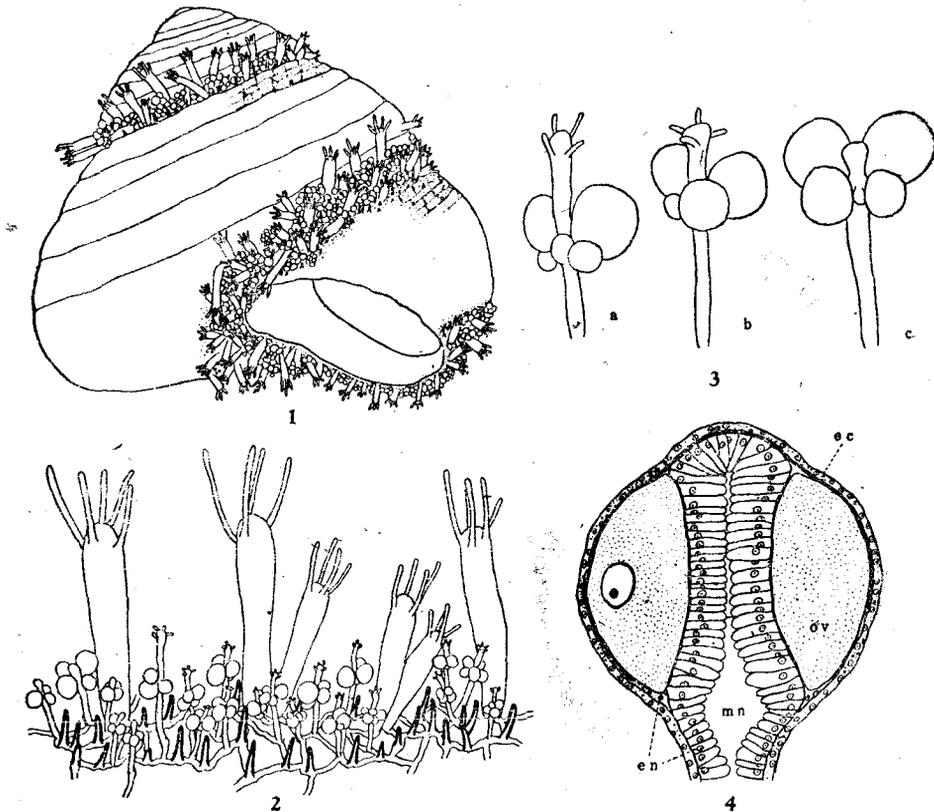


Fig. 1. *Stylactis conchicola* n. sp. growing on a shell of *Homalopoma sangarensis* (Schrenck).

Fig. 2. The same. General appearance of a portion of the colony.

Fig. 3. The same. Blastostyles: with four tentacles (a and b), and with out tentacles (c).

Fig. 4. The same. Longitudinal section of a female gonophore: ec, ectoderm; en, endoderm; mn, manubrium; ov, ovum.

densely arranged and are wider than in the former case. The colony is typically polymorphic, i.e., consists of three kinds of individuals, gastrozooids, blastostyles and spines. The gastrozooids attain 2.0 mm

in height and are elongate and unbranched. They are widest at the circlet of tentacles, attaining 0.3 mm, and taper gradually towards the distal end. Tentacles are usually 4 or less, occasionally 5, in number, moderately long and arranged in a single circlet. The hypostome is low conical in shape and a distinct mouth-aperture opens on the top of it. The blastostyles are about half the height and the width of the gastrozooids, and are approximately 0.9–1.3 mm in length. There are usually 4 tentacles arranged in a single whorl as in the gastrozooids, but besides these the blastostyles destitute of tentacles are found here and there. The gonophores are sporosacs. The gonophores are oval in shape and 5 to 8 in number, showing different stages of development on a polyp forming a verticil, attaching to the middle part of tentacled blastostyles but immediately below the top in non-tentacled ones. Female gonophores have neither radial nor ring canals. The spines are fairly numerous and attain 0.45 mm in height. Nematozooids could not be found.

