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*DRYMONIA DROSEROIDES* (GESNERIACEAE), A NEW SPECIES FROM THE  
PACIFIC ANDEAN FORESTS OF COLOMBIA

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A Publication Devoted to Tropical Plants,  
with Emphasis on Epiphytic Plant Families

## DRYMONIA DROSEROIDES (GESNERIACEAE), A NEW SPECIES FROM THE PACIFIC ANDEAN FORESTS OF COLOMBIA

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**ABSTRACT.** Recent field expeditions and preliminary work on revising *Drymonia* and closely related genera have resulted in the discovery of a new plant species from Colombia. The new species, *Drymonia droseroides* (Gesneriaceae), is an unbranched terrestrial herb with reflexed spatulate calyx lobes that are covered with gland-tipped trichomes. It is only known from the type locality in the Cerro El Inglés Nature Reserve in the Serranía de los Paraguas, a mountain range on the border of the departments of Chocó and Valle del Cauca.

**RESUMEN.** La revisión preliminar de *Drymonia* y de sus géneros más relacionados, y el reciente trabajo de campo han llevado al descubrimiento de una especie nueva para la flora de Colombia. Esta especie nueva, *Drymonia droseroides* (Gesneriaceae), es una hierba terrestre, no ramificada, con los lóbulos del cáliz espatulados y cubiertos por tricomas glandulares. Es conocida únicamente de la localidad tipo en la Reserva Natural Cerro El Inglés, Serranía de los Paraguas, en el límite entre los departamentos de Chocó y Valle del Cauca.

**Key words:** Gesneriaceae, *Drymonia*, Flora of Colombia, taxonomy, Cerro El Inglés, Serranía de los Paraguas

### INTRODUCTION

The Gesneriaceae is a prominent plant family in the Andean cloud forests of South America and they are particularly diverse in cloud forests between 1000 and 2000 meters elevation where the species described here was recently discovered. Colombia is the most species-diverse country in the New World tropics for the Gesneriaceae with 32 genera and over 400 species (Kvist et al. 1998). The second and third most diverse countries for the Gesneriaceae are Ecuador with 29 genera and 240 species (Skog & Kvist 1997) and Peru with 28 genera and 150 species (Kvist et al. 2005). The new species described here was discovered during the preparation of the Gesneriaceae treatment for the Catálogo de las Plantas de Colombia and recent fieldwork to the Cerro El Inglés Nature Reserve in the Serranía de los Paraguas.

*Drymonia* is a monophyletic lineage with well-defined morphological synapomorphies that were outlined in recent phylogenetic studies (Clark & Zimmer 2003, Clark et al. 2006). The genus was described by Martius (1829) and re-circumscribed by Wiehler (1983) and Moore (1973) by the unique poricidal anther dehiscence. Wiehler (1983) described the anthers in *Drymonia* as being

“shaker-like.” In bud, the anthers are grouped coherently around the style, with their pore-like thecae facing inward. As the anthers mature, they become connate along the length of the thecae margins and at their upper ends. The individual thecae open by a short basal pore. Just before anthesis, the curvature and the differential length of the filament pairs cause the anthers to invert and pivot 180°. As the anthers are inverted, pollen falls out of the pores and is usually deposited on the thoracic dorsum of bees (Steiner 1985).

### TAXONOMIC TREATMENT

***Drymonia droseroides*** J.L. Clark & L. Clavijo, sp. nov. TYPE: Colombia—Valle del Cauca: municipio El Cairo, corregimiento El Boquerón, vereda El Brillante, sector La Pradera, Reserva Natural Cerro El Inglés. 4°44'–4°45'N, 76°16'–76°17'W, 2118–2150 meters, 28 Dec 2007, L. Clavijo, J. Betancur, A. Zuluaga, N.R. Salinas & R. Arévalo 1156 (Holotype: COL). FIGURES 1, 2.

*Drymonia droseroides* ab omnibus aliis speciebus *Drymoniae* praesentia loborum reflexorum spatulorum qui trichomatibus glandulosis teguntur in calyce differt.

