LEVRINGIELLA POLYSIPHONIAE A NEW SPECIES OF PARASITIC RED ALGAE (RHODOPHYTA--RHODOMELACEAE) FROM BRAZIL.

LEVRINGIELLA POLYSIPHONIAE, UMA NOVA ESPÉCIE DE ALGA VERMELHA PARASITA (RHODOPHYTA-RHODOMELACEAE).

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RESUMO

O trabalho descreve uma nova espécie de *Levringiella, L. polysiphoniae,* com base em material coletado no litoral do Estado de São Paulo. As plantas foram encontradas crescendo sobre *Polysiphonia denudata.* Esta é a primeira citação do gênero *Levringiella* para o Oceano Atlântico.

ABSTRACT

A new species of *Levringiella, L. polysiphoniae* Oliveira Filho & Ugadim is described from material collected on the coasts of São Paulo State, Brazil. The plants were found growing on *Polysiphonia denudata.* This is the first reference to the genus *Levringiella* for the Atlantic Ocean.

INTRODUCTION

The marine flora of Ubatuba region, located on the north of São Paulo State, is the best known on Brazilian coasts, thanks to the numerous studies of Joly et al (cf. Joy 1965). However, since the publication of the flora of this region, some other species not known on the area were found and a few new species have been added to the former list (Joly & Sazima 1970; Oliveira Filho & Braga 1971).

Recently we came across a minute Rhodomelaceae, growing on *Polysiphonia denudata* (*Dillwyn*) Kuetzing, that has the general characteristics of the genus *Levringiella* Kylin, though being quite different from the other two species previously ascribed to this genus for the Pacific region.

