

GLOSSOLOMA VELUTINUM (GESNERIACEAE), A NEW SPECIES
FROM THE CORDILLERA CENTRAL OF THE COLOMBIAN ANDES

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ABSTRACT

A new species of *Glossoloma* (Gesneriaceae) is described from the Cordillera Central of the Colombian Andes. The new species, ***Glossoloma velutinum*** J.L. Clark & L.A. Rodas, is locally endemic to cloud forests in the provinces of Quindío and Tolima. The new species is differentiated from other *Glossoloma* by the presence of an orange corolla, scandent habit with elongate shoots to 3 m tall, and uniformly velutinous indumentum on the stems and leaves.

RESUMEN

Una nueva especie de (Gesneriaceae) es descrita en la cordillera central de los andes de Colombia. La nueva especie, ***Glossoloma velutinum*** J.L. Clark & L.A. Rodas, es endémica de las neofislas del Quindío y el Tolima. La nueva especie es diferente de otras *Glossoloma* por la presencia de una corola de color naranja, de hábito escandente llegando alcanzar longitudes de hasta 3 m. y su indumento velutino en tallos y hojas.

KEY WORDS: Cordillera Central, Episcieae, Gesneriaceae, *Glossoloma*, Quindío, taxonomy

INTRODUCTION

The genus *Glossoloma* Hanst. belongs to the New World subfamily Gesnerioideae and subtribe Columneinae (Weber et al. 2013). *Glossoