

A new record of *Rhynchostegiopsis costaricensis* H.Rob. & D.G.Griffin (Leucomiaceae: Bryophyta) from Colombia, South America

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Abstract – *Rhynchostegiopsis* Müll.Hal. is a morphologically variable genus of five species. They are found in moist, humid habitats in montane forests, in Mexico, Central America, the Caribbean, tropical Andes, and south-eastern Brazil. One species, *R. costaricensis* H.Rob. & D.G.Griffin, distinctive because of its ‘tufts’ of propagules on the dorsal leaf surface, was considered to be a narrow Central American endemic (Costa Rica, Honduras). A recently discovered collection from Colombia confirms the presence of this species in northern South America.

***Rhynchostegiopsis costaricensis* / Colombia / Leucomiaceae / morphology / leaf propagules / Hookeriales**

Résumé – *Rhynchostegiopsis* Müll. Hal. est un genre morphologiquement variable comprenant cinq espèces. Elles occupent des habitats humides des forêts montagnardes du Mexique, de l’Amérique Centrale, des Caraïbes, des Andes tropicales, et du sud-est du Brésil. Une espèce, *R. costaricensis* H.Rob. et D.G.Griffin, distincte par ses ‘touffes de propagules’ sur la surface dorsale des feuilles, était considérée comme endémique de l’Amérique centrale (Costa Rica et Honduras). Une récente récolte en Colombie confirme la présence de cette espèce en Amérique du Sud.

***Rhynchostegiopsis costaricensis* / Colombie / Leucomiaceae / morphologie / propagules des feuilles / Hookeriales**

INTRODUCTION

Rhynchostegiopsis is a small pleurocarpous moss genus of five species (*R. brasiliensis* Broth., *R. carolae* Crosby, *R. costaricensis* H.Rob. & D.G.Griffin, *R. flexuosa* (Sull.) Müll.Hal., and *R. tunguraguana* (Mitt.) Broth.) that are restricted to the Neotropics. This genus is characterized by its ecostate leaves with serrate margins (Fig. 1 a) and lax, elongate median cells; two-celled axillary hairs; furrowed exostome teeth that are horizontally striate below; endostomial cilia; rostrate opercula; and cucullate calyptrae (Price, 2001). Although *Rhynchostegiopsis* shares

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several of its key morphological features with different families (Hypnaceae, Hookeriaceae), it was retained in the Leucomiaceae (Hookeriales) based on overall sporophyte and gametophyte morphology, including stem anatomy and its cucullate calyptrae.

Rhynchostegiopsis costaricensis

This species was first described by Robinson and Griffin (1975) based on several specimens collected from Parque Nacional Volcán Poás in the province of Alajuela, Costa Rica. The authors noted the distinctive leaf propagules that formed ‘tufts’ on the dorsal surface of the upper stem leaves, visible with the naked eye. They also described an area of differentiated cells, or patches, at the base of the leaves consisting of 2–4 rows or a triangular area of differentiated cells present on some of the leaves (Fig. 1 a-c). These differentiated cells were considered to be broader and longer with much thicker walls than the cells in the equivalent position in other leaves. These patches can be found on leaves that have leaf propagules, but are also present on leaves even if propagules are not found (Price, 2001).