This species growing upon the shell of a living gastropod, *Homalopoma sangarensis* (Schrenck), taken in the littoral of Muroran in June 1946. The present species is easily distinguished from the preexisting species in the small number of tentacles of the gastrozooids.

Stylactis uchidai n. sp.

(Figs. 5-7)

The colony grows on rock or covers shells of barnacles. The hydrorhiza is consisted of a stolon which forms a network. It is invested by a thin but distinct membrane of perisarc, and is about 0.07 mm in thickness. The gastrozooids are up to 3.0 mm in height and cylindrical in form, but slightly taper towards the distal ends. The hypostome is conical, and is encircled by a circlet of 6–9 slender tentacles. The blastostyles are only a half as long as gastrozooids and less than 2.0 mm in height. They are provided with 4–6 short tentacles. The gonophores are attached in a group to the blastostyle at a short distance below the tentacles, a group composed of 6–10 gonophores of various size. They are slightly oval or cylindrical in shape. No radial and ring canals are present in the female gonophores. Besides the gastrozooids and blastostyles, there occur many chitinous spines and a few nematozooids.

The hydroids grow on shells of barnacles and rock. Many speci-

mens are collected in June 1946, at the same locality of the former species. This species is, at a glance, not clearly distinguishable from the former species, but differs from it in details of the characters in the hydrorhiza and the blastostyles. The present species displays no square appearance in network of the stolons and has always only one kind of the blastostyles which show two types in the former species.

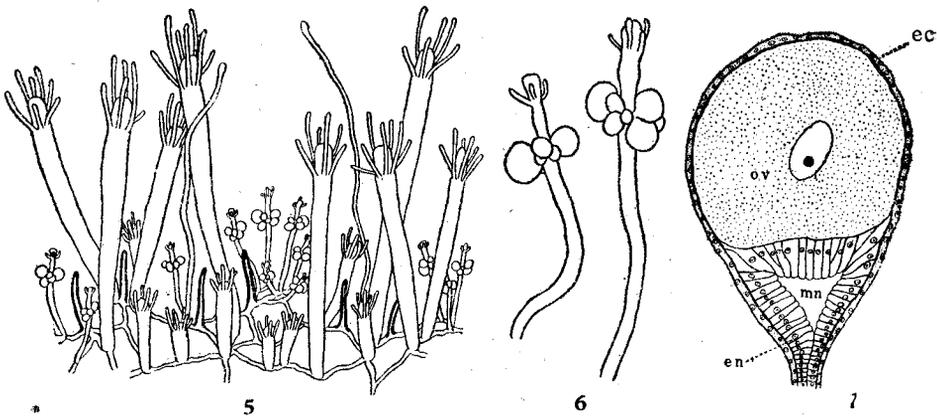


Fig. 5. *Stylactis uchidai* n. sp. General appearance of a portion of the colony.

Fig. 6. The same. Two blastostyles bearing gonophores.

Fig. 7. The same. Longitudinal section of a female gonophore. For explanation see fig. 4.

Stylactis, *Hydractinia* and *Podocoryne* are the closely related genera, and among them the genus *Stylactis* was revised several times by some students since its construction by Allman (1864). Motz-Kossowska (1905) and Kramp (1932) asserted the union of these into one genus *Hydractinia* sensu lat. And recently, Iwasa (1934a) made a revision of *Stylactis* and its allied genera, *Stylactella*, *Stylactaria*, etc. He proposed to refer all the species to the genus *Stylactella* with a new generic diagnosis, and divided it into two subgenera, *Stylactis* and *Stylactella*, by the state of attachment of the gonophores. I am now preparing another report in which the problem will be discussed.

