前回《珪藻類図説 (5)》の訂正

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Liagora tanakai, a new species from southern Japan

ISABELLA A. ABBOTT*

The systematics of *Liagora* (Nemalionaceae[1], Rhodophyceae) is probably as well known in the western Pacific as it is in any place in the world, due to the studies of YAMADA (1938), who contributed not only a monograph but a very necessary understanding of the complex characters of this variable genus.

It is very surprising, therefore, to recognize as new, a species of *Liagora* from material Takesi TANAKA had collected at Anno, Tanegashima Island. It is a pleasure to name this species for Professor TANAKA.

* Hopkins Marine Station of Stanford University, Pacific Grove, California. The work on this paper was done while the author was visiting Japan in 1965 under the auspices of the U.S.-Japan Cooperative Science Program (Grant No. GF-219). I wish to express my great appreciation for the successful visit to Professor Jun TOKIDA and the Faculty of Fisheries at Hokkaido University, Hakodate, who were my official hosts, and to Professor Takesi TANAKA, Faculty of Fisheries, Kagoshima University for his great kindnesses and cooperation.

1) *Liagora* is traditionally placed in the Helminthocladiaceae. Reasons for a change in family name, and the status of this genus may be found in DOTY and ABBOTT (1964) and ABBOTT (1965), for which references, see Literature Cited at the end of this paper.

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Liagora tanakai ABBOTT, new species

Planta ad 54 cm alt. attingens, laxe pinnatim ramosa, lubrica, valde calcarea in sicco. Filamenta alimentaria paulo ramosa. Ramus carpogoniophorus 3 vel 5 cellulis constructus. Cystocarpium specie nudum, filamenta praefecta sterilia ramum carpogoniophorus sustinentibus. Spermatangia haud capitata, terminalia et lateralia in cellulis parvis ramorum fertilium.

Plants up to 54 cm tall, branches up to 2 cm at broadest, the lower portions bare of small branches and with a felt-like surface; the upper portions densely covered with radially disposed branchlets up to 1 cm long (Fig. 1). Branching irregular (resembling *Liagoropsis*) from a clear conical holdfast, with 3 or 4 leading branches. Assimilatory filaments of 4–5 dichotomies, branching near the tips, the lower dichotomies long, with 5–6 cells separating the dichotomies; lower cells cylindrical to slightly wider through the center; upper cells obovate to nearly spherical, the tips of the free cells frequently with hairs. Cells of the central axis of nearly uniform cylindrical shape, inconspicuous.

Species dioecious, female plants larger than male plants. Carpogonial branches of 3–4 cells, laterally produced, borne low on the assimilatory filaments (Fig. 2), deflecting, as it matures, the vegetative branch on which it is borne. Sterile filaments arise from the vegetative cell supporting the carpogonial branch, and from cells both below and above this supporting cell, developing early (Fig. 3) and in large number but remaining below the developing cystocarp. Mature cystocarp (Fig. 4) prominent, 250–300 μ in diameter, never developing beyond the penultimate cells of the adjacent assimilatory branches. After fertilization, there is no fusion of the cells of the carpogonial branch, but a widening of pit connections may take place here and in the vegetative cells subtending the branch. Spermatangia (Fig. 5) in dense terminal finger-like clusters, nearly capitate, and borne along the sides of the ultimate cells.

Type Specimen: Leg. T. TANAKA 19655, at Anno, Tanegashima Island in shallow water. The holotype is a female plant about 50 cm tall with several leading branches 2–4 mm broad (TANAKA herbarium, Faculty of Fisheries, Kagoshima University). A co-type, resembling the type, is in my herbarium, and is represented in Figure 1. Syntypes (32 specimens)

