

A NEW *ANADYOMENE* FROM THE TROPICAL AMERICAN SOUTH ATLANTIC

UMA NOVA *ANADYOMENE* DO ATLÂNTICO TROPICAL SUL AMERICANO

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1 — INTRODUCTION

While working with shore collected material from the northeastern states of Brazil, with the purpose of preparing a flora of the region, the junior author came across a strikingly different species of *Anadyomene* from the known *A. stellata* (Wulfen) C. Agardh and *A. saldanhae* Joly et Oliveira Filho of previous reports from the Brazilian coasts (Taylor 1960, Joly and Oliveira Filho 1969). This material, as suspected earlier, proved to be a new species, which is described herein.

2 — DESCRIPTION

Anadyomene rhizoidifera sp. n.

Plantae foliaceae saturate virides siccitate, 2,8 cm altae et usque ad 4 cm latae. Rhizoides supra nervos principales affixi in fronde excepto margine, nonnulli lumina cellularum costarum omnino confercientes. Frons 0,1-0,2 mm crassa, 2-4(5) stratis cellularum praedita, tactu aspera, e filamentis ramosis et lateraliter coalitis structa. Filamenta majora inter sese filamentis brevibus

lateralibus unicellularibusque unita, speciem flabelli componentia. Singulae costae e cellula cc. 210 u longa clavata vel apice truncata (ubi 3-4 rariusve 5 ramis sursum versus) constitutae.

Hi rami si 3 plus minusve paralleli et filamentum centrale duobus lateralibus valde longiore; si 4, duo filamenta mediana longiora quam lateralia. Omnes partes thalli saepius filamentis lateralibus unicellularibus inter cellulas nevorum principalium instructae.

Plants foliaceous, dark green when preserved, measuring up to 2.8 cm high and with a maximum width of 4 cm. Frond with a thickness varying from 0.1-0.2 mm, and rough texture, composed of a beautiful pattern of branched and laterally joined filaments. These are of two kinds main long ones (costae) joined together by densely and laterally placed, one-celled short filaments forming a fanshaped continuous structure. Each costa is formed by only one, distinctly clavate or even truncate at the distal region long cell (up to 210 u) that bears at its apex from 3 to 4 (rarely 5) similar branches directed upwards. These (when there are 3) run parallel to one another for a shorter or greater distance before the two laterals depart, each one curving to its side. When there are 3 branches usually the middle one is the longer; when there are 4 branches usually the two median ones are longer than the lateral ones, of which usually one is much shorter than the other. The costae are so placed, that in certain portions of the frond there is plenty of space to develop the filling-cells laterally, even from their bases. On the other hand in certain portions they are so closely placed together at their bases that there is no place for the filling-in cells to develop. On all portions of the frond there is only or at most two celled lateral filaments between the main costae.

The frond is from two to four (up to 5) layers of cells in thickness as seen in cross sections. The multilayered condition is attained by an over-