Literature Cited

- Allman, G. J. 1872. A monograph of the gymnoblastic or tubularian hydroids. London.
- Goette, A. 1916. Die Gattungen *Podocoryne*, *Stylactis* und *Hydractinia*. Zool. Jahrb., Abt. Syst., Bd. 39, pp. 443-510, pls. 13-15.
- Hiro, F. 1939. Notes on the animals found on *Macrocheira kaempferi* de Haan. III. Hydroids. Annot. Zool. Japon., vol. 18, pp. 167-176.
- Iwasa, M. 1934a. Revision of *Stylactis* and its allied genera, with description of *Stylactella (Stylactis) yerii* n. sp. Jour. Fac. Sci. Hokkaido Imp. Univ., ser. 6, vol. 2, pp. 241-277.
- 1934b. A new athecate hydroids from Misaki. Proc. Imp. Acad. Tokyo, vol. 10, pp. 289-291.
- Komai, T. 1932. On two species of athecate hydroids associated with scorpaenoid fishes. Annot. Zool. Japon., vol. 13, pp. 445-459, pls. 26-28.
- Kramp, P. C. 1932. The Godthaab Expedition 1928. Hydroida. Meddel. Om Grønland, Bd. 79, pp. 1-86.
- Motz-Kossowska, A. 1906. Contribution à la connaissance des hydraires de la Méditerranée occidentale. I. Hydraires gymnoblastiques. Arch. Zool. Expér. et Gén., sér. 4, T. 3, pp. 39-98, pl. 3.
- Sigerfoos, C. P. 1899. A new hydroid from Long Island Sound. Amer. Nat. vol. 33, pp. 801-807.
-

On Two New Species of Athecate Hydroid
Stylactis from Hokkaido¹⁾

By

Mayumi Yamada

Zoological Institute, Faculty of Science, Hokkaido
University Sapporo

(With 7 Textfigures)

This report deals with two new species of the athecate hydroid *Stylactis*, which were taken by myself in the littoral of Muroran during my stay at the Institute of Algological Research of our University for the collection of hydroids last spring. The specimens are composed of colonies of two athecate hydroids, one developed on rock and shells of barnacles and the other on a species of the gastropods. On closer examination, these hydroids seem to be each referable to distinct species of *Stylactis*, one of the primitive members in the Bougainvilliidae. The representatives of the genus *Stylactis* hitherto reported from the Japanese waters are the following four species, two from Misaki by Iwasa and two from Seto by Komai and Hiro, i.e. *S. yerii* (Iwasa), *S. misakiensis* (Iwasa), *S. piscicola* Komai and *S. carcinicola* Hiro, but none from Hokkaido. Descriptions of the present new species will be given as follows. Before proceeding further, I should like to express my cordial thanks to Prof. Dr. Tohru Uchida for his kind guidance in preparing this manuscript.

Stylactis conchicola n. sp.

(Figs. 1-4)

The colony grows on the surface of the shell of a living gastropod, *Homalopoma sangarensis* (Schrenck). It develops closely set in the grooves of the suture lines, but several polyps and spines are sparsely found separately in other parts. But some colonies are so well-developed that they cover the whole surface of the shell. The hydro-

1) Contributions from the Akkeshi Marine Biological Station, No. 48.

rhiza is a network of stolons forming a plane, which are coated with a thin perisarc. The stolons in the parts in which the polyps are scarcely present, form an open, rather regular square network, about 0.05 mm in thickness, but in thickly grown parts they are very