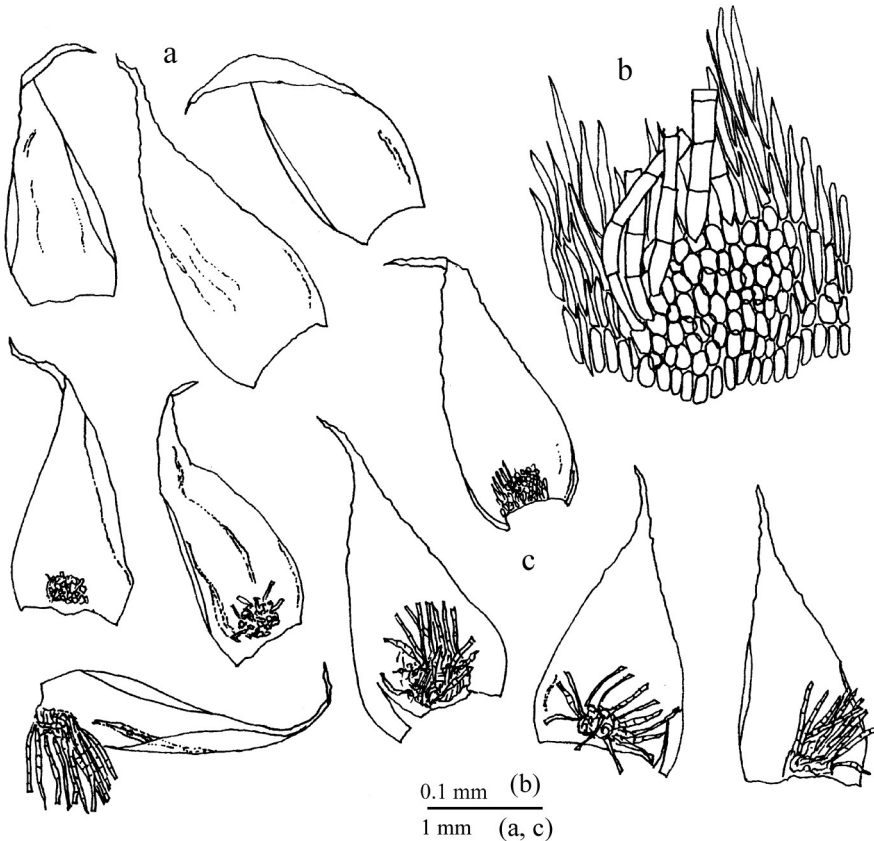


Fig. 1. *Rhynchostegiopsis costaricensis* H.Rob. & D.G.Griffin. **a.** Three leaves that lack leaf propagules. **b.** A leaf with a patch of differentiated cells and propagules at leaf base. **c.** A selection of seven leaves with leaf propagules. Drawn from *van Reenen 2777* (GOET).

