

Drymonia crispera (Gesneriaceae), a new species from northwestern Colombia

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Abstract. Recent expeditions to the northern Cordillera Occidental of the Colombian Andes and preliminary work on a revision of *Drymonia* (Gesneriaceae, tribe Episcieae) have resulted in the discovery of a new species. The new species, ***Drymonia crispera***, is a scandent shrub with maroon pedicels; lanceolate calyx lobes that are sinuate with a prominent midvein; and a campanulate corolla that is white suffused with pink.

Key Words: *Drymonia*, Gesneriaceae, Episcieae, Colombia, taxonomy.

Resumen. Las expediciones recientes al norte de la Cordillera Occidental de los Andes colombianos, y el trabajo preliminar de revisión del género *Drymonia* (Gesneriaceae, tribu Episcieae) han permitido descubrir una nueva especie: ***Drymonia crispera***, que se distingue por su hábito escandente con pedicelos vinotinto; lóbulos del cáliz lanceolados, sinuados y con la vena media prominente; y corola campanulada, blanca con rosado.

The flowering plant family Gesneriaceae is mostly pantropical with some species reaching subtropical and temperate regions (Weber, 2004; Skog & Boggan, 2006). The family is a member of the order Lamiales (APG III, 2009), contains 150 to 160 genera and about 3500 species (Weber, 2004), and it is divided into two major clades: Cyrtandroideae, distributed primarily in the Paleotropics, and Gesnerioideae, distributed primarily in the Neotropics (Möller et al., 2009; Clark et al., 2012). Recent classification of the Gesnerioideae recognizes eight monophyletic tribes (Smith et al., 1997; Smith, 2000; Zimmer et al., 2002; Roalson et al., 2005a, b). The Episcieae is the largest tribe within the Gesnerioideae with 22 genera and 784 species (Wiehler, 1983; Clark et al., 2006; Clark, 2009), and its monophyly is supported by morphological and molecular data (Smith, 1996; Clark & Zimmer, 2003; Roalson et al., 2005b, 2008; Clark et al., 2006, 2012).

The largest genera within the tribe Episcieae are *Columnea* L. (272 species), *Drymonia* Mart. (74 species), and *Nautilocalyx* Linden ex Hanst (70+ species) (Weber, 2004; Clavijo & Clark, 2012). The genus *Drymonia* ranges from southern Mexico to Bolivia, including

northern Brazil, Venezuela and the Guiana Shield, with the highest species richness found in northwestern South America (Clark et al., 2006; Clavijo & Clark, 2008). Although molecular data support the monophyly of the genus *Drymonia* (Clark et al., 2012), its circumscription is problematic due to convergence of floral shapes and fruit types. There is great diversity among *Drymonia* species, which can be herbs, subshrubs, scandent shrubs, or epiphytes (facultative or obligate), with campanulate, funnelform, tubular, or hypocyrtoid corollas, and with fleshy bivalved capsules. However, the most distinctive characteristic for most *Drymonia* is the presence of basal poricidal anther dehiscence. Recent expeditions to the northern Cordillera Occidental of the Colombian Andes and preliminary work on a revision of *Drymonia* (Gesneriaceae, tribe Episcieae) have resulted in the discovery of the following new species.

Drymonia crispera Clavijo & J.L. Clark, **sp. nov.** Type: Colombia. Risaralda: Municipio Mistrató, Cordillera Occidental. Limits with the department of Antioquia, Natural Reserve Mesenia-Paramillo, path from Río San Juan to San Antonio del Chamí, 5°28'58" N,

75°53'42" W, 2200–2500 m, 17 May 2012 (fl), J.L. Clark, J. Anderson, L. Clavijo & U. Rendón 12975 (holotype: COL; isotypes: US, MO, UNA). (Fig. 1)

Differs from other congeners by the lanceolate calyx lobes with sinuate margins and prominent midvein, and a campanulate corolla that is white suffused with pink.

Scandent shrub. *Stems* erect, to 1.6 m tall, branched, subquadrangular in cross-section, herbaceous to subwoody, green suffused with maroon, glabrate, puberulent apically; internodes 6–13 cm long. *Leaves* opposite, decussate, equal in a pair, pairs evenly spaced; petiole 2–4 cm long, terete, green to maroon adaxially and green abaxially, two gland-like enations at the base, strigillose; blade elliptic to oblong, rarely obovate, 8–15.5 cm long, 3.5–6.6 cm wide, coriaceous when dry, upper surface green, lower surface green suffused with red to entirely maroon, apex acute, base cuneate, sometimes slightly oblique, margin entire, upper surface glabrous, lower surface strigillose; 4–5 pairs of main lateral veins, central vein light green above, whitish when dry, venation raised below, strigose, higher order of venation only evident abaxially. *Inflorescence* axillary, a reduced pair-flowered cyme with 2–8 flowers per inflorescence; peduncle less than 1 mm long; inflorescence bracts 10–11 mm long, 2–3 mm wide, whitish suffused with red to maroon, oblong, apex acute, margin entire; floral bracts 3–4 mm long, 1–1.5 mm wide, whitish suffused with red, strigillose, oblong, apex rounded, margin entire; pedicel 10–22 mm long, maroon, strigillose, whitish enations mainly located at the apex. *Calyx* whitish with red on both sides of the midvein and green towards the margin, apex acute, margin sinuate, green to red, white enations at the base, strigose adaxially, strigillose abaxially, midvein prominent abaxially, strigose; calyx lobes 5, 4 nearly equal, 5th lobe (dorsal) slightly smaller, nearly free, lobes fused at the base for 1.5–3 mm, ventral and lateral lobes 12–13 mm long, 2–4.5 mm wide, lanceolate, base truncate, dorsal lobe 10–11 mm long, 4–4.6 mm wide, lanceolate. *Corolla* zygomorphic; tube campanulate, slightly narrowed throat, oblique relative to the calyx, 25–29 mm long,

13–15 mm wide at the middle, outer surface white suffused with pink, dorsally with two prominent pink longitudinal stripes, puberulent, inner surface white suffused with pink, with yellow stripes ventrally, glandular trichomes on dorsal surface; spur 2–3 mm long; throat 17–20 mm wide, outside puberulent and pink, inside with glandular trichomes dorsally, and white with yellow marks between the corolla lobes that are heavily callused on the ventral surface; corolla lobes 5, subequal, white suffused with pink adaxially, pink with white margin abaxially, apex obtuse, margin fimbriate, glabrate adaxially, puberulent abaxially, 10–13 mm long, 8–10 mm wide, rotund, ventral lobe slightly wider than the other four lobes, the other four lobes spreading with the margin slightly reflexed. *Androecium* of 4 stamens, didynamous, filaments 17–19 mm long, white, adnate to the corolla tube for 4–5 mm, glabrous, coiling after anthesis, staminode absent; anthers oblong, dehiscence by basal pores that develop into longitudinal slits, 4–5 mm long, 1–1.5 mm wide. *Gynoecium* with a single dorsal nectary gland, ovate, slightly emarginate, 2 mm long, green; ovary superior, 4–4.5 mm long, 2–2.6 mm wide, ovate, proximal half white, distal half maroon, strigose; style 10–19 mm long, maroon with white apex, glabrate, strigillose at the base; stigma bilobed and white. *Fruit* not observed.

Distribution and habitat.—*Drymonia crispa* is endemic to Colombia and is only known from the northern Cordillera Occidental of the Andes in the departments of Antioquia and Risaralda. Its habitat is rain and cloud forests between 1780 and 2500 meters. In Risaralda it was found at the edge of the forest growing over the primary trail between San Antonio del Chamí (Risaralda) and Jardín (Antioquia), in the protected area of the reserve Mesenia-Paramillo. In Antioquia it has been found in the Rain Premontane Forest (bp-PM) (Holdridge, 1978; Espinal-Tascón, 2011) of the western foothills of the Cordillera Occidental in Frontino.

Phenology.—*Drymonia crispa* has been collected in flower in May and September.

Etymology.—The specific epithet, *crispa*, is the feminine form of the Latin word *crispus* that refers to the curled or sinuate appearance of the calyx lobes.

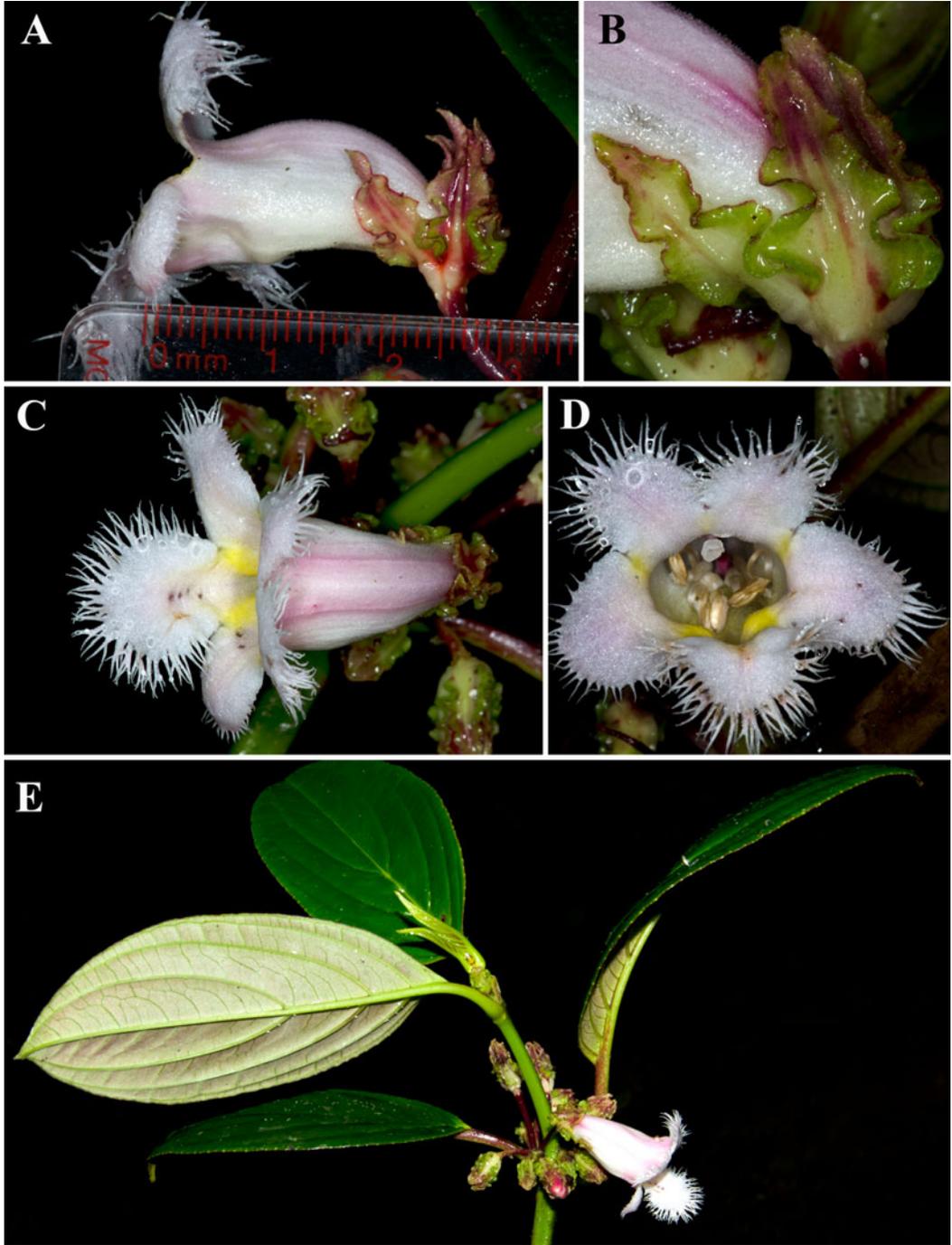


FIG. 1. *Drymonia crisper*. **A.** Flower, lateral view. **B.** Calyx, lateral view showing the sinuate margin. **C.** Flower, dorsal view showing the two longitudinal pink stripes. **D.** Flower, front view. **E.** Habit. (From the holotype; photographs by J.L. Clark.)

Conservation and IUCN Red List category.—*Drymonia crispera* is known from two localities in the Andes of northwestern Colombia. The tropical Andes represents less than 1% of the Earth's total land area, yet it is one of the most biodiverse regions in the world with 30,000 to 35,000 species of vascular plants (Rodríguez-Maecha et al., 2004). This region is also known for its high rate of endemism with 20,000 endemic species or 7.4% of the total global percentage of endemic vascular plants (Mittermeier et al., 2008). These forests are severely threatened with less than 25% remaining because of mining and timber activities, deforestation from population growth, and hydroelectric projects (Myers et al., 2000).

Drymonia crispera has been collected in the protected cloud forest of the reserve Mesenia-Paramillo in the north of Department of Risaralda, which is owned by The Hummingbird Conservancy (Fundación Colobri). The reserve is located in the headwaters of the rivers San Juan, San Juan Bravo, and Risaralda, within the Tatamá-Caramanta biological corridor. The 2300 hectares of protected land extend into the territories of the Departments of Risaralda, Antioquia, and Caldas, ranging from 1800 to 3100 meters. *Drymonia crispera* has also been collected in the Frontino region of northwestern Antioquia where the premontane forests harbor a high diversity of Gesneriaceae. The forests in this region are not protected and face deforestation pressure because of mining and timber activities. According to the IUCN Red List criteria (IUCN, 2001), the limited geographic range, the restricted number of locations (only two), and the uncertain future of forest conservation in northwestern Antioquia support the placement of *Drymonia crispera* in the category Vulnerable (VU B1ab(iii)).

Additional specimens examined. COLOMBIA.

Antioquia: Municipio Frontino, Corregimiento Nutibara, cuenca alta del río Cuevas. 1780 m, 26 Sep 1987 (fl), *D. Sánchez et al.* 1566 (COL, HUA).

Drymonia crispera is distinguished from other congeners by relatively short lanceolate calyx lobes (less than 13 mm long) with sinuate margins and prominent midveins (Fig. 1B). The corolla is white suffused with

pink and has two prominent pink longitudinal stripes on the dorsal surface (Fig. 1A, C). Other distinguishing characters of *Drymonia crispera* are the following: inflorescence with 2–8 flowers, pedicels maroon, leaves with 4–5 pairs of lateral main veins, and abaxial leaf surface green suffused with red to evenly maroon (Fig. 1E). Only a few species of *Drymonia* have relatively short calyx lobes (i.e., less than 1/3 of the corolla length) and these are easily distinguished from *Drymonia crispera*. For example, *Drymonia anisophylla* L.E. Skog & L.P. Kvist has anisophyllous leaves with tubular red corollas; *Drymonia droseroides* J.L. Clark & Clavijo has bullate scabrous leaves, spatulate calyx lobes that are covered with glandular trichomes; and *Drymonia microcalyx* Wiehler has a calyx less than 10 mm long and corolla more than 30 mm long. *Drymonia crispera* is vegetatively similar to *Drymonia pulchra* Wiehler, but differs by the presence of subquadrangular (vs. quadrangular) stems, leaves with 4–5 pairs of main lateral veins (vs. 5–6), and corollas that are white suffused with pink (vs. yellow).

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