

# Phycological Trailblazer

## No. 34

### Yukio Yamada

(Originally printed in the Phycological Newsletter.  
2011. Vol. 47 No. 1)

Yukio Yamada was one of the most significant phycologists of the 20th century, not just in terms of his contributions to knowledge of the Japanese marine algal flora but for his international reputation. Even though there have been two previous tributes to Yamada (Kurogi, 1976; Tatewaki, 1996), his story is worth repeating in this series. Yamada was born on 14 August, 1900, in Kyoto, but the family moved to Tokyo where he was raised. He was an undergraduate student in the Botanical Institute of the Faculty of Science of the University of Tokyo, where his initial mentor was Professor Bunzo Hayata, a terrestrial botanist. It was Hayata who encouraged Yamada to study the marine algae of Taiwan (Formosa), and Yamada was introduced to the famous Professor Kintaro Okamura, the foremost phycologist in Japan. Okamura was at the Imperial Fisheries Institute in Tokyo, and his influence drew Yamada toward his own career in phycology. Yamada's (1925a, b) first publications were from his undergraduate research done on the algal flora of Taiwan. His first two publications were in German, in that Yamada had earlier taken the German curriculum in high school in preparation for going into medicine. But he decided that botany

was his primary interest for a career. Working with Okamura, Yamada had access to very rich herbarium collections that had been deposited there from such earlier workers as Kingo Miyabe and Kichisaburo Endo as well as the collections made by Okamura.

Showing such early promise, Yamada received a grant from the Japan Society for the Promotion of Scientific Research, which afforded him the opportunity to spend two years abroad, primarily at the University of California at Berkeley, where he worked on the UC holdings of *Laurencia* under the supervision of Prof. W. A. Setchell. Yamada spent 10 months at the Berkeley Herbarium as a non-salaried research fellow. He then went on to Europe, visiting a total of 25 herbaria in eight different countries (Tatewaki, 1996). This was a major step in introducing him to contemporary phycologists and in seeing a great diversity of collections,

especially *Laurencia* *sense lato*. Yamada acknowledged the guidance from Setchell and the valuable suggestions offered by Nathaniel Gardner of the UC Herbarium. He had access to the photographs of type specimens in European herbaria taken by Setchell. Yamada's monographic treatment of *Laurencia* was published in 1931, and it also served as his doctoral dissertation

for the Imperial University of Tokyo the same year.

With T. Kinoshita, he published a series of papers (1948, 1949, 1950) depicting the marine algae and animals occurring on the shores of Hokkaido. In addition to his interest in algae of Taiwan (Yamada & Tanaka, 1934; Yamada, 1950)



Yukio Yamada, Dinard, France, 1957. (Image taken by W. R. Taylor)

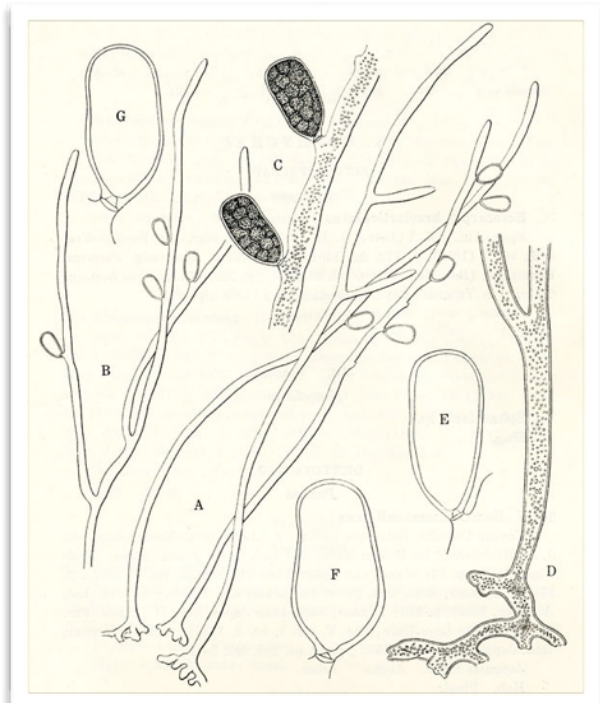


Fig. 1. *Derbesia ryukyuensis* Yamada & Tak. Tanaka [now *Pedobesia ryukyuensis* (Yamada & Tak. Tanaka) Kobara & Chihara] (Fig. 5 in Yamada & Tanaka, 1938).

and northern Japan, he paid much attention to the algal flora of tropical regions of Japan, such as the Ryukyus (Yamada, 1934; Yamada & Tanaka, 1938). *Derbesia ryukyuensis* Yamada & Tak. Tanaka (Fig. 1) was one of the new species described. He was also involved in studies of algae of Micronesia, (Yamada, 1944). Yamada selected certain genera for his special attention, *Liagora* being one of these (Yamada, 1937,



Fig. 2. *Yamadaella caenomyce* (Decne.) I.A. Abbott. Collection from the Dominican Republic.