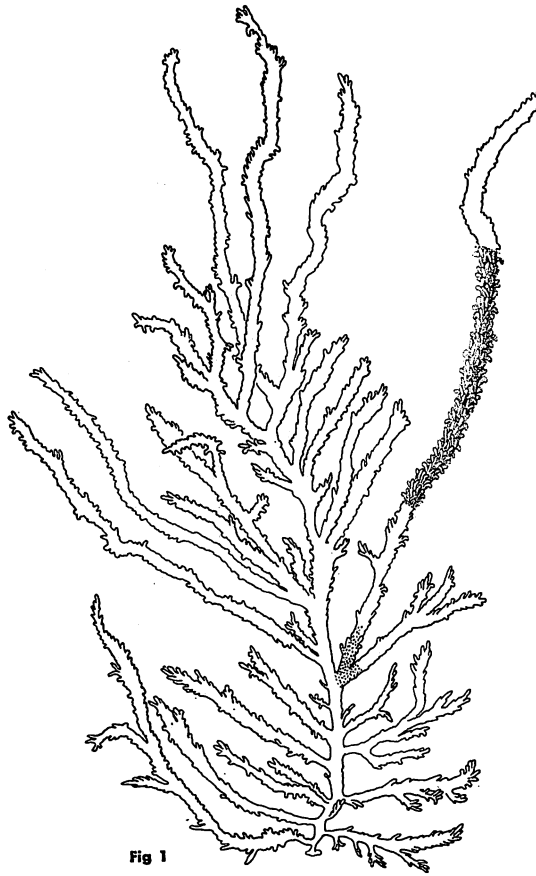

Fig. 1. Habit of co-type specimen (in Herb. ABBOTT) from Anno, Tanegashima Island, leg. T. TANAKA.

are in the TANAKA herbarium.

This new species may be distinguished from all other species of *Liagora* by the low position of the carpogonial branch, and by the subsequent development of the cystocarp which never forms an involucre of sterile filaments but has these filaments basal to the cystocarp. In both of these characteristics it resembles species of *Trichogloea* more than it does *Liagora*. Furthermore, the mature cystocarp strongly resembles that of *Trichogloea* since the adjacent vegetative branch is

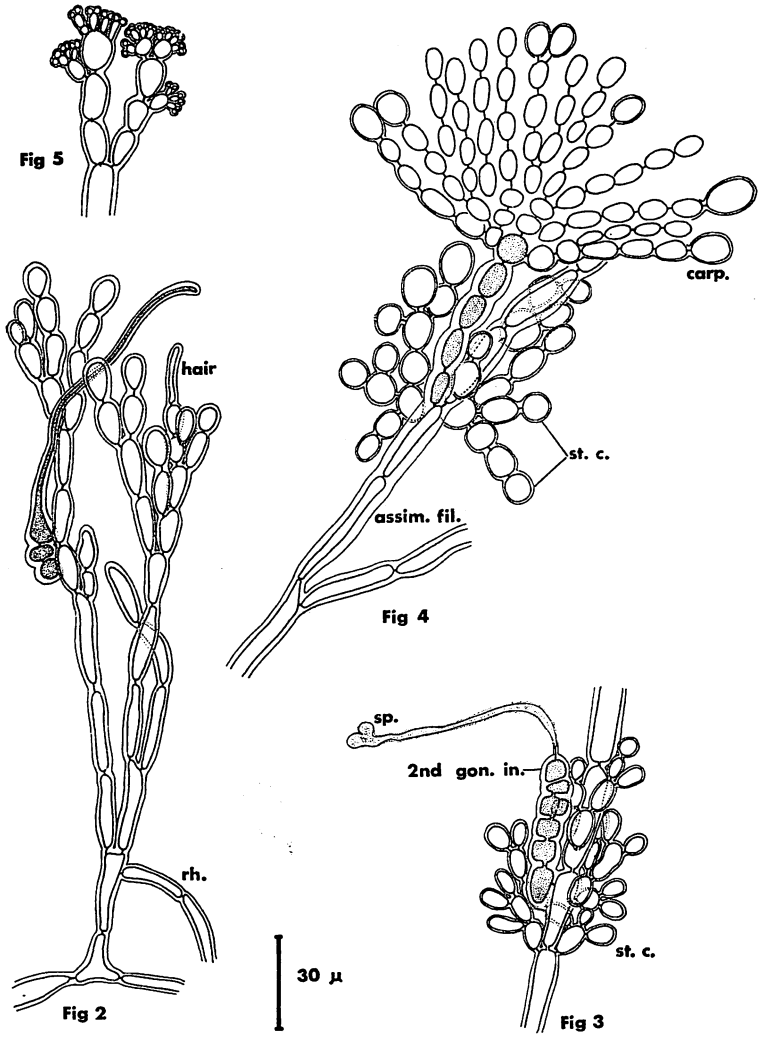

Fig. 2. Assimilatory filaments with carpogonial branch (stippled) and showing a rhizoid and basal (central axial) filament.

