

GYALECTIDIUM AURELII (OSTROPALES: GOMPHILLACEAE), A NEW FOLIICOLOUS LICHEN FROM THE STATE OF MATO GROSSO, BRAZIL

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RESUMO – (*Gyalectidium aurelii* (Ostropales: Gomphillaceae), um novo líquen foliícola do Estado de Mato Grosso, Brasil). O líquen *Gyalectidium aurelii* é descrito como novo, tendo sido encontrado sobre folhas de Meliaceae na Chapada dos Guimarães, no Estado do Mato Grosso, Brasil. O novo táxon caracteriza-se por apresentar hifóforos marginais muito largos, com escamas projetando-se horizontalmente sobre o substrato. *G. aurelii* distingue-se de espécies semelhantes, como *G. fantasticum* e *G. paolae*, por seus hifóforos, os quais são incurvados (seguindo o contorno do talo) e têm a margem inteira, assim como pelo talo irregularmente verrucoso e não areolado. O gênero *Gyalectidium* contém agora 37 espécies.

Palavras-chave – espécie nova, Chapada dos Guimarães, Meliaceae

ABSTRACT – (*Gyalectidium aurelii* (Ostropales: Gomphillaceae), a new foliicolous lichen from the State of Mato Grosso, Brazil). The new species *Gyalectidium aurelii* is described from leaves of Meliaceae collected in Chapada dos Guimarães, in the State of Mato Grosso, Brazil. The new taxon is characterized by very broad, marginal hyphophores with scales that project horizontally from the leaf margin and are closely appressed to the substrate. *G. aurelii* is distinguished from similar species, such as *G. fantasticum* and *G. paolae*, by its hyphophores being incurved (following the thallus outline) and having an entire margin, and further by its irregularly verrucose rather than areolate thallus. The genus *Gyalectidium* now comprises 37 species.

Key words – new species, Chapada dos Guimaraes, Meliaceae

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Introduction

The lichen genus *Gyalectidium* Müll. Arg. comprises mostly foliicolous species which are found in all tropical and subtropical rainforests throughout the world (Ferraro *et al.* 2001). Like other genera in the Gomphillaceae, *Gyalectidium* is characterized by hemiangiocarpous apothecia and non-amyloid hymenium, branched and anastomosing paraphyses, annelaseous asci, and conidiomata of the hyphophore type (Vezda 1979; Vezda & Poelt 1987; Lücking 1997; Ferraro *et al.* 2001). *Gyalectidium* can be recognized at the genus level by its immersed-erumpent apothecia (Fig. 1A), with zeorine margin (both true excipulum and thalline margin present) and its squamiform hyphophores (Fig. 1B-F), with the conidial hyphae (diahyphae) being produced at the base of variously shaped scales. Most other genera in the family have setiform hyphophores which produce the diahyphae at their tips.

For a long time, the genus was believed to be poor in species, but detailed studies revealed an unexpected diversity, with 29 species accepted in a recent world monograph (Ferraro *et al.* 2001). Soon after the monograph was published, no less than eight further new species were discovered in collections of foliicolous lichens from Mexico and Chile (Herrera-Campos & Lücking 2002; 2003; in prep.; Lücking *et al.* 2003).

In this paper, we describe another new species of the genus, discovered in material collected by A. Schinini and G. & M. Hatschbach in the State of Mato Grosso in Brazil, in 1997.

Gyalectidium aurelii Ferraro & Lücking sp. nov.

Sicut *Gyalectidio fantastico* sed hyphophoris incurvatis minoribusque differt. - Type. **BRASIL. Mato Grosso:** Município Chapada dos Guimarães, surroundings of Chapada dos Guimarães, on leaves of *Meliaceae*, II to VIII/1997, A. Schinini, G. & M. Hatschbach 33942 (CTES, holotype).

Thallus foliicolous, epiphyllous, crustose, forming small, rounded to very irregular, sometimes marginally dispersed patches 1-3(-5)mm across and 10-20µm thick, with a cartilaginous, corticiform layer, irregularly to coarsely verrucose due to encrustation with calcium oxalate crystals (near the hyphophores with larger crystalline clusters), pale brownish or yellowish grey to pale greenish; verrucae 0.05-0.15mm diam., whitish. Phycobiont a species of *Trebouxia*, cells 5-10µm diam. Apothecia not observed. Hyphophores frequent, formed at the thallus margin, projecting horizontally, very broadly squamiform and flabellate, usually recurved or irregularly bent (following the thallus outline), their margin entire, lacking appendages, 0.1-0.15mm long × 0.4-1mm wide, greyish brown but uppermost part pale. Diahyphae branched throughout, moniliform, segments sausage to drop-shaped, 5-7 × 1.5-2µm, colourless, with scattered algal cells 3-5µm diam.

This new species is dedicated to Aurelio Schinini for his invaluable collections which add considerably to the knowledge of the lichen flora of northern Argentina and southern Brazil.

As stated in the introduction, the hyphophore scales in *Gyalectidium* are very variable and provide important characters to distinguish between species (Fig. 1B-F). While some taxa, such as the type species *G. filicinum*, have erect scales protruding from the thallus surface (Fig. 1B), in others the scales are adnate to the thallus (Fig. 1C) and often marginal (Fig. 1D-F). Mostly, the scales are unpigmented and whitish but might be darkened to pure black in a few taxa. Other specific characters are the presence of calcium oxalate crystals and their distribution in the thallus: they either form verrucae or large, sometimes completely confluent areoles.