1938a, b, c, d) as were *Caulerpa* and *Halimeda*. Although the impression and format of Yamada's 1944c paper appears that his new taxa of *Caulerpa* and *Halimeda* are being described in that paper, he had actually validated these names earlier in his 1940 and 1941b papers. His new species of *Caulerpa* included *C. matsueana*, *C. antoensis*, and *C. filicoides*. From the southern regions of Japan, Yamada also focused his attention on such genera as *Sargassum*, *Euclima*, and *Rhodopeltis*. He was especially interested in life histories of marine green algae, such as species of *Ulva*, *Monostroma*, *Blidingia*, and *Kornmannia* (Yamada & Saito, 1938; Yamada & Kanda, 1941; Yamada & Tatewaki, 1965).

Another contribution made by Yamada was his work to gain legal protection for the "miraculously spherical" balls of *Aegagropila linnaei* [formerly *Cladophora aegagropila*], or marimo, occurring in Lake Akan, on Hokkaido. On the bottom of this lake with a 5-square-mile surface area marimo reach a diameter often to 20 or even up to 30 cm (12 inches) and have a smooth, velvet-like surface. They have been described as "the rolling green jewels under the water". When the government in 1921 first designated marimo a "Natural Treasure", this led to people coming from all over the country to take them home as souvenirs and to sell them in the cities. The installation of a hydroelectric

power plant in 1920 on the Akan River, which feeds the lake, resulted in reduced water levels and in many of the marimo being exposed to air and dying. By the 1940s, the marimo was in great danger, and the local people, with help from folks like Yamada, organized an outcry to preserve them. Those efforts included the start of an annual 3-day marimo festival held in autumn, when the marimo is at its peak of growth. The indigenous people, the Ainu, participate in a ritual in which the marimo is moved in wooden boats and honored. In 1966 the Marino Exhibition and Observance Center was re-opened by Akan Town after extensive renovation.

Yamada was instrumental in establishing the Japanese Society of Phycology, founded in 1953, and he served as the Society's first president for a 13-year period. He was also a founding member of the International Phycological Society and served as its president in 1966.

Yamada had a number of algal taxa named in his honor. Segawa (1955) described *Yamadaea* ['*Yamadaia*'], a genus of small statured articulated coralline red algae named after him, and Abbott (1970) recognized *Yamadaella* (Fig. 2) as a segregate genus for *Liagora caenomyce*, a species that was widely known from the tropical Indo-Pacific and later reported to occur in the tropical western Atlantic (Wynne & Huisman, 1998). Mikami's (1973) *Yamadaphycus*, a genus of Delesseriaceae, has been treated as congeneric with *Heteroglossum*, described by Zinova (1972) the previous year (Schneider & Wynne, 2007). Professor Yamada passed away from myeloma in his native Kyoto on the evening of July 6, 1975, at the age of 74.

- Abbott, I. A. 1970. *Yamadaella*, a new genus in the Nemaliales (Rhodophyta). *Phycologia* 9: 115-123.
- Inagaki, K.-I. 1958. A systematic study of the order Chordariales from Japan and its vicinity. *Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokk. Imp. Univ.* 4: 87-197, 11 pls.
- Kurogi, M. 1976. Yukio Yamada (1900-1975). *Phycologia* 15: 215-219.

