

Solieria pacifica (YAMADA) YOSHIDA, comb. nov. (Solieriaceae, Rhodophyta)
from Japan*

Tadao YOSHIDA

Department of Botany, Faculty of Science, Hokkaido University, Sapporo, 060 Japan

YOSHIDA, T. 1989. *Solieria pacifica* (YAMADA) YOSHIDA, comb. nov. (Rhodophyta, Solieriaceae) from Japan. Jpn. J. Phycol. 37: 268–270.

An alga known as *Solieria robusta* from Japan was shown to be different from that of Australia, especially in basal morphology. A new combination, *Solieria pacifica* was proposed for the Japanese species, based on *Chrysymenia pacifica* YAMADA.

Key Index Words: *Chrysymenia pacifica*—*Rhodophyta*—*Solieria pacifica*—*Solieria robusta*—*Solieriaceae*—*taxonomy*.

An alga of Solieriaceae from Japan was first identified as *Rhabdonia robusta* J. AGARDH by YENDO (1914), based on the specimens from southern part of Japan. This species was later called *Solieria robusta* (GREVILLE) KYLIN by OKAMURA (1936). The same species was also reported from Chinese coast (TSENG 1983) and Korea (LEE and KANG 1986). Comparison of Japanese specimens with those of Australia revealed certain differences in external morphology. Therefore, it is concluded that the alga in question is a different taxon at specific level from the southern hemisphere *S. robusta* (type locality: western Australia). Nomenclatural problem of Japanese taxon is discussed in relation with *Chrysymenia pacifica* YAMADA (1933).

Materials

Many specimens from several localities of Chiba, Kanagawa, Wakayama, Hiroshima, Fukuoka, and Kumamoto Prefectures in southern parts of Japan, deposited in the herbarium (SAP) of Faculty of Science, Hokkaido University, were used for observation. A collection of *S. robusta* from Queenscliff, Vic-

toria, Australia (Aug. 20, 1988, leg. T. Yoshida, SAP 052979, 052980) was used for comparison. Herbarium specimens of Womersley collection in the University of Adelaide (now in AD) were also examined.

Observations

Morphology of Japanese specimens: One or several thalli arise from a discoid or irregular scutate basal disc (Fig. 1). Erect thalli are up to 40 cm high, and are attenuating below into a short cylindrical stem, gradually dilating above, cylindrical when young, then becoming compressed above and nearly flat, up to 15 mm wide in the broadest part in older plants. The texture of the thallus is soft fleshy when young and almost cartilaginous in well grown plants. Thalli are 2–3 times branched alternately, with the bases of branchlets constricted. Apices of the branches are acutely pointed. Thallus structure is multiaxial in construction typical of this genus, with medulla composed by loosely arranged elongate filaments and cortex with inner large round cells and outer small cells. Carpogonial branches are usually composed of 3 cells, directing inwardly with trichogyne turned to the surface. Mature cystocarps are embedded in the medullary region and with a

* Dedicated to the memory of the late Dr. Munenao KUROGI (1921–1988), Professor Emeritus of Hokkaido University.