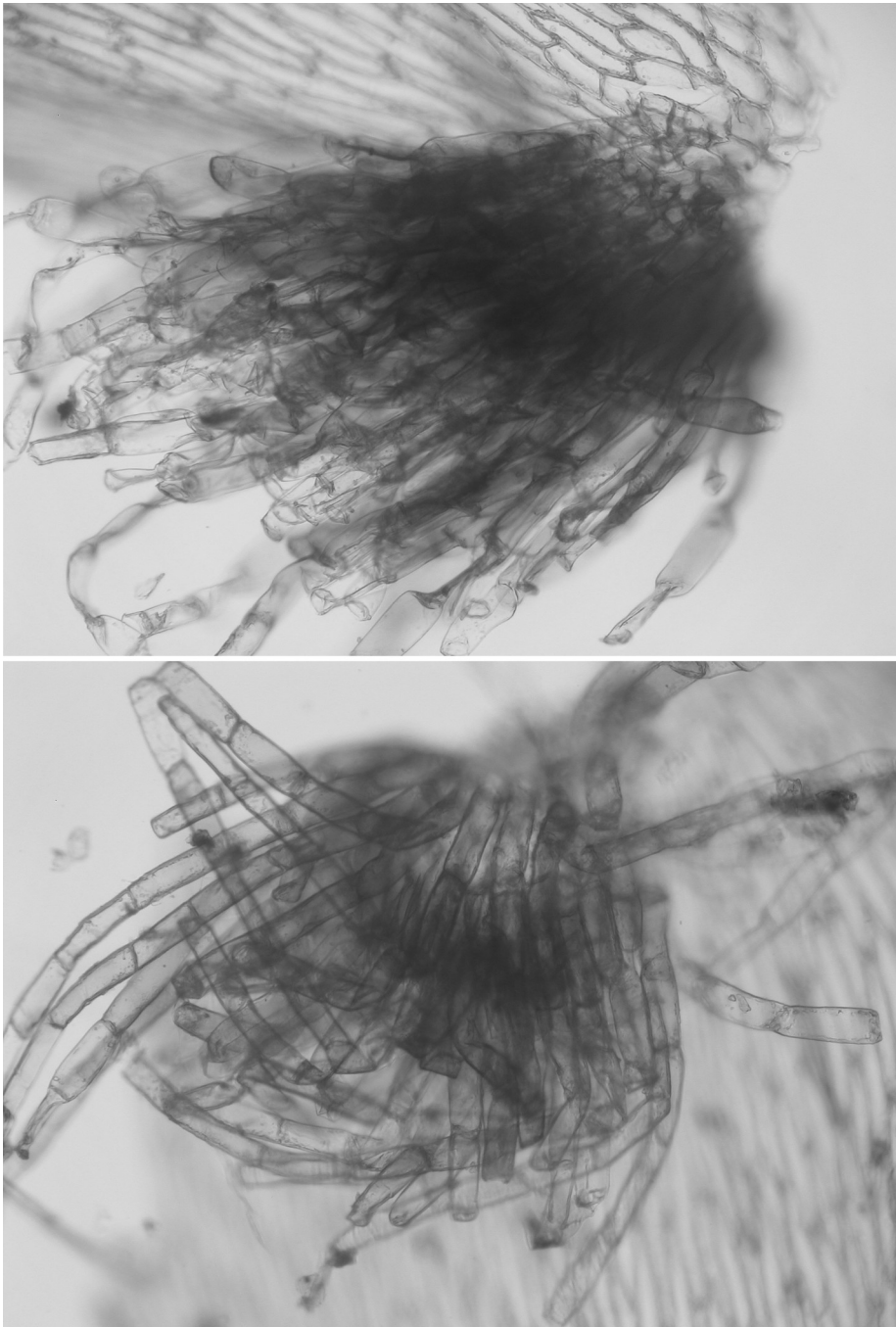


Fig. 2. Photographs of *Rhynchostegiopsis costaricensis* H.Rob. & D.G.Griffin. **a.** Showing the leaf propagules on the dorsal leaf surface. **b.** The leaf propagules. Photographed from *van Reenen 2777* (GOET).

The prominent leaf propagules in *R. costaricensis* are cylindrical structures, of 8–15 cells long which are often fragile above (Fig 2 a, b). They are in circular clusters located on the dorsal leaf surface close to the leaf base (Fig. 1 b). A selection of leaves with leaf propagules are shown in Figure 1, c. They are dark reddish in colour at base becoming green to hyaline above.

Although propagule production is not species specific in *Rhynchostegiopsis*, propagule development from the dorsal leaf surface is unique to *R. costaricensis*. Propagules observed at the leaf base in the type specimen of *R. tunguraguana* and one other collection of this species from NY (*Spruce 1048*; *Ramírez 9039*) were more loosely aggregated and much less well-developed than those seen typically in *R. costaricensis*. They appeared to be derived from the stem tissue at the very base of the leaf rather than on the dorsal leaf surface as in *R. costaricensis*. Leaf propagules have not been described in the second Central America endemic species, *R. carolae*, which is known from Costa Rica and one locality in Panama (Crosby, 1976). Neither have they been seen in *R. flexuosa* which occurs most frequently in Central America and the Caribbean.

Rhynchostegiopsis costaricensis has been found growing on rotting logs, leaf litter or on soil and less frequently as an epiphyte on the trunks or twigs of living trees between 2480–3130 m in elevation (Price, 2001). Illustrations and descriptions of this species can be found in Robinson & Griffin (1975) and Price (2001). It was previously reported only from Honduras and Costa Rica. The specimen from Colombia is the first record of this species from South America.

Specimen examined: Colombia, Meta, Páramo de Sumapaz Cordillera Oriental, Quebrada El Buque, lado sur. Selva andina muy húmeda de *Weinmannia rollottii*, *W. c.f. fagaroides*, *Nurolepis aperta* y *Plagiochila* spp. predominantes. Epiphytic, 3100 m, 9 July 1981, G. Van Reenen 2777 (GOET).

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