**Plant** a terrestrial herb; stem erect, ca. 40 cm tall, unbranched, succulent, subquadrangular in

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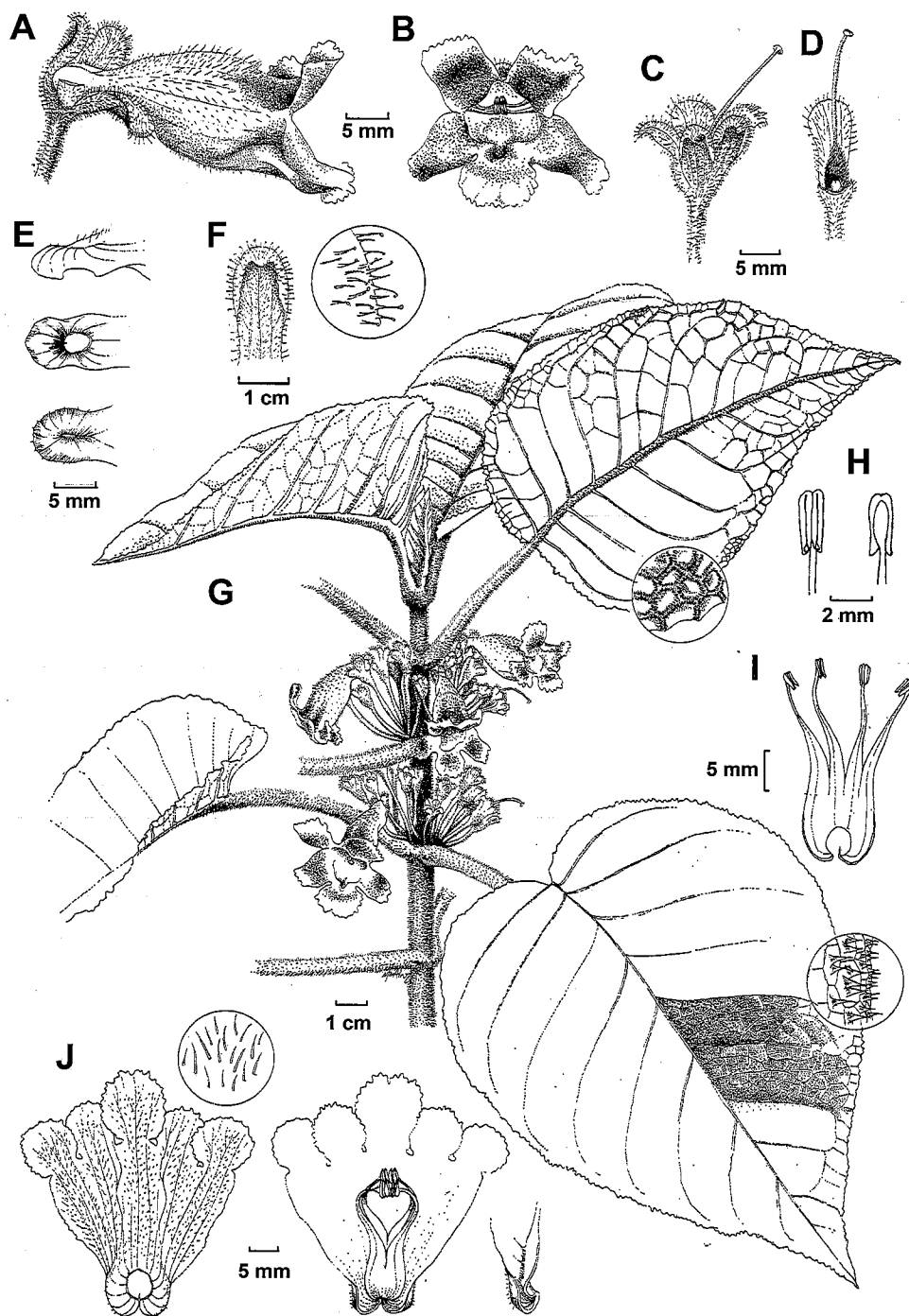


FIGURE 1. Illustration of *Drymonia droseroides* sp. nov. A. Lateral view of flower. B. Front view of corolla. C. Corolla removed to show calyx lobes and style. D. Calyx lobes and corolla removed to show gynoecium and nectary gland. E. Posterior gibbosity of corolla showing lateral, basal, and upper views. F. Reflexed calyx lobe with margins curled outward; inset showing gland-tipped trichomes. G. Habit; upper inset showing lower bullate leaf surface and lower inset showing trichomes on upper leaf surface. H. Anterior and posterior views of anthers showing basal poricidal dehiscence. I. Androecium showing basal connation of filaments. J. Interior and exterior views of corolla; inset showing exterior vestiture. (From L. Clavijo, J. Betancur, A. Zuluaga, N.R. Salinas & R. Arévalo 1156, COL).



FIGURE 2. Photographs of *Drymonia droseroides* sp. nov. A. Axillary clusters of flowers. B. Front view of mature corolla. C. Lateral view of mature corolla. (photos by L. Clavijo; from the live plant from which the holotype was collected, L. Clavijo, J. Betancur, A. Zuluaga, N.R. Salinas & R. Arévalo 1156).

