



Pilostyles boyacensis, a new species of Apodanthaceae (Cucurbitales) from Colombia

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Abstract

Pilostyles boyacensis, a new Apodanthaceae from Colombia, is described and illustrated. The species was found between 2000 and 2415 m elevation, parasitizing *Dalea cuatrecasasii* (Fabaceae: Papilionoideae) in dry interandean valleys of the Colombian Eastern Cordillera. The species can be distinguished from its congeners by the monoecious condition, the small size (1.5–2.5 mm in diameter) of the almost cleistogamous and tubular flowers, and the presence of five or six white petals and three to four rows of pollen sacs. The locations of the new species are among the highest for the genus in the Americas, and are altitudinally isolated from the tetrapetalous *P. thurberi*, from S United States and Mexico, *P. mexicana* from Mexico, Honduras and Guatemala, *P. blanchetii* from Jamaica, Cayman Islands, Costa Rica, Panama, Venezuela, Brazil and N Argentina, and *P. berteroi* from Peru, Bolivia, Chile and Argentina, none of which (except *P. thurberi*) parasitizes *Dalea*. The *Dalea*-host life style suggests that *P. boyacensis* is closely related to *P. thurberi*. As in other *Pilostyles*, the new species exhibits isophasic growth, but unlike most species of the genus, both staminate and carpellate flowers are often found adjacent in the same flower row. The species sets flowers and fruits continuously at least from late November to late March, which corresponds to the driest months of the year in these areas. *Camponotus* ants and a black shield bug are frequent visitors to flowers and fruits, and might play an active role in seed dispersal.

Key words: Andean flora, Cucurbitales, Flora of Colombia, parasitic flowering plants, neotropical flora

Resumen

Pilostyles boyacensis, una nueva Apodanthaceae de Colombia es descrita e ilustrada. La especie fue encontrada entre 2000 y 2415 m de altitud, parasitando *Dalea cuatrecasasii* (Fabaceae: Papilionoideae) en valles interandinos secos de la Cordillera Oriental colombiana. La especie se distingue de sus congéneres por su condición monóica, el tamaño reducido (1.5–2.5 mm en diámetro) de las flores casi cleistógamas y tubulares, y la presencia de cinco o seis pétalos blancos y tres a cuatro verticilos de sacos polínicos. Las localidades de la nueva especie están entre las más altas del género en las Américas, altitudinalmente aisladas de los taxones tetrapétalos *P. thurberi*, del S de Estados Unidos y México, *P. mexicana* de México, Honduras y Guatemala, *P. blanchetii* de Jamaica, las Islas Caimán, Costa Rica, Panamá, Venezuela, Brasil y N de Argentina, y *P. berteroi* de Perú, Bolivia, Chile y Argentina, ninguna de las cuales (excepto *P. thurberi*) parasita *Dalea*. El parasitismo en *Dalea* sugiere que *P. boyacensis* está cercanamente relacionada con *P. thurberi*. Como en otras especies de *Pilostyles*, la nueva especie es de crecimiento isofásico, pero a diferencia de la mayoría de especies de este género, frecuentemente se desarrollan flores estaminadas y pistiladas adyacentes en la misma hilera de flores. La especie florece y fructifica continuamente por lo menos desde finales de noviembre hasta finales de marzo, los meses más secos en la región. Hormigas del género *Camponotus* y pequeñas chinches visitan frecuentemente flores y frutos, y es probable que sirvan como dispersores de semillas.

Palabras clave: Angiospermas parasíticas, Cucurbitales, flora andina, flora de Colombia, flora neotrópica.

Introduction

Apodanthaceae is one of twelve parasitic flowering plant families, and the only Cucurbitalean lineage that exhibits an extreme endophytic life style with an achlorophyllous and mycelium-like endophyte (Barkman *et al.* 2007, Filipowicz

Key to the Colombian species of *Pilostyles*

1. Flowers (specially the carpellate ones) tubular and almost cleistogamous; middle scales widely oblong; petals (5)6, bright white. Pollen sacs in 3–4 rows. Parasitizing branches of *Dalea*; restricted to Andean dry thickets of the Eastern Cordillera above 2000 meters in elevation. *P. boyacensis*
1. Flowers bell shaped; middle scales diamond-shaped, petals 4(5), purple to brown. Pollen sacs in 2 rows. Parasitizing branches of *Calliandra* and *Mimosa* in Subandean dry forests of the Colombian Western Cordillera; Jamaica, Cayman Islands, Costa-Rica, Panama, Venezuela, Guyana, Brazil, Argentina, and Uruguay *P. blanchetii*

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