Gyalectidium aurelii is characterized by adnate, marginal, dark hyphophore scales, in combination with a verrucose thallus (Fig. 1F). The species resembles two other species with broad, dark, marginal hyphophores with scales

that project horizontally and are closely appressed to the substrate, viz. *G. fantasticum* Ferraro & Lüking (Ferraro *et al.* 2001) and *G. paolae* Herrera-Campos

& Lüking (Herrera-Campos & Lüking 2002). However, these two species have an areolate rather than verrucose thallus (Fig. 1D-E), and while the hyphophores of *G. paolae*

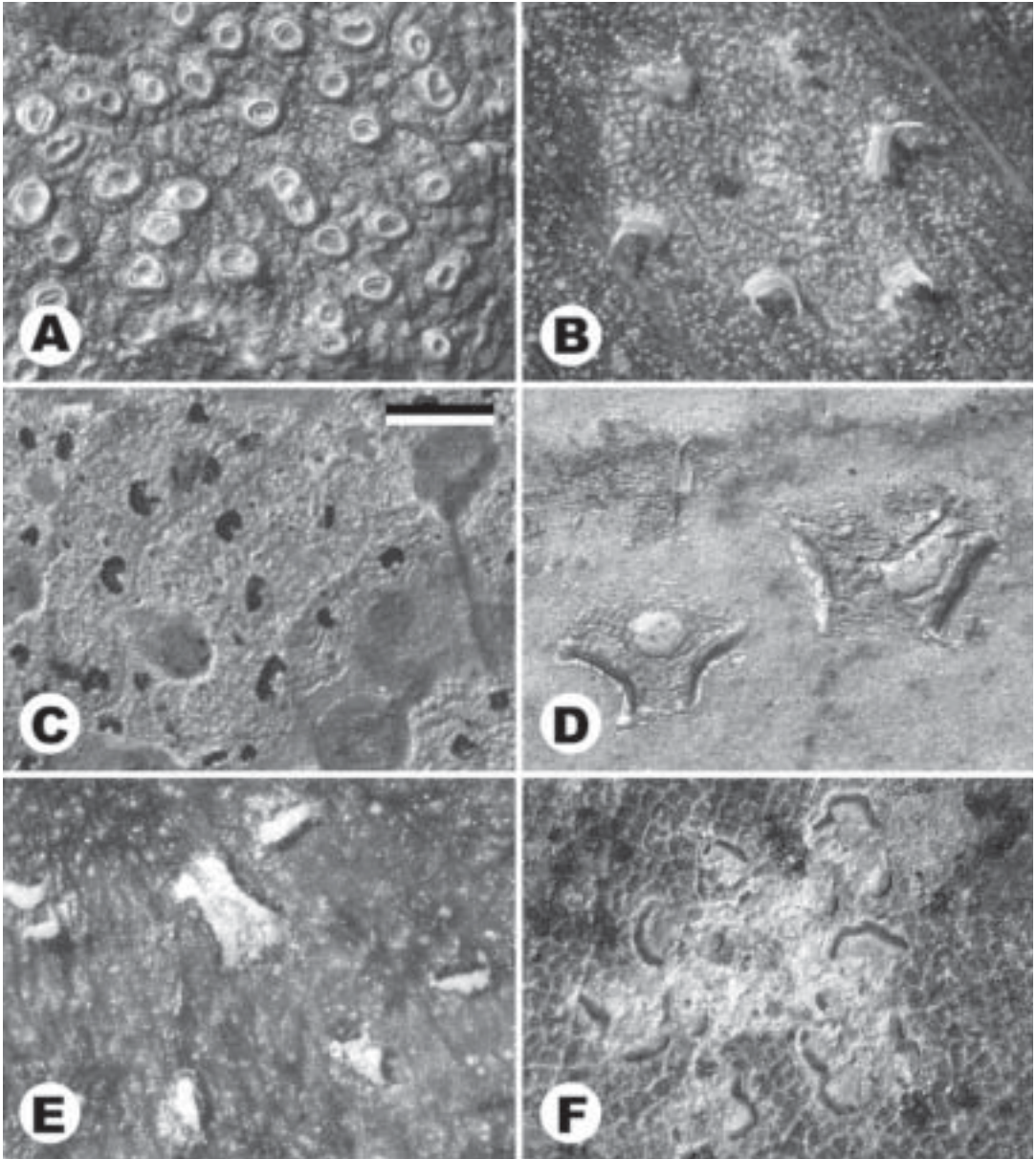


Figure 1. Thalli and hyphophores of *Gyalectidium aurelii* and related or similar species. A. *G. filicinum* (apothecia). B. *G. filicinum* (hyphophores). C. *G. imperfectum* (hyphophores); note the fine thallus verrucae. D. *G. fantasticum* (hyphophores); note the crystalline areoles. E. *G. paolae* (hyphophores); note the large crystalline bulges. F. *G. aurelii* (hyphophores). Scale = 1mm, in D = 1.5mm, in E = 0.5mm.

are smaller and irregularly dissected, those of *G. fantasticum* are larger, usually recurved, and provided with two acute, lateral appendages. Another superficially similar species is *G. imperfectum* Vezda (Vezda 1994). It agrees with *G. aurelii* in the verrucose rather than areolate thallus (Fig. 1C), but its hyphophore scales are greatly reduced, leaving the diahyphal masses visible as dark, reniform spots on the thallus surface.

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