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Author(s)	Yamada, Yukiko; Inagaki, Kan-ichi
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On *Acrothamnion pulchellum* YAMADA (non J. AGARDH) from Japan

By

Y. YAMADA and K. INAGAKI

In 1928 one of the writers (YAMADA) reported a small red alga growing on the shells of *Mytilus* from Mutsu Bay,* under the name of *Acrothamnion pulchellum* J. AG. At that time he noticed in his specimens that every two pinnae standing opposite each other on the rachis are not on the same plane, as described by J. AGARDH, but are on two different planes facing each other. Furthermore he has not found any accessory branchlet bearing the tetraspores described by J. AGARDH, thus substantiating the observation of K. YENDO.** For the reasons stated above, he put a query after the specific name.

Soon after the publication of that paper, he had an opportunity of going abroad and visited HARVEY's Herbarium at Dublin, AGARDH's Herbarium at Lund etc. In these herbaria he made a comparison of the Japanese specimens with HARVEY's Austr. Alg., No. 539, *Callithamnion pulchellum* HARV. which is the type of *Acrothamnion pulchellum* J. AG.

The resemblance between those specimens from the two sources is, however, only superficial, microscopic examination soon revealing the difference between them. On the other hand, YENDO has reported the occurrence of *Antithamnion applicitum* J. AG. (*Callithamnion applicitum* HARV.) within our boundary.*** Judging from his figure, the frond of his specimens seems to bear some resemblance to that of ours, especially the branching, and location of the gland cells (considered as tetrasporangia by YENDO). In the HARVEY Herbarium at Dublin a comparison of the Japanese specimens in question with the type of *Callithamnion applicitum* HARV. was made. This type specimen creep on the frond of some coral-

* YAMADA, Y.: Marine algae of Mutsu Bay and adjacent waters, II (Sci. Rep. Tohoku Imp. Univ., 4. Ser., Biol. vol. 3, 1928), p. 528.

** YENDO, K.: Notes on algae new to Japan, V (Bot. Mag., Tokyo, vol. 30, 1916), p. 262.

*** YENDO, K.: Notes on algae new to Japan, VII (Bot. Mag., Tokyo, vol. 31, 1917), p. 206.

linaceous alga, being so small that a hand-lens is necessary to find it, and is thus quite readily separated specifically from our specimens. We therefore, describe here the Japanese specimens as a new species.

During the course of his study of the marine Rhodophyceae from Osyoro Bay, another writer (INAGAKI) also found the same plant growing on the shells of *Mytilus*, as well as on the fronds of other algae, *Gelidium*, *Sargassum* etc., but very rarely on rocks.

***Antithamnion nipponicum* sp. nov.**

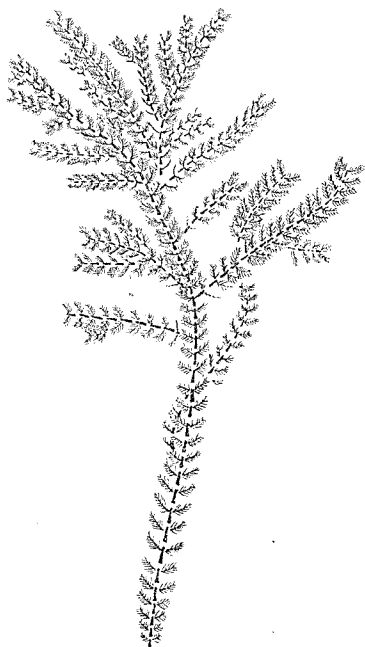


Fig. 1. *antithamnion nipponicum*
sp. nov. $\times 10$.