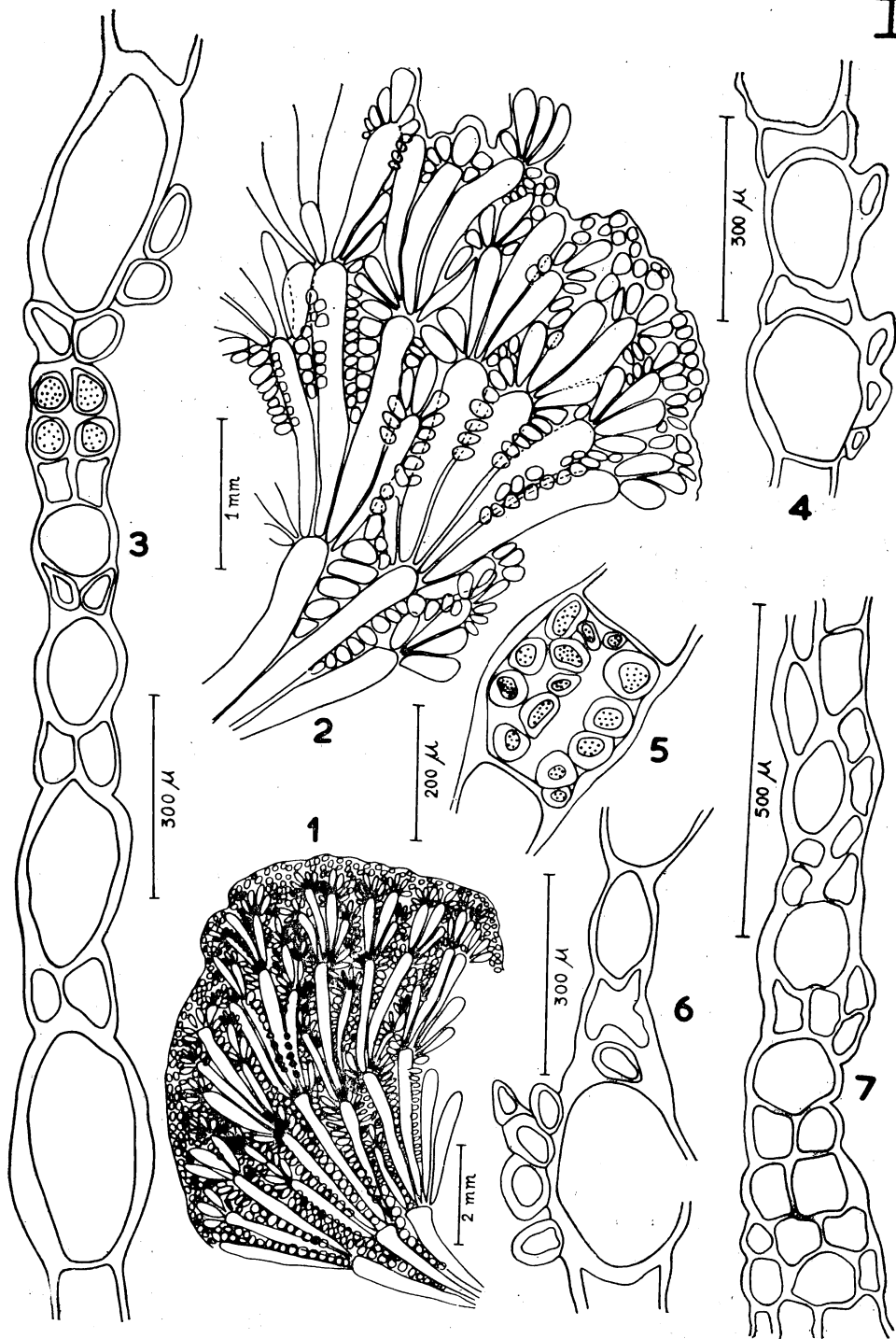
ANADYOMENE RHIZOIDIFERA

FIG. 1 — Part of a frond.

FIG. 2 — Detail of the margin.

FIGS. 3-7 — Cross sections of the frond. Note on figs. 3, 4, 6 rhizoids on the outer surface, seen also in cross section. Note on fig. 3 and better on fig. 5 the "inner" rhizoids (stapped cells). All figures are camera lucida drawings of formalin preserved material of the type collection.

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growth of the lateral cells over the costae on both sides of the lamina and also probably by tangencial divisions of these cells.

Rhizoids, one of the most distinctive features of this species, are found all over the frond but the younger marginal portions. They run parallel to the larger celled costae (figs. 4, 6) fixed to these cells on their entire length reaching in this way the base of the plant which in turn has the lace pattern hidden by these out-growths, giving a rope like appearance to the region. Strangely as it may seem some of these rhizoids in some way, penetrate the larger costae, filling completely its interior (figs. 3, 5), doubtless reinforcing the frond.

Type: From "Praia do Gaibú", municipality of Cabo, State of Pernambuco. Coll. S. M. B. Pereira on July 25, 1968. Deposited at the Phycological Herbarium, Department of Botany, University of São Paulo. SPF 2636.

Isotype: Same locality and same collecting data.

Deposited at the Herbarium of the "Laboratório de Ciências do Mar". University of Pernambuco.

3 — DISCUSSION

From the description and from the figures it can easily be seen that our plant is very different from the four other corticated species in the genus *Anadyomene*.

- A. plicata* C. Agardh, has a different pattern of construction of the costae as compared with our plant. Each vein is multicellular, i.e., each portion is composed of a few, successively placed, large cells before it branches on the apex, besides the fan pattern of branching of the main veins (cf. De Toni 1889, p. 369 and Weber van Bosse 1913, p. 75, figs. 16-17).
- A. aruensis* Zanardini, according to De Toni's description is very similar to the above mentioned species (cf. De Toni, 1.c., p. 370).
- A. brownii* (Gray) J. Agardh, has a similar pattern of construction of the veins being each portion composed of two to three segments (cells) before branching, besides the typical fan-shaped pattern of the main veins (cf. De Toni, 1.c., p. 370 and Weber van Bosse 1913, p. 75).
- A. wrightii* Gray, also has a similar pattern of construction regarding the veins, i.e., each one is formed by some cells; this species has also a

very different pattern of construction of the blade (cf. Okamura, 1908, p. 198, t. 40 figs. 1-6, 5-6 are especially good), Weber van Bosse, l.c., p. 73, figs. 14-15 and Borgesen 1940, p. 32, fig. 9).

From all these species, our plant differs markedly by having this strong development of rhizoids on the surface that obliterates the frond structure but the younger marginal portions.

4 — ACKNOWLEDGMENT

We want to renew our thanks to Dr. Carlos Toledo Rizzini for the careful Latin diagnose.

5 — SUMMARY

This paper describes *Anadyomene rhizoidifera* (Chlorophyta, Siphonocladiales) as a new species in the group of corticated species. A comparison with previously known species in the same group is also made.

6 — SUMÁRIO

O presente trabalho descreve *Anadyomene rhizoidifera*, como uma espécie nova dentro do grupo de espécies com fronde corticada. É feita uma comparação com todas as outras quatro espécies até agora conhecidas, neste mesmo grupo.

7 — BIBLIOGRAPHY

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