Fig. 3. Fertilized carpogonium showing second gonimoblast initial, spermatium on the trichogyne, and relation of sterile cells to developing gonimoblast.

Fig. 4. Optical longitudinal section of maturing cystocarp, showing terminal carpospores, carpogonial branch without fusion of its cells and sterile cells restricted below the cystocarp.

Fig. 5. Optical lateral view of termiral and lateral spermatangial clusters.

strongly deflected or is lost by this stage and the cystocarp appears terminal to a branch as it does in *Trichogloea*. An additional difference from other species of *Liagora* is shown by the spermatangia which are borne in finger-like clusters of the Validae group (YAMADA, 1938), but branching so thickly as to be nearly capitate, a feature of the Farinosae group (YAMADA, 1938). Moreover, spermatangia are also found in alternate or opposite lateral clusters on some of the top cells of the male filaments, a position they occupy in *L. pinnata* (YAMADA, 1938) and *L. papenfussii* (ABBOTT, 1945) which are members of the Farinosae group.

Liagorophila endophytica YAMADA (1944) is present in this species. Observations on this interesting species are being presented elsewhere.

Summary

A new species of *Liagora*, *L. tanakai*, from Tanegashima Island in southern Japan, is described. It is distinguished by having no sterile involucral filaments around the cystocarp, but bears sterile filaments around the base of the cystocarp only. In the course of development, the cystocarp which is borne in a low position on the assimilatory filaments, deflects, the adjacent vegetative branches so that the cystocarp appears to be naked and terminal when mature, and which is the condition in *Trichogloea*. The position of the spermatangia and their structure show relationship to two groups of species within the genus *Liagora*.

摘　　要

種子ガ島産のコナハダ属新種 *Liagora tanakai* を記載した。本種の特徴は，嚢果をとりまく苞状の中性糸状枝を欠き，中性糸状枝は嚢果の基部の周囲だけにあることである。同化糸の下部に生ずる嚢果は，発達の過程で近くの栄養枝を曲げさせ，そのため成熟時には裸出して頂生の観を呈する。この点，Trichogloea の性質と一致する。精子器の位置と構造は，Liagora 属内に分けられている群の二つの，いずれにも関係あることを示している。

〔附記：本篇はアボット女史の滞日中の研究の成果の一つで，幹事の合議により英文のまま載せた。摘要には和訳を付すこととした。(時田)〕

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ABBOTT, I. A. (1964): Studies in the Helminthocladiaceae, III. *Liagoropsis*. Pac. Sci., 28, 441-452. YAMADA, Y. (1938): The species of *Liagora* from Japan. Hokkaido Univ., Fac. Sci., Inst. Alg. Res., Pap., 2, 1-34, 15 pls. ——— (1944): Notes on Some Japanese Algae X. Ibid., 3, 11-25.

Algological notes I–III

By

B. V. SKVORTZOV*

I. On new genera of colourless Flagellata genus *Silvamonas* gen. nov. of the Fam. Polytomellaceae Aragao, Ord. Polyblepharidales, Vovlocineae from São Paulo, Brasil

Description of genus *Silvamonas* gen. nov.

Cells from front view short ovoid, ovoid, long ovoid, bag-shaped, cylindrical or subcylindrical, dorsiventraly more or less depressed with 2-3 longitudinal furrows, 20-30×13-18 micr.; in upper part attenuate and broad rouded, papillate, in lower part broad runded or round-truncate, in section view more or less oblong with 5 or 6 rounded lobes; periplast distinct, thin, hyaline and not metabolic; chloroplast not present; flagalla 4, thin, about cell length; 2 contractile vacuoles near the papille; nucleus round central with a nucleole; eyespot and pyrenoids not seen; round starch grains and oil drops numerous in upper or in posterior part of the cell; asexual reproduction is by longitudinal division. Differs from genus Collodictyon Carter in more or less depressed cells, in more or less rounded ends, not lobate posterior part and lobate in section view. Differs from genus *Kuzminia* SKV. nov. gen. in rounded ends and not so depressed cells.

One species. Type of genera *Silvamonas lobata*. Hab. São Paulo,

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