cross-section, pubescent basally, velutinous apically, trichomes white when live and yellowish when dry; nodes prominent, internodes 2.1–2.8 cm long. *Leaves* opposite, decussate, equal in a pair; petioles (2.4–) 6–7.7 cm long, subterete, green, velutinous, with a pair of gland-like enations at the base; blade ovate, 16.5–21.1 cm long, 11.6–13 cm wide, chartaceous, upper surface dark green, lower surface green to wine-red, venation red, bullate, upper surface scabrous, lower surface velutinous, more densely so along the veins, base rounded to cordate, sometimes slightly oblique, margin irregularly serrate, apex acuminate, venation prominent and raised below, higher order venation only evident below when dry, young leaves usually with white spots along secondary and primary veins. *Inflorescence* an epedunculate, reduced cyme, appearing fasciculate with 5 to 8 flowers per node, flowers clustered near stem apex; bracteoles absent; pedicels erect, 10–25 mm long, hirsute with simple and glandular hairs; flowers zygomorphic; calyx lobes 5, straight, nearly equal, lobes fused at base for 3–5 mm, spatulate, 6–9 mm long, 4–5 mm wide, uniformly red, lower surface with numerous glandular trichomes, upper surface with glandular and simple trichomes, the upper (2/3) region more densely clustered, margin denticulate and curled outward, apex rounded and reflexed, venation reticulate; corolla campanulate, ventricose on lower surface, posture perpendicular relative to calyx, base gibbous and appearing spur-like on upper surface, corolla tube 20–25 mm long, base 5–6 mm wide becoming ampliate to 13–16 mm wide near throat, throat 13–17 mm wide, outer surface of corolla tube mostly white with white suffused with pink, lobes and apex of throat with prominent pink transitioning to yellow regions, outer surface pilose with simple and glandular hairs more densely so around the throat, pilose internally only around the throat, corolla lobes subequal, ventral lobe slightly longer than the other four lobes, spreading, oblong, 7–12 mm long, 7–10 mm wide, base yellow, middle part pink, apex and margin white, red in bud, margin irregularly crenate to fimbriate, apex rounded; stamens 4, didynamous, 15–22 mm long, adnate to the corolla tube for 4–9 mm, slightly coiled after anthesis, glabrous, staminode 2.5 mm long; anthers sagittate, dehiscence by basal pores, connate, 2.5–3 mm long, 1–1.7 mm wide; ovary superior, wine-red, densely pilose with white hairs, 4–8 mm long; style 16–20 mm long, sparingly pilose; stigma stomatomorphic, 3–4 mm diameter; nectary a single dorsal gland, emarginate, ovate, 20 mm long. *Fruit* not seen.

**Distribution and habitat.** *Drymonia droseroides* is only known only from the Colombian cloud forest on the Pacific slopes of the Valle del Cauca

department from 2000 to 2150 m. This area is part of the Cerro El Inglés Nature Reserve in the Serranía de los Paraguas, a mountain range that borders the departments of Chocó and Valle del Cauca.

**Comments.** *Drymonia droseroides* is easily distinguished from other species of *Drymonia* by the spatulate red calyx lobes covered by glandular trichomes; outwardly curled calyx margins; and reflexed calyx lobes. Other characters that are useful, but not unique to *Drymonia droseroides*, are clustered fascicles of axillary flowers and a succulent herbaceous unbranched stem. *Drymonia droseroides* is similar to *D. variegata*. The two species are differentiated by the presence of 1–3 axillary flowers in *D. variegata* compared to 5–8 axillary flowers in *D. droseroides*; the calyx lobes are longer (>10 cm), lanceolate, and puberulous in *D. variegata* compared to the shorter (6–9 cm), spatulate, and glandular trichomes in *D. droseroides*; and the stem is scandent and subwoody in *D. variegata* in contrast to erect and herbaceous in *D. droseroides*.

**Etymology.** The specific epithet makes reference to the superficial appearance of the spatulate calyx lobes with gland-tipped trichomes that are reminiscent of leaves of the carnivorous plant genus *Drosera* L. (Droseraceae).

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#### LITERATURE CITED

- Clark, J.L., P.S. Herendeen, L.E. Skog, and E.A. Zimmer. 2006. Phylogenetic relationships and generic boundaries in the Episcieae (Gesneriaceae) inferred from nuclear, chloroplast, and morphological data. *Taxon* 55: 313–336.

- Clark, J.L. and E.A. Zimmer. 2003. A preliminary phylogeny of *Alloplectus* (Gesneriaceae): implications for the evolution of flower resupination. *Systematic Botany* 28: 365–375.
- Kvist, L.P., L.E. Skog, and M. Amaya-Márquez. 1998. Los géneros de Gesneriaceas de Colombia. *Caldasia* 20: 12–28.
- Kvist, L.P., L.E. Skog, M. Amaya-Márquez and I. Salinas. 2005. Las Gesneriáceas de Perú. *Arnaldoa* 12: 16–40.
- Martius, C.F.P. 1829. Gesneriaceae. Pp. 27–73, pl. 212–226 in *Nova Genera et Species Plantarum*, Vol. 3. *Impensis auctoris*, Munich, Germany.
- Moore, H. E. 1973. Comments on cultivated Gesneriaceae. *Baileya* 19: 35–41.
- Skog, L.E. and L.P. Kvist. 1997. The Gesneriaceae of Ecuador. Pp. 13–23 in R. Valencia and H. Balslev, eds. *Estudios sobre Diversidad y Ecología de Plantas*, Memorias del II Congreso Ecuatoriano de Botánica. Pontificia Universidad Católica del Ecuador, Quito, Ecuador.
- Steiner, K.E. 1985. The role of nectar and oil in the pollination of *Drymonia serrulata* by *Epicharis* bees (Anthophoridae) in Panama. *Biotropica* 17: 217–229.
- Wiehler, H. 1983. A synopsis of the neotropical Gesneriaceae. *Selbyana* 1–219.