Frons caespitosa, 0.6–1.5 cm alta, initio decumbens, dein erecta, repetite pinnatim ramosa, rhizoideis filamentosis adfixa; rhizoideis filamentosis cellulis elongatis compositis, apice saepissime palmatim divisis, $60\text{--}70\mu$ crassis; rachide principale serie singuli cellularum elongatarum composita, nuda; cellulis rachidum ramorumque ad basin frondis ca. $100\text{--}150\mu$, sursum $250\text{--}350\mu$ longis, $75\text{--}90\mu$ crassis, prope apicem pinnae oppositas vel interdum ramum et pinnae vel duas pinnae emittentibus; pinnis oppositis in planitiis diversis oppositis dispositis, cellula parva basali, 4–8 paribus pinnularum sed superne pinnulis secundis; pinnulis e 3–10 cellulis compositis, saepe curvatis, apice acutis obtusisve; cystocarpis terminalibus, sphaericis, non involuclatis; antheridiis oblongis, ad cellulam inferiorem pinnularum seriatis; tetrasporangiis solitariis, sessilibus, curciatim divisis, ellipticis, ca. 70μ longis, 50μ latis, ad latus superior cellularum partum inferiorum pinnularum ornatis; cellulis glandulosis ellipsoideis, flavescente nitidis, plerumque ad cellulam inferiorem pinnularum sessilibus. Species dioica.

Japanese name. *Hutatugasane*.

Hab. Natudomari-zaki, Mutu Bay; Osyoro, Siribesi Prov.

Frond caespitose, 0.6–1.5 cm high, at first decumbent, afterward erect, repeatedly pinnately branched, attached to the substratum by means of rhizoidal filaments; rhizoidal filaments consisting of elongated cells, and

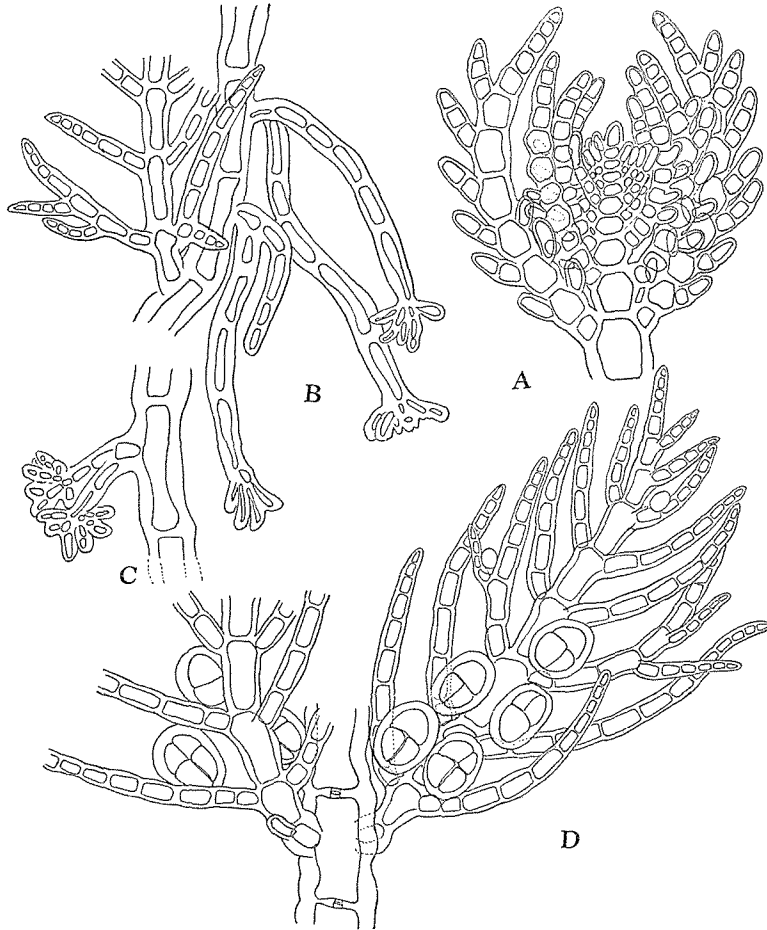


Fig. 2. *Antithamnion nipponicum* sp. nov.

A. Apical portion of the frond. $\times 260$.

B, C. Basal portions of the frond, bearing rhizoidal filaments. $\times 160$.