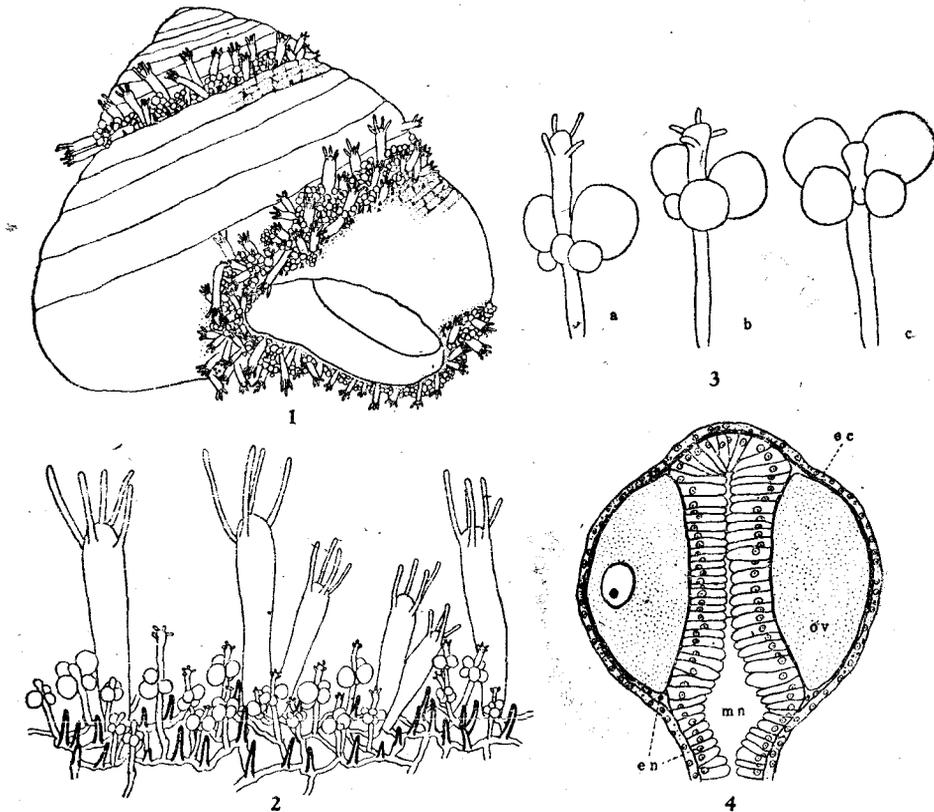


Fig. 1. *Stylactis conchicola* n. sp. growing on a shell of *Homalopoma sangarensis* (Schrenck).

Fig. 2. The same. General appearance of a portion of the colony.

Fig. 3. The same. Blastostyles: with four tentacles (a and b), and with out tentacles (c).

Fig. 4. The same. Longitudinal section of a female gonophore: ec, ectoderm; en, endoderm; mn, manubrium; ov, ovum.

densely arranged and are wider than in the former case. The colony is typically polymorphic, i.e., consists of three kinds of individuals, gastrozooids, blastostyles and spines. The gastrozooids attain 2.0 mm

in height and are elongate and unbranched. They are widest at the circlet of tentacles, attaining 0.3 mm, and taper gradually towards the distal end. Tentacles are usually 4 or less, occasionally 5, in number, moderately long and arranged in a single circlet. The hypostome is low conical in shape and a distinct mouth-aperture opens on the top of it. The blastostyles are about half the height and the width of the gastrozooids, and are approximately 0.9–1.3 mm in length. There are usually 4 tentacles arranged in a single whorl as in the gastrozooids, but besides these the blastostyles destitute of tentacles are found here and there. The gonophores are sporosacs. The gonophores are oval in shape and 5 to 8 in number, showing different stages of development on a polyp forming a verticil, attaching to the middle part of tentacled blastostyles but immediately below the top in non-tentacled ones. Female gonophores have neither radial nor ring canals. The spines are fairly numerous and attain 0.45 mm in height. Nematozooids could not be found.

This species growing upon the shell of a living gastropod, *Homalopoma sangarensis* (Schrenck), taken in the littoral of Muroran in June 1946. The present species is easily distinguished from the preexisting species in the small number of tentacles of the gastrozooids.

Stylactis uchidai n. sp.

(Figs. 5-7)

The colony grows on rock or covers shells of barnacles. The hydrorhiza is consisted of a stolon which forms a network. It is invested by a thin but distinct membrane of perisarc, and is about 0.07 mm in thickness. The gastrozooids are up to 3.0 mm in height and cylindrical in form, but slightly taper towards the distal ends. The hypostome is conical, and is encircled by a circlet of 6–9 slender tentacles. The blastostyles are only a half as long as gastrozooids and less than 2.0 mm in height. They are provided with 4–6 short tentacles. The gonophores are attached in a group to the blastostyle at a short distance below the tentacles, a group composed of 6–10 gonophores of various size. They are slightly oval or cylindrical in shape. No radial and ring canals are present in the female gonophores. Besides the gastrozooids and blastostyles, there occur many chitinous spines and a few nematozooids.