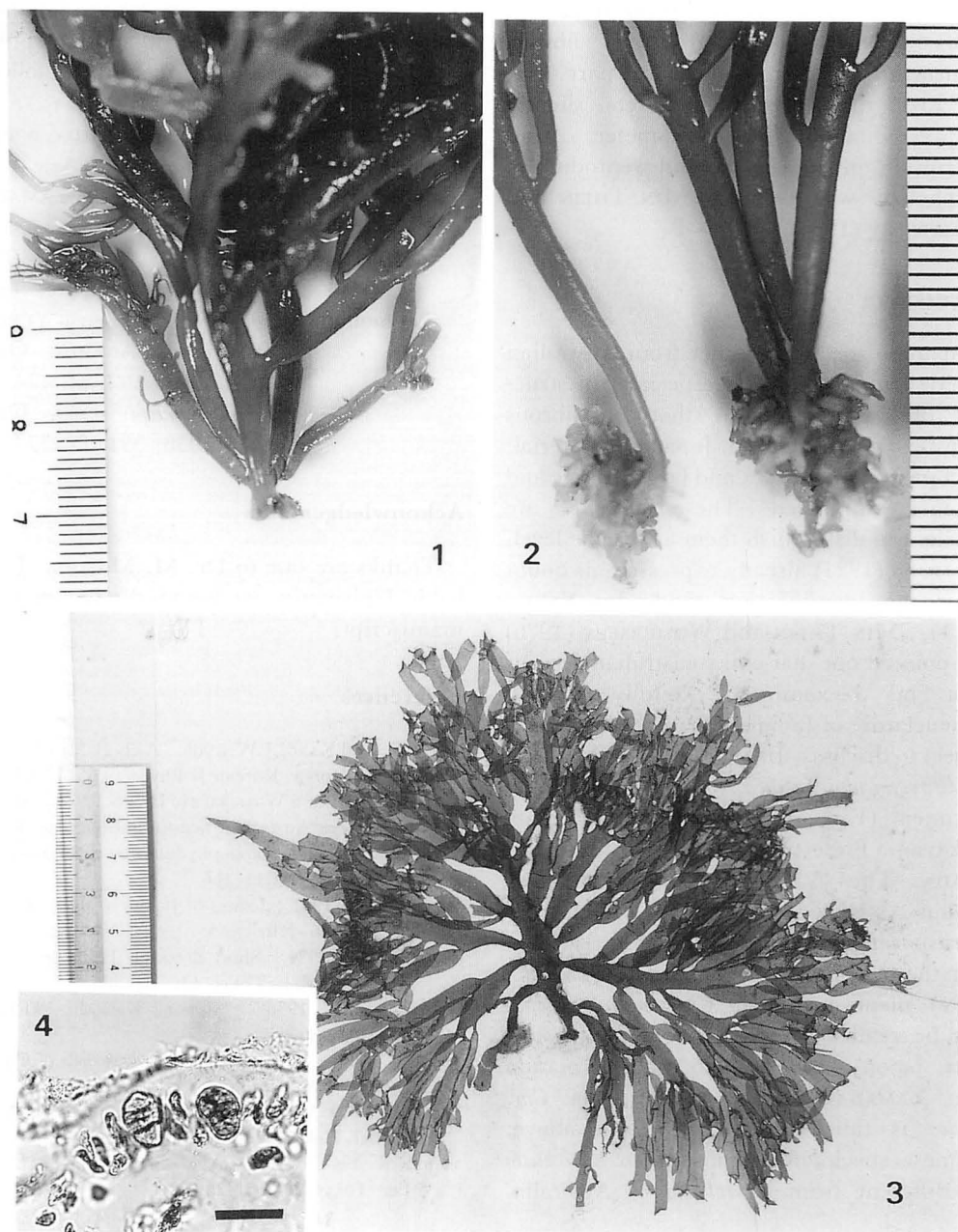


Fig. 1. Discoid holdfast of Japanese plant.
 Fig. 2. Basal fibrous holdfast of *Solieria robusta* from Queenscliff, Australia.
 Fig. 3. Holotype of *Chrysomenia pacifica* YAMADA, SAP 21250.
 Fig. 4. Cross section of *Chrysomenia pacifica*, showing zonate tetrasporangia. Scale bar 30 μ m.

distinct ostiole and are slightly raised on the surface of the branches. Each cystocarp has a large central fusion cell. Tetrasporangia are scattered over the thallus surface, dividing

zonately. OKAMURA (1921) illustrated the morphological features of the Japanese plant.

Morphology of Australian *Solieria robusta*: The specimens at hand are young and im-

mature individuals about 10 cm high. A holdfast consists of a group of fibrous outgrowths issued from the basal part (Fig. 2). Erect thalli are usually terete, slightly compressed, about 2 mm in diameter. A full description of vegetative and reproductive morphology was given by MIN THEIN and WOMERSLEY (1976).

Discussion

Japanese specimens differ from Australian material in morphology, especially in structure of basal parts in that no fibrous outgrowth is present in Japanese material. Erect part is much stout and larger in size and becomes compressed. These differences are sufficient to distinguish them at specific level. OKAMURA (1921) already expressed his doubt about the identification made by YENDO (1914). MIN THEIN and WOMERSLEY (1976) also pointed out that extra-australian records must be reexamined carefully. Then nomenclature of Japanese material becomes a subject to discuss. In 1933, YAMADA described *Chrysymenia pacifica*, based on a single specimen (Fig. 3) collected at Oshima, Wakayama Prefecture and sent to him by Dr. OKADA. This is a tetrasporic individual. Thallus structure is that of *Solieria*. Tetrasporangia divide zonately (Fig. 4). Just after the publication of the name, OKAMURA (1934) mentioned that *Chrysymenia pacifica* must be treated as a synonym of *Solieria robusta* (auct. japon), according to the information from YAMADA himself. Identity of *Chr. pacifica* is thus clear. As shown above, Japanese specimens attributed to *S. robusta* are different from *S. robusta* of Australia.

New name is thus necessary for the Japanese taxon. In this circumstance, specific epithet "pacifica" is available for it, and the following combination is proposed:

Solieria pacifica (YAMADA) YOSHIDA, comb. nov.

Basionym: *Chrysymenia pacifica* YAMADA, 1933: 279, pl. 10.

Holotype: SAP 21250 (Aug. 6, 1928. Oshima, Wakayama Prefecture)

Synonym: *Rhabdonia robusta* sensu YENDO, 1914, non J. AGARDH. OKAMURA, 1921: 102, pl. 174.
Solieria robusta sensu OKAMURA, 1936: 591, f. 277.

Acknowledgements

Thanks are due to Dr. M. MASUDA, Hokkaido University, for his kind advice on the manuscript.

References

- LEE, I.K. and KANG, J.W. 1986. A check list of marine algae in Korea. Korean J. Phycol. 1: 311-325.
MIN THEIN, U. and WOMERSLEY, H.B.S. 1976. Studies on southern Australian taxa of Solieriaceae, Rhabdoniaceae and Rhodophyllidaceae (Rhodophyta). Aust. J. Bot. 24: 11-166.
OKAMURA, K. 1921. Icones of Japanese algae. 4: 85-107. pls. 166-170.
OKAMURA, K. 1934. Short notes on Japanese marine algae. Bot. Mag. Tokyo 43: 883-888.
OKAMURA, K. 1936. Nippon Kaisoshi. Uchida-Rokakuho, Tokyo.
TSENG, C.K. (ed.) 1983. Common seaweeds of China. Science Press, Beijing.
YAMADA, Y. 1933. Notes on some Japanese algae V. J. Fac. Sci. Hokkaido Univ. Ser. V (Bot.) 2: 277-285.
YENDO, K. 1914. Notes on algae new to Japan II. Bot. Mag. Tokyo 28: 263-281.

吉田忠生：ミリン（紅藻，スギノリ目）の学名について

日本中・南部に産する紅藻ミリンにはこれまでオーストラリア産の *Solieria robusta* の学名が当てられてきた。しかし、付着器の形態などに違いがあって、同一種とはいえない。日本産の種にはすでに *Chrysymenia pacifica* YAMADA の学名があるので、*Solieria pacifica* の組合せを提案する。(060 札幌市北区北10条西8丁目 北海道大学理学部植物学教室)