PARADRYMONIA APICAUDATA (GESNERIACEAE), A NEW SPECIES FROM WESTERN COLOMBIA

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ABSTRACT

A new species is described and illustrated from the Pacific slope of the Cordillera Occidental in the western Andes of Colombia. **Paradrymonia apicaudata** (Gesneriaceae: Episcieae) is distinguished from other species in the genus by the combination of spathulate leaf blades with a caudate apex, linear calyx lobes, and salverform white corollas.

RESUMEN

Se describe y se ilustra una nueva especie, **Paradrymonia apicaudata** (Gesneriaceae: Episcieae), de la vertiente del pacífico de la Cordillera Occidental en los Andes de Colombia. La nueva especie se distingue de otras especies del género por sus láminas espatuladas con ápice caudado, por sus flores blancas hipocrateriformes y por sus lóbulos del cáliz lineares.

KEY WORDS: Colombia, Gesneriaceae, *Paradrymonia*, Taxonomy

INTRODUCTION

The plant family Gesneriaceae is mostly tropical or subtropical with over 3500 species distributed in 150–160 genera (Weber 2004; Weber & Skog 2007). The family is divided into four subfamilies with the subfamily Gesnerioideae found almost exclusively in the Neotropics (Burtt & Wiehler 1995; Smith & Carrol 1997). Although different tribal arrangements are recognized in the literature based on morphological data (e.g., Hanstein 1854; Fritsch 1893–1894; Wiehler 1983), more recent studies based on molecular evidence divide the subfamily Gesnerioideae into eight tribes (Weber 2004; Skog & Boggan 2007; Weber & Skog 2007). Of the eight tribes, Episcieae is the largest and most diverse with 22 genera and an estimated 784 species (Clark et al. 2006; Clark 2009).

Paradrymonia Hanst. with 38 currently recognized species is the fourth largest genus in tribe Episcieae after *Columnea* L. (200+ spp.), *Drymonia* Mart. (100+ spp.) and *Nautilocalyx* Linden ex Hanst. (ca. 60 spp.) (Clark 2009). The genus occurs throughout the Neotropics except southeast Brazil and the Caribbean, with centers of diversity in Colombia and Ecuador. Ongoing phylogenetic studies support that traditionally recognized *Paradrymonia, Nautilocalyx,* and *Chrysothemis* are not monophyletic. The new species described here shares the following morphological features with currently recognized members of an informal clade comprised of *Paradrymonia*: facultative epiphytic herbs; leaves clustered in a basal rosette; petioles U-shaped in cross section; corollas trumpet-shaped to salverform; anther dehiscence longitudinal; leaf pairs anisophyllous; and fruits a semi-fleshy bivalved dehiscent capsule. An ongoing taxonomic revision by the first author on *Paradrymonia* has revealed a new species endemic to Colombia that is described here.

Paradrymonia apicaudata M.M. Mora & J.L. Clark, sp. nov. (**Fig. 1**). TYPE: COLOMBIA. VALLE: from Campoalegre into area controlled by Corporación Valle del Cauca, trail uphill behind last camp (El Chanco), 04°00'N 076°40'W, 400—610 m, 17 Feb 1989, *J.F. Smith*, *R. Bernal*, *X., Londoño and W. Devia 1357* (HOLOTYPE: SEL; ISOTYPES: F, MO, US, WIS).

Differs from other congeners by the combination of the following characters: epiphytic herbaceous habit; anisophyllous leaves; blades spathulate with decurrent base and caudate apex, sericeous surface, and denticulate margins; linear calyx lobes; and white salverform corollas.

Facultative epiphyte. Stems subwoody, subquadrate, elongate and creeping with erect shoots, internodes 3–6 cm long near base, becoming apically clustered, rhytidome glossy and tan, adventitious roots present. Leaves opposite, unequal in a pair, the larger leaf with petioles 1–2(–4) cm long, cross section U-shaped, wine-red, densely sericeous; the blade 8.5–24 × 3.5–6.5 cm wide, spathulate to oblanceolate with denticulate margins, base decurrent on petiole, apex abruptly acuminate to caudate, dark green above, light green below, sometimes tinged with purple, matte (non-glossy), sericeous on both surfaces, young leaves densely sericeous; the lateral pairs of veins 10–14(–16), departing the midrib at 40–50° angle. The smaller leaf strongly reduced, to 2 cm long, linear-lanceolate with denticulate margins. Inflorescence a reduced pair-flowered cyme, of 1–2 flowers in axillary clusters, the prophylls linear-lanceolate, denticulate, less than 2 cm long, reddish, sericeous; the pedicels 0.8–1.5 cm long, rose-colored, sericeous. Calyx lobes subequal 15–30 × 1–2 mm, linear, sericeous, pale green to yellowish green, with one or two subovoid teeth on the margin, the teeth sometimes in pairs. Corolla oblique relative to the calyx, ca. 3.5 cm long, salverform with a flattened limb and spreading lobes, spurred at base, pilose, proximal half a narrow tube, white, distal half gradually expanding with yellowish hues inside the tube, pilose outside, with short glandular hairs inside, the lobes 5, subequal, 0.5–0.6 cm, slightly broader than long. Androecium with 4 stamens, included, didynamous, 1.8–2.3 cm long, the filaments adnate for up to 3 mm from the base of the corolla tube, white, glabrous, each anther apically coherent in a pair, each thecae ca. 1 mm long, the thecae dehiscent by longitudinal slits. Gynoecium with the ovary ovoid, 7 mm long, densely sericeous, style up to 2.5 cm long, densely glandular-pilose, stigma capitate, nectary a bilobed dorsal gland, ca. 2 mm long, entire, glabrous. Fruit a bivalved semi-fleshy (not succulent) capsule, green, and sericeous. Seeds oblong-ovoid, tapered at both ends but more acutely at one end, 1.2–1.4 × 0.3–0.4 mm, light reddish brown marked with vertical striae.

Distribution and habitat.—*Paradrymonia apicaudata* is endemic to Colombia and is known from the western foothills of the Cordillera Occidental in the departments of Chocó and Valle. Its habitat ranges from Tropical wet forest (Twf) to Tropical rain forest (Trf) to Premontane (P) life zones (Holdridge et al. 1971). Collections range from sea level to 700 m in primary forest, fragmented tracts of primary forest with few large trees and many epiphytes, or growing on steep rocky roadside embankments.

Phenology.—*Paradrymonia apicaudata* has been collected in flower in October to May and in fruit in February to May.

Paradrymonia apicaudata is distinguished from other species in the genus by the combination of sericeous pubescence on the leaf blades, pedicels, and calyces; spathulate leaf blades with conspicuous caudate apices and denticulate margins; linear calyx lobes with subovoid teeth; and white salverform corollas. *Paradrymonia apicaudata* is similar to *P. ulei*, an endemic species from the northeastern Andes of *Peru*. Both species have salverform corollas with sericeous pedicels and calyces. However, *Paradrymonia apicaudata* differs from *P. ulei* by the presence of white corollas (vs. red-orange), linear calyces (vs. lanceolate) and conspicuously caudate leaf apices (vs. acuminate).

Etymology.—The specific epithet, apicaudata, is in reference to the apical portion of the leaf blade. The leaf apex is elongate and "tail-like" as in the order of Amphibians, Caudata (salamanders and newts), which is defined by the presence of tails as adults.

Conservation and IUCN Red List category.—Most of the specimens of *Paradrymonia apicaudata* are from the Bajo Calima region in the Department of Valle on the Pacific coast of Colombia near Buenaventura. From the 1950s until 1995, the Bajo Calima site was a timber concession to Cartón de Colombia. The site was logged on a 30-year rotational basis and during the late 1980s and 1990s the same timber company encouraged the

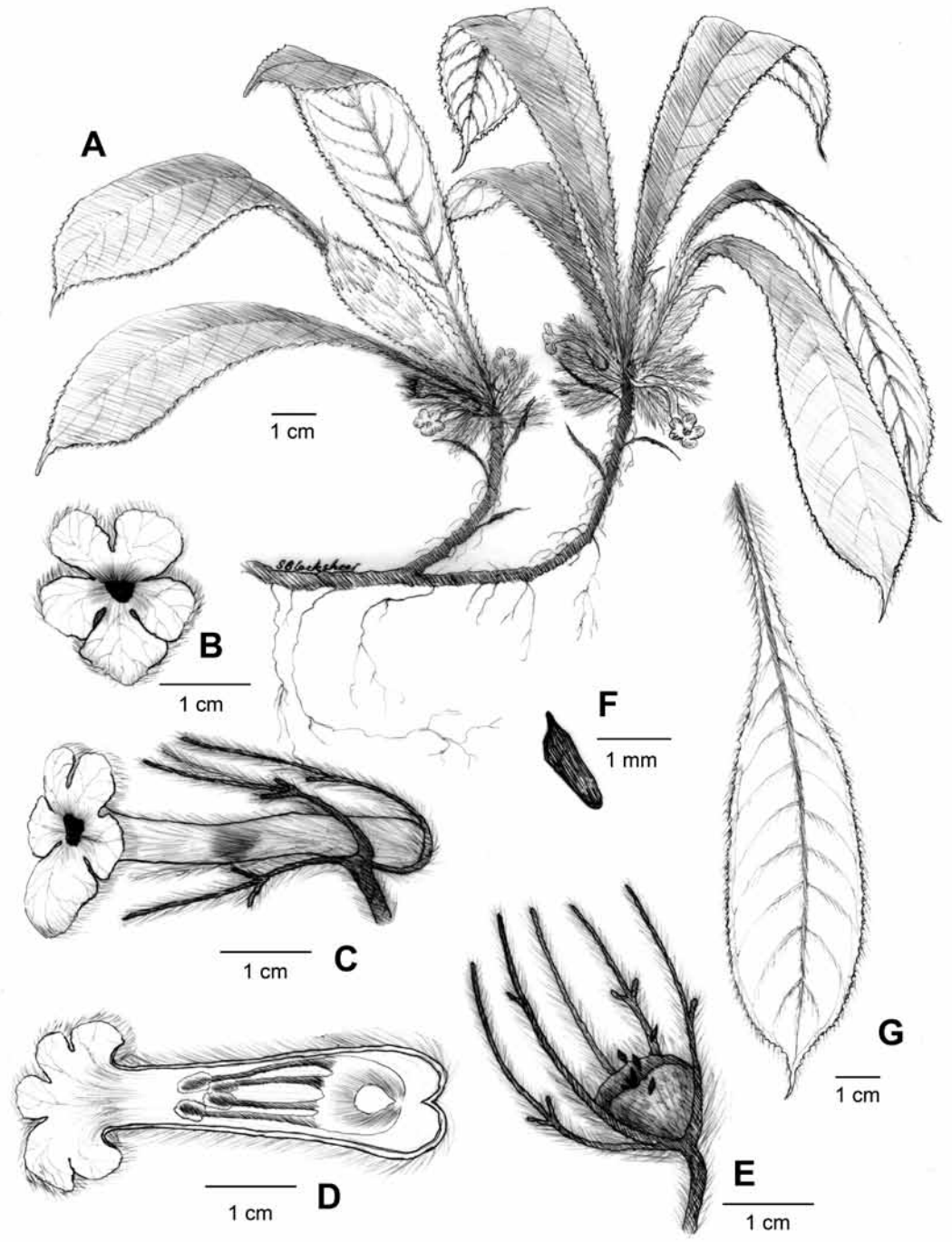

Fig. 1. **Illustration of *Paradrymonia apicaudata*. A.** Apical rosette habit. **B.** Front view of corolla. **C.** Lateral view of flower. **D.** Corolla open to show position of androecium. **E.** Persistent calyx and bivalved capsule with seeds. **F.** Seed. **G.** Leaf blade showing caudate apex. (A from E.P. *Killip & H. Garcia 33424* (US); B, C & D from *M. Monsalve 819* (MO); E from *A. Juncosa 1551* (MO); and F from the holotype, *J.F. Smith et al. 1317* (WIS)).

scientific study of the site. Studies have indicated that the region is very rich in plant diversity (Faber-Langendoen and Gentry 1991). Bajo Calima is also known as one of the centers of diversity and endemism for the family Araceae (Bay 1996; Croat et al. 2008).

Paradrymonia apicaudata has been recorded from Bajo Calima as recently as 1988. Unfortunately, a 2009 expedition by the first author did not result in locating any extant populations because of the considerable deforestation occurring in the area. *Paradrymonia apicaudata* has not been found in any formally protected area in Colombia. Fieldwork in adjacent forests in the Departments of Choco and Valle may result in the documentation of extant populations. According to the IUCN Red List criteria (IUCN 2001) the limited geographic range (B1a, severely fragmented or known to exist at no more than five locations) and limited population size estimation (C1), support the placement of *Paradrymonia apicaudata* in the category EN (Endangered).

Paratypes. **COLOMBIA. Chocó:** Corcovada Region, upper Río San Juan; ridge along Yeracüí Valley, 24 Apr 1939, *E. Killip 35241* (COL, US); hills near highest point of Bagado-Certegui trail, 8 Dec 1983, *A. Juncosa 1551* (MO, US); hwy between Yutó and Lloró, 29 Dec 1982, *A. Juncosa 540* (MO, US). **Valle:** Santa Rosa, along Rio Caballete, 22 Sep 1922, *E. Killip 11542* (US); trail leading from Campoalegre into area controlled by Corporación Valle del Cauca, trail from last camp (El Chanco) across stream via cable cart, uphill and to left to CVC altitude marker, 16 Feb 1989, *J. Smith, R. Bernal, X. Londoño* and *W. Devia 1317* (WIS); 18 Feb 1989, *J. Smith, R. Bernal, X. Londoño and W. Devia 1367* (US, WIS); Córdoba, 17 Feb 1939, *E. Killip* and *H. Garcia 33424* (US); Buenaventura, Bajo Calima, Concesión Pulpapel/Buenaventura, 22 Mar 1985, *M. Monsalve 819* (MO); 8 May 1985, *M. Monsalve 853* (MO); 1 Oct 1987, *M. Monsalve 1880* (MO); Buenaventura, Bajo Calima Region between Buenaventura and Río Calima, Carretera Hans at Km 22 on main road to Canalete, ca. 6 km N of main road, 21 Jul 1988, *T. Croat 69512* (MO).

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