The hydroids grow on shells of barnacles and rock. Many speci-

mens are collected in June 1946, at the same locality of the former species. This species is, at a glance, not clearly distinguishable from the former species, but differs from it in details of the characters in the hydrorhiza and the blastostyles. The present species displays no square appearance in network of the stolons and has always only one kind of the blastostyles which show two types in the former species.

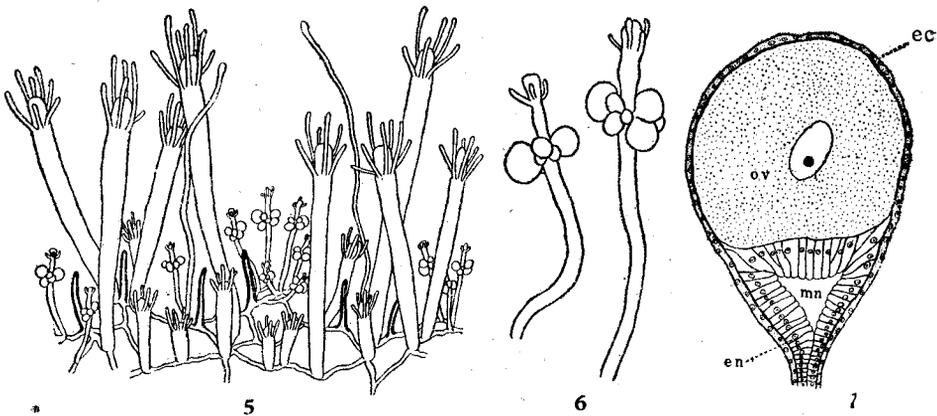


Fig. 5. *Stylactis uchidai* n. sp. General appearance of a portion of the colony.

Fig. 6. The same. Two blastostyles bearing gonophores.

Fig. 7. The same. Longitudinal section of a female gonophore. For explanation see fig. 4.

Stylactis, *Hydractinia* and *Podocoryne* are the closely related genera, and among them the genus *Stylactis* was revised several times by some students since its construction by Allman (1864). Motz-Kossowska (1905) and Kramp (1932) asserted the union of these into one genus *Hydractinia* sensu lat. And recently, Iwasa (1934a) made a revision of *Stylactis* and its allied genera, *Stylactella*, *Stylactaria*, etc. He proposed to refer all the species to the genus *Stylactella* with a new generic diagnosis, and divided it into two subgenera, *Stylactis* and *Stylactella*, by the state of attachment of the gonophores. I am now preparing another report in which the problem will be discussed.

Literature Cited

- Allman, G. J. 1872. A monograph of the gymnoblastic or tubularian hydroids. London.
- Goette, A. 1916. Die Gattungen *Podocoryne*, *Stylactis* und *Hydractinia*. Zool. Jahrb., Abt. Syst., Bd. 39, pp. 443-510, pls. 13-15.
- Hiro, F. 1939. Notes on the animals found on *Macrocheira kaempferi* de Haan. III. Hydroids. Annot. Zool. Japon., vol. 18, pp. 167-176.
- Iwasa, M. 1934a. Revision of *Stylactis* and its allied genera, with description of *Stylactella (Stylactis) yerii* n. sp. Jour. Fac. Sci. Hokkaido Imp. Univ., ser. 6, vol. 2, pp. 241-277.
- 1934b. A new athecate hydroids from Misaki. Proc. Imp. Acad. Tokyo, vol. 10, pp. 289-291.
- Komai, T. 1932. On two species of athecate hydroids associated with scorpaenoid fishes. Annot. Zool. Japon., vol. 13, pp. 445-459, pls. 26-28.
- Kramp, P. C. 1932. The Godthaab Expedition 1928. Hydroida. Meddel. Om Grønland, Bd. 79, pp. 1-86.
- Motz-Kossowska, A. 1906. Contribution à la connaissance des hydraires de la Méditerranée occidentale. I. Hydraires gymnoblastiques. Arch. Zool. Expér. et Gén., sér. 4, T. 3, pp. 39-98, pl. 3.
- Sigerfoos, C. P. 1899. A new hydroid from Long Island Sound. Amer. Nat. vol. 33, pp. 801-807.
-