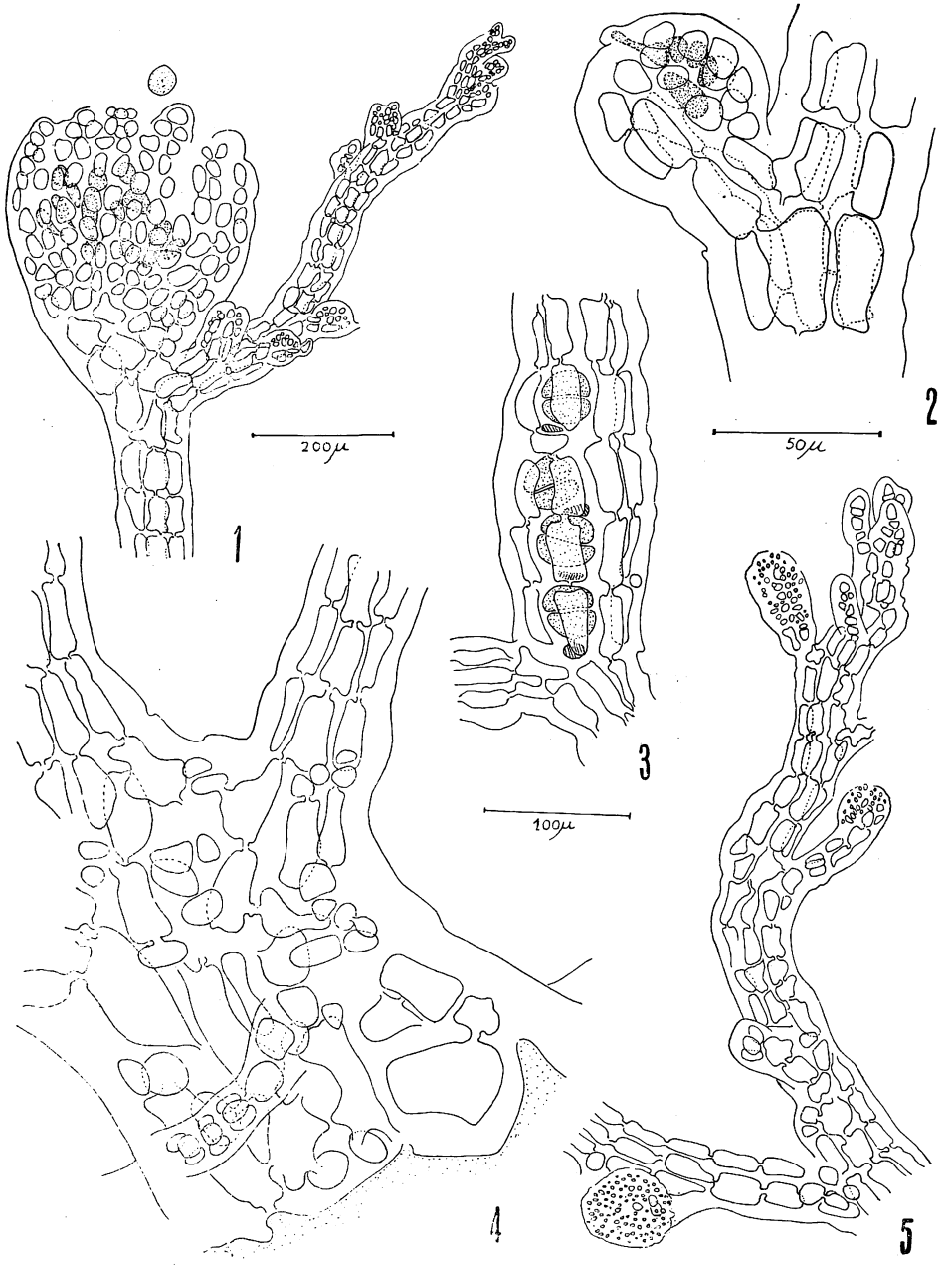
DESCRIPTION

Plantae crescentes super *Polysiphonia denudata,* metientes circiter duo milimetra in altitudinem; ima pars aliqua ex parte endophitica; propagationem ramorum subdichotomicam, habentens ramos cum sex pericentralibus ecorticatis et trichoblastos raros parum evolatos. Cystocarpia ovalata. Antheridia globoso ovalata. Sporangia disposita in ramis normalibus, unum singulo segmento, in linea recta partibus quatuor et quinque segmentorum; normali modo divisa in medium, perficiendo vix duo sporos, prae ceteris perficiendo quatuor sporos cum divisionibus triangule divisis.

Plantae masculinae, foemininae et sporicae inventae fuerunt mensi januarii, anno 1971, super *P. denudata,* in litore Lazari, municipio Ubatubae, Sancti Pauli, in Brasilia.

Plants measuring up to 2 mm high, growing on *Polysiphonia denudata;* attached to the host by means of basal cells that grow between the pericentral cells of the *Polysiphonia* disorganizing the host tissue; branching subdichotomous, with 6 pericentral cells, uncorticated; trichoblasts scarce, poorly developed and present only near the apex; branches measuring 66-169 μ in diameter near the base, with segments measuring 65-78 μ long. The reproductive structures are the ones known for the family. Cystocarps globoids measuring about 350 μ in diameter; antheridial branches globoids or elongated measuring about 60 μ lenght. Sporangia disposed in strainght lines for a few segments, but not for the entire fertile branch; only one per segment, measuring 38-44 μ in diameter. Strickingly all of the apparently ripen sporangia we

1 — Female fertile branch, showing a ripe cystocarp and many developing ones;
Ramo feminino fértil com um cistocarpo maduro e vários em desenvolvimento;
2 — Detail of a carpogonial branch;
Detalhe de um ramo carpogonial;
3 — Sporic branch showing the form and position of the sporangia;
Ramo espórico mostrando a forma e posição dos esporângios;
4 — Basal portion of the parasite;
Porção basal do parasita;
5 — Male fertile branch with several antheridial branches.
Ramo masculino fértil com vários corpos anteridiais.


200μ
1
50μ
2
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100μ
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5

found, except one, were divided precisely in the middle, so producing only two spores. Only one was found with four spores, and then tetrahedricaly divided. However, to be sure of the bisporangial nature of this plant, fact unique in the family, it would be necessary to work with alive specimens, which we do not have at the moment. Material examined: Syntipes SPF 2876, male, female and sporic plants growing on the same host, *P. denudata,* associated with *Ceramium comptum* Boergesen, collected ashore at praia do Lazaro, Municipality of Ubatuba, SP., Brazil. Oliveira Filho coll., 9/Jan./1971. Probably a deep water species since *P. denudata* is not to be found at the tidal level at this place.

DISCUSSION

The genus *Levringiella* was erected by Kylin (1956, p. 517), in order to receive two species of *Stromatocarpus* Falkenberg, namely *S. microscopicus* Levring (1941, p. 657) and *S. gardneri* Setchell (1923, p. 395). Kylin (l. c.) distinguished the two above mentioned species from *Stromatocarpus parasitica* Falkenberg (1897, p. 478), the type species of the genus, with base on the organization of the tetrasporic branches. In *Levringiella* the sporangia are disposed in straight lines in the branches, without branches primordia, and the apical cells form the segments through transverse divisions, while in *Stromatocarpus* the sporangia are disposed in a spiral line, in branches with branche's primordia that grow through oblique divisions of the apical cell.

In accepting Kylin's circumscription of the two genera, the Brazilian plants follow the pattern described for *Levringiella* though the sporangia seem to divide in pairs rather than in tetrads.

Of the two species of *Levringiella* described up to now, our plant differs from both with respect to the host plant: the Brazilian plant growing upon *Polysiphonia denudata, L. microscopica* growing on *Pterosiphonia sp* and *L. gardneri* on *Pterosiphonia baileyi.* Concerning parasitic plants the authors usually consider the specificity of host x parasite association as a reliable character at the species level.

From *L. gardneri* our plant differs in the number of pericentrals, having 6 instead of 4. Our plant gets closer of *Levringiella microscopica* (Levring) Kylin but seems to have always 6 pericentrals and not 5-7 as was described for that species: it differs also from *L. microscopica* because its antheridial bodies are not so elongated and not disposed in dense spirals.

We had no doubt in recognizing this taxon as a new one, but it was a hard task in deciding its rank, if a new genus or a new species. For a start,

it was not considered a *Polysiphonia* species because it has some characterís-tics usually attributed to supposed parasitic plants, and *Polysiphonia* is "de-fined" (Kylin 1956, p. 494) as "nicht parasitish pflanzen". However this parasitary relation between the two plants is only assumed with based on morfo-logical criteria, and then not proved. If one accept the artificial, but very useful scheme of Kylin, this plant fits well in the genus *Levringiella* despite the large discontinuous distribution, since the other known species of this genus are referred only to the Pacific Ocean.

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