D. Two pinnae on the principal rachis, bearing tetrasporangia. $\times 160$.

very often dividing palmately at apices, $60-70\mu$ thick; principal rachis consisting of a single row of elongated cells, completely nude; cells of principal rachis or of main branches about $100-150\mu$ long near the base of the frond, $250-350\mu$ long, about $75-90\mu$ thick in the middle portion, mostly bearing two opposite pinnae near upper end, or sometimes instead of them one or two branches; two opposite pinnae standing on two different planes facing each other; pinnae standing on a small basal cells, with

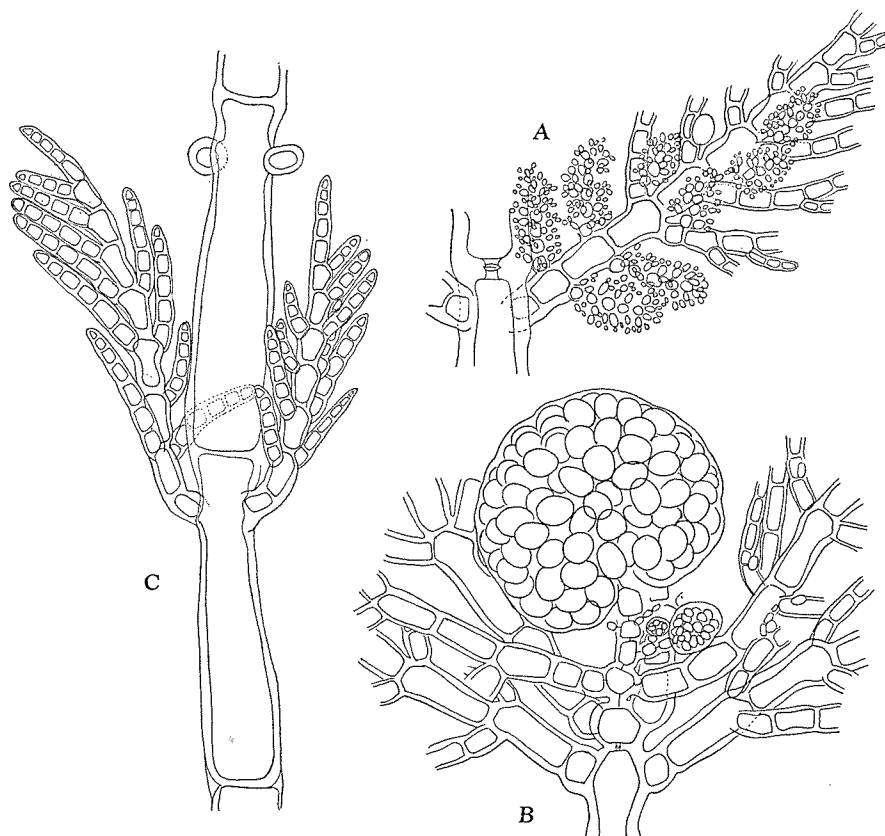


Fig. 3. *Antithamnion nipponicum* sp. nov.

- A. Pinna bearing antheridia. $\times 280$.
- B. Pinna with cystocarps. $\times 170$.
- C. A part of the principal rachis with opposite pinnae. $\times 170$.

rachis consisting of 10–14 cells, provided with 4–8 pairs of pinnules, but in the upper portion often with secund pinnules; pinnules consisting of 3–10 cells, often curved inward, acute or obtuse at apices; cystocarps terminal on branches, nearly spherical in outline, without special involucre-like branchlet; antheridia seriate, occupying the sides of cells mostly of lower pinnules of pinnae, oblong in outline; tetrasporangia solitary, sessile, elliptical in shape, about 70μ long, 50μ broad, produced generally on the upper side of cells of pinnules in the lower portion of pinnae, cruciately divided; gland cells elliptical, brilliantly yellowish, borne generally on cells of lower pinnules. Plant dioecious, very beautiful red in colour.