

COLUMNEA LUCIFER (GESNERIACEAE),  
A NEW SPECIES FROM NORTHWESTERN ECUADOR

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ABSTRACT

Recent expeditions to the northwestern slopes of the Ecuadorian Andes and revisionary work of *Columnnea* (Gesneriaceae) have resulted in the discovery of a new plant species. The new species, **Columnnea lucifer**, is distinguished from other congeners by the presence of dense villous indument on the stems, bright white calyces with red lobes, and elongate tubular yellow corollas with red lobes.

RESUMEN

Expediciones recientes a la vertiente oriental de los Andes Ecuatorianos y el trabajo de revisión del género *Columnnea* (Gesneriaceae) permitieron el descubrimiento de una especie nueva de planta. La nueva especie, **Columnnea lucifer**, se distingue por la presencia de un denso indumento veloso en los tallos, cáliz blanco lustroso con lóbulos rojos, y corola alargada, tubular, amarilla con lóbulos rojos.

KEY WORDS: *Columnnea*, Gesneriaceae, Ecuador, Taxonomy, Flora of Ecuador

INTRODUCTION

The genus *Columnnea* is primarily epiphytic and belongs to the New World subfamily Gesnerioideae. *Columnnea* is distinguished from other closely related genera by the presence of an indehiscent berry instead of a fleshy bivalved capsule. *Columnnea* is the most diverse genus in the subfamily Gesnerioideae with over 200 species (Skog & Boggan 2006; Weber 2004; Burt & Wiehler 1995). The traditional sectional classification of *Columnnea* does not represent monophyletic lineages (Smith 1994; Smith & Sytsma 1994; Clark et al. 2006) and a revised classification system based on molecular sequence data is currently in preparation by the author, James F. Smith, and other collaborators. The species described here is not assigned to any of the traditional subgenera or sections.

TAXONOMIC TREATMENT

**Columnnea lucifer** J.L. Clark, sp. nov. (Figs. 1, 2). TYPE: ECUADOR. ESMERALDAS: Cantón San Lorenzo, remnant patch of forest along highway Ibarra-San Lorenzo, between the towns of Durango and Alto Tambo, 00°57'21"N, 78°33'38"W, 664 m, 3 Jun 2009, J.L. Clark & Gesneriad Research Expedition Participants 11100 (HOLOTYPE: US; ISOTYPES: QCNE, NY).

A ceteris *Columnneae* speciebus indumento dense villosa in caule, calyce vivido candido lobis rubris, et lutea corolla elongatotubulosa lobis rubris differt.

**Epiphyte**, suffrutescent to herbaceous, stem erect (not scandent), 15–30 cm tall, dense reddish indument throughout, internodes 1.5–4 cm long. **Leaves** opposite, strongly anisophyllous to nearly isosophyllous in a pair, chartaceous; larger leaf with petioles 0.5–1.0 cm long, densely reddish villous indument; blade narrowly oblong to ovate, 9.0–11 × 3.0–4.0 cm, base asymmetrical, apex acute, margin serrate and red; adaxially green, sparsely golden villous; abaxially green with prominent secondary red venation, uniformly villous, 3–6 pairs of lateral veins; smaller leaf variable, nearly equal in size or greatly reduced and stipule like. **Inflorescence** epedunculate with 1–5 flowers per node, bracts narrowly lanceolate, densely villous and red, 5.0 × 0.3 mm, pedicel 1.0–2.5 cm long, red, densely villous and red. **Calyx** bright white with reflexed red lobes; lobes 5, nearly free joined only at the base by 1 mm of their length; 4 lobes equal in size, ovate, 1.0 × 0.5 cm, margin serrate with 4–8 serrations on each side, outside densely villous and white, inside glabrous at base and densely villous at apex, the fifth dorsal lobe smaller, broadly oblong to lanceolate, 0.8 × 0.2 cm.

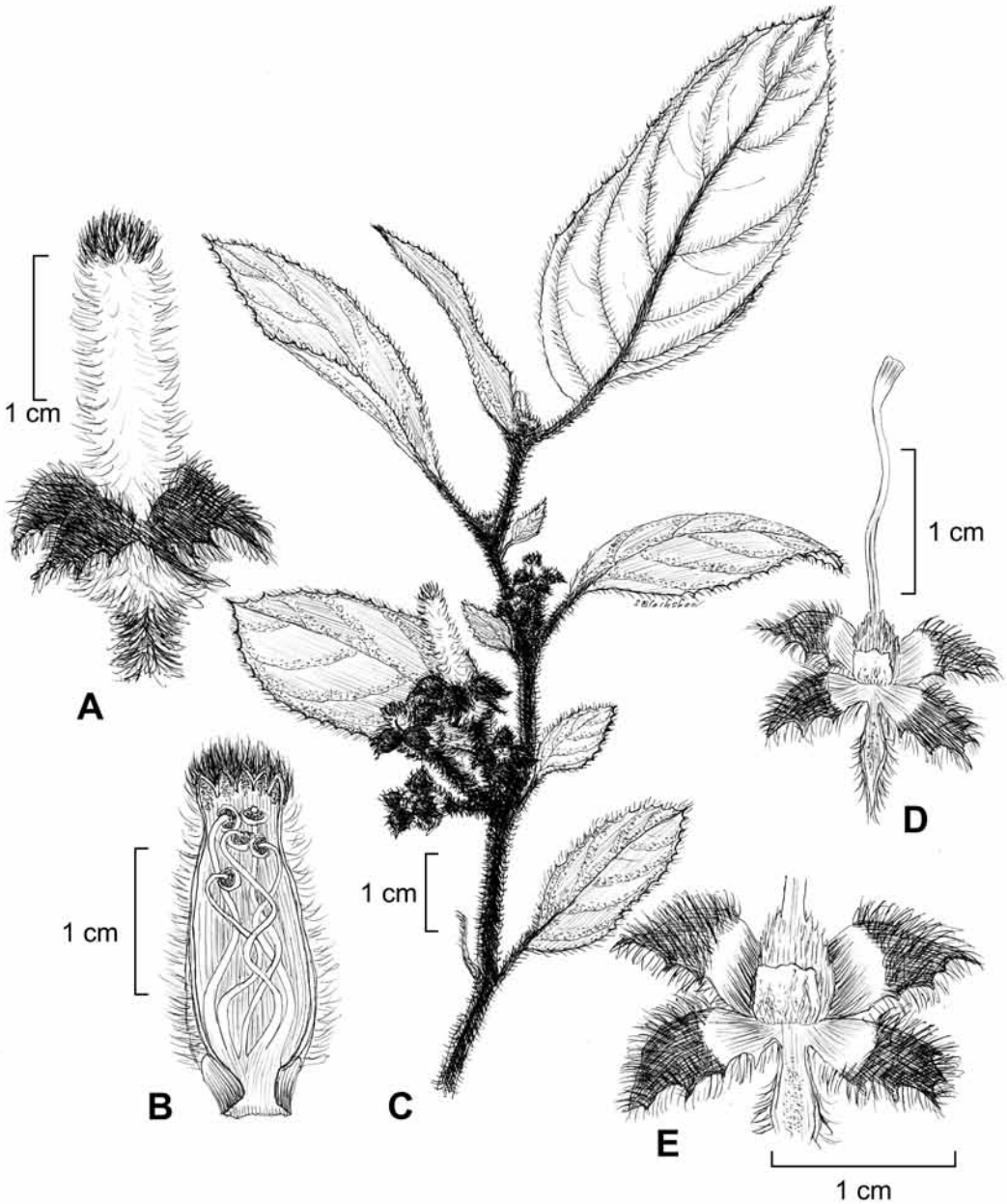


FIG. 1. *Columnea lucifer*. A. Mature flower. B. Corolla open to show protandrous stage of mature flower. C. Habit and inflorescence. D. Corolla removed to show calyx, dorsal nectary gland, and immature gynoecium. E. Enlargement of mature calyx.

**Corolla** mostly yellow with red apex, uniformly tubular, 2.0–3.0 × 0.5 cm, corolla posture erect in calyx, apical region red, lobes triangular, ca., 1.5 × 2 mm, nearly actinomorphic, outside densely villous, inside glabrous. **Androecium** of 4 stamens, didynamous, included; filaments 1.5–2.0 cm long, basally connate for 3.5 mm, adnate to the base of the corolla tube, glabrous; anthers broader than long, ca. 1.5 mm long, ca. 2.0 mm wide, dehiscing by longitudinal slits; staminode not observed. **Nectary** a single dorsal truncate



FIG. 2. *Columnnea lucifer*. A. Stephen Maciejewski holding shoot of entire plant. B. Immature flower. C. Mature flower. (photo A. by Julie Mavity-Hudson. Photos B & C by J.L. Clark; from the live plant from which the holotype was collected, J.L. Clark & Gesneriad Research Expedition Participants 11100).

gland. **Gynoeceium** immature, ovary superior, ovoid,  $0.7 \times 0.3$  cm, sericeous; style 1.5–2.0 cm long, laminar; stigma truncate. **Fruit** not observed.

*Distribution and habitat.*—*Columnnea lucifer* is only known from the type locality in a wet forest of northwestern Ecuador. Recent fieldwork in Ecuador with participants on the 2009 Gesneriaceae Research Expedition resulted in the collection of this remarkable species. The group participant who discovered this species is Stephen Maciejewski, an avid and passionate horticulturist from Philadelphia (Fig. 2A). It is notable that four expeditions conducted by the author to this specific locality and numerous expeditions by other botanists (e.g., Tom Croat and Carlos E. Cerón M.) to the same forest did not result in additional collections of *Columnnea lucifer*. It is because of Stephen Maciejewski's acute awareness that this species was discovered.

Recent visits to Ecuadorian herbaria (e.g., Q, QAP, QCA, and QCNE) and many non-Ecuadorian herbaria have not revealed additional collections of *Columnnea lucifer*. The only population of *Columnnea lucifer* is known from a remnant patch of primary forest along the San Lorenzo-Ibarra highway between the towns of Alto Tambo and Durango. It is noticeable from extensive fieldwork between 2003 and 2009 that most of the forest along the San Lorenzo-Ibarra highway has been converted to African Palm plantations. The habitat from this area is transitional between lowland and montane wet forest. These forests have been classified as *bosque siempreverde piemontano* (Sierra 1999); *selva ombrófila noroccidental del pie de cordillera* (Acosta Solís 1968); *bosque muy húmedo piemontano* (Cañadas 1983); and *bosque lluvioso montano bajo* (Harling 1979).

*Columnnea lucifer* is unique among the species of *Columnnea* by the dense villous indument on the stems, bright white calyces with red lobes, and elongate tubular yellow corollas with red lobes (Fig. 2). The combination of colors on the pedicel, calyx, and corolla are visually attractive. The colors shift from bright red at the base of the pedicel to bright white on the calyx with reflexed red lobes which contrasts with an elongate corolla that is mostly yellow with strikingly contrasting red apices (Fig. 2).

*Etymology.*—The new species is named in reference to fire or light-bearer (from the words *lucem ferre*) because of the resemblance of the bright narrow elongate flower with a red apex to a lighted candle with a bright red flame.

#### ACKNOWLEDGMENTS

Support for this study was provided by the National Science Foundation (DEB-0841958 & DEB-0949169). I thank the Smithsonian Institution's National Museum of Natural History – Department of Botany (US) and Ecuadorian herbaria (Q, QAP, QCA, and QCNE) for access to their collections. I am grateful to James F. Smith (SRP) and an anonymous reviewer for helpful comments on the manuscript, Christian Feuillet for providing the Latin diagnosis, Laura Clavijo for providing the Spanish translation of the abstract, Sue R. Blackshear for preparing the illustration of the new species, William R. Anderson for help in selecting an appropriate specific epithet, and most importantly Stephen Maciejewski for discovering the new species during the 2009 Gesneriad Research Expedition in Ecuador.

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