- Mikami, H. 1973. *Yamadaphycus*, a new genus of the Delesseriaceae (Rhodophyta). *Phycologia* 12: 139-143.
- Schneider, C. W., & M. J. Wynne. 2007. A synoptic review of the classification of red algal genera a half century after Kylin's "Die Gattungen der Rhodophyceen". *Bot. Mar.* 50: 197-249.
- Segawa, S. 1955. Systematic anatomy of the articulated corallines (supplementary report). The structure and reproduction of *Yamadaia melobesioides* Segawa. *Bot. Mag., Tokyo* 68: 241-247.
- Tatewaki, M. 1996. Yukio Yamada (1900-1975). In: *Prominent phycologists of the 20th century* (D. J. Garbary & M. J. Wynne, eds.). Lancelot Press Ltd., Hantsport, Nova Scotia. *Phycological Soc. Am.* Pp 131-138.
- Wynne, M. J., & J. M. Huisman. 1998. First report of *Yamadaella caenomyce* (Liagoraceae, Rhodophyta) from the Atlantic Ocean, with descriptive notes and comments on nomenclature. *Caribbean Journal of Science* 34: 280-285.
- Yamada, Y. 1925a. Studien über die Meeresalgen von der Insel Formosa. 1. Chlorophyceae. *Bot. Mag., Tokyo* 39: 77-95.
- \_\_\_\_\_. 1925b. Studien über die Meeresalgen von der Insel Formosa. 2. Phaeophyceae. *Botanical Magazine, Tokyo* 39: 239-254.
- \_\_\_\_\_. 1925c. Two algae new to Japan. *Bot. Mag., Tokyo* 39: 324-325. [In Japanese.]
- \_\_\_\_\_. 1926. The phyto-geographical relation between Chlorophyceae of the Mariannes, Carolines and Marshall Islands and those of the Malay Archipelago, Australia and Japan. *Proc. Third Pan-Pacific Sci. Congress, Tokyo*, pp. 964-966.
- \_\_\_\_\_. 1928. Report on the biological survey of Mutsu Bay. 9. Marine algae of Mutsu Bay and adjacent waters. II. *Sci. Rep. Tôhoku Imp. Univ., Biol.*, 3: 497-534.
- \_\_\_\_\_. 1930a. Notes on some Japanese algae, I. *J. Fac. Sci., Hokkaido Imp. Univ.* 1: 27-36, pls II-VI.
- \_\_\_\_\_. 1930b. Une nouvelle espèce d'*Udotea* du Pacifique: *Udotea geppii* sp. nov. *Revue Algol.* 5: 139-142.
- \_\_\_\_\_. 1931a. Notes on *Laurencia*, with special reference to the Japanese species. *Univ. Calif. Publ. Bot.* 16: 185-310, pls 1-30.
- \_\_\_\_\_. 1931b. Notes on some Japanese algae II. *J. Fac. Sci., Hokkaido Imp. Univ., Ser. V*, 1: 65-76, pls XVI-XX.

- \_\_\_\_\_. 1932a. Notes on some Japanese algae, III. J. Fac. Sci., Hokkaido Imp. Univ., ser. V, 1: 109-123, pls XXI-XXV.
- \_\_\_\_\_. 1932b. Notes on some Japanese algae IV. J. Fac. Sci., Hokkaido Imp. Univ., Ser. V, 2: 267-276, pls III-IX
- \_\_\_\_\_. 1933. Notes on some Japanese algae, V. J. Fac. Sci., Hokkaido Imp. Univ., Ser. V, 2: 277-285, pls X-XIII.
- \_\_\_\_\_. 1934. The marine Chlorophyceae from Ryukyu, especially from the vicinity of Nawa. J. Fac. Sci., Hokkaido Imp. Univ., Ser. V, 3: 33-88.
- \_\_\_\_\_. 1935a. Marine algae from Urup, the middle Kuriles, especially from the vicinity of Iema Bay. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 1: 1-26.
- \_\_\_\_\_. 1935b. Notes on some Japanese algae, VI. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 1: 27-35, pls 11-16.
- \_\_\_\_\_. 1936a. The species of *Eucheuma* from Ryūkyū and Formosa. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 1: 119-134, pls 21-29.
- \_\_\_\_\_. 1936b. Notes on some Japanese algae VII. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 1: 135-140, Pls 30-33.
- \_\_\_\_\_. 1937. Notes on *Liagora* (I). J. Jpn. Bot. 13: 861-871. [In Japanese.]
- \_\_\_\_\_. 1938a. Notes on *Liagora* (II). J. Jpn. Bot. 14: 1-10. [In Japanese.]
- \_\_\_\_\_. 1938b. Notes on *Liagora* (III). J. Jpn. Bot. 14: 77-89. [In Japanese.]
- \_\_\_\_\_. 1938c. Notes on *Liagora* (IV). J. Jpn. Bot. 14: 153-163. [In Japanese.]
- \_\_\_\_\_. 1938d. The species of *Liagora* from Japan. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 1-34, pls 1-15.
- \_\_\_\_\_. 1938e. Observations of *Arthrothamnus bifidus* J. Ag. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 113-118.
- \_\_\_\_\_. 1938f. Notes on some Japanese algae, VIII. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 119-130, pls 19-31.
- \_\_\_\_\_. 1940. [On the species of *Caulerpa* from Micronesia]. Kagaku Nanyō [South Sea Science] 3: 95-107. [In Japanese.]
- \_\_\_\_\_. 1941a. Notes on some Japanese algae IX. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 195-215, pls 40-48.
- \_\_\_\_\_. 1941b. [On the species of *Halimeda* from Micronesia]. Kagaku Nanyō [South Sea Science] 4: 108-121.
- \_\_\_\_\_. 1942a. [Notes on *Sargassum* from the southern parts of Japan, I]. J. Jpn. Bot. 18: 369-381. [In Japanese.]
- \_\_\_\_\_. 1942b. [Notes on *Sargassum* from the southern parts of Japan, II]. J. Jpn. Bot. 18: 503-519. [In Japanese.]
- \_\_\_\_\_. 1942c. [Notes on *Sargassum* from the southern parts of Japan, III]. J. Jpn. Bot. 18: 553-562. [In Japanese.]
- \_\_\_\_\_. 1944a. Diagnoses of new *Sargassum*s from Japan. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 1-10.
- \_\_\_\_\_. 1944b. Notes on some Japanese algae X. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 11-25.
- \_\_\_\_\_. 1944c. New *Caulerpas* and *Halimedas* from Micronesia. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 27-29, pls 1-5.
- \_\_\_\_\_. 1944d. A list of the marine algae from the Atoll of Ant. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 31-45, pls 6, 7.
- \_\_\_\_\_. 1949. On the species of *Thorea* from the Far Eastern Asia. J. Jpn. Bot. 24 155-158.
- \_\_\_\_\_. 1950. A list of marine algae from Ryukyusho, Formosa, I. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 173-194.
- \_\_\_\_\_. 1955. On C. P. Thunberg's specimens of marine algae from Japan. Bull. Jpn. Soc Phycol. 3: 81-83. [In Japanese.]
- \_\_\_\_\_. 1956. On the distribution of *Sargassum* on the coast of Japan and its neighbouring regions. Proc. Intern'l Seaweed Symp. 2: 218-220.
- \_\_\_\_\_. 1957. On the species of *Gelidiopsis* from the Ryukyu Archipelago and Formosa. Bull. Jpn. Soc. Phycol. 5: 60-63. [In Japanese.]
- \_\_\_\_\_. 1961. Two new species of marine algae from Japan. Bull. Res. Council Israel 10(D): 121-125.
- \_\_\_\_\_. 1962. On the species of *Agarum*. Acta Phytotax. Geobot. 20: 275-279.
- \_\_\_\_\_. 1968. Two new marine algae from Japan. J. Jpn. Bot. 43: 372-377.
- \_\_\_\_\_. & S. Funahashi. 1963. Notes on *Cystophyllum caespitosum* Yendo and some related species. Sci. Rep. Tôhoku Univ., Ser. IV (Bot.), 29: 349-354.
- \_\_\_\_\_. & K. Inagaki. 1935. On *Acrothamnion pulchellum* Yamada (non J. Agardh) from Japan. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 1: 37-40.
- \_\_\_\_\_. & T. Kanda. 1941. On the culture experiment of *Monostroma zostericola* and *Enteromorpha nana* var. *minima*. Sci. Pap. Inst. Algol. Res., Fac. Sci. Hokkaido Imp. Univ. 2: 217-226, pls XLIX-LII.
- \_\_\_\_\_. & T. Kinoshita. 1948. Icones of the marine animals

- and plants of Hokkaido. Marine algae No. 1. Hokkaido Fisheries Scientific Institution, Yoichi, Hokkaido. 18 pp, pls 1-22. [In Japanese.]
- \_\_\_\_\_ & T. Kinoshita. 1949. Icones of the marine animals and plants of Hokkaido. Marine algae No. 2. Hokkaido Fisheries Scientific Institution, Yoichi, Hokkaido. 14 pp., pls 23-43. [In Japanese.]
- \_\_\_\_\_ & T. Kinoshita. 1950. Icones of the marine animals and plants of Hokkaido. Marine algae No. 3. Hokkaido Fisheries Scientific Institution, Yoichi, Hokkaido. 14 pp., pls 44-61. [In Japanese.]
- \_\_\_\_\_ & E. Saito. 1938. On some culture experiments with the swarmers of certain species belonging to the Ulvaceae. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 35-51, 1 pl.
- \_\_\_\_\_ & T. Segawa. 1953. On some new or noteworthy algae from Hachijo Island. Rec. Oceanogr. Works Japan (N.S.) 1: 109-114.
- \_\_\_\_\_ & T. Tanaka. 1934. Three new red algae from Formosa. Trans. Nat. Hist. Soc. Formosa 24: 342-349.
- \_\_\_\_\_ & \_\_\_\_\_. 1938. The marine algae from the Island of Yonakuni. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 2: 53-86.
- \_\_\_\_\_ & \_\_\_\_\_. 1944. Marine algae in the vicinity of the Akkesi Marine Biological Station. Sci. Pap. Inst. Algol. Res., Fac. Sci., Hokkaido Imp. Univ. 3: 47-77, 1 pl.
- \_\_\_\_\_ & M. Tatewaki. 1965. New findings on the life history of *Monostroma zostericola* Tilden. Sci. Pap., Inst. Algol. Res., Hokkaido Univ. 5: 105-117, 3 pls.
- Zinova, A. D. 1972. Species familiae Delesseriaceae (Rhodophyta) in parte septentrionali Oceani Pacifici. 2. Novit. System Plant. non Vascul. 9: 65-82.

**Michael J. Wynne**  
**University of Michigan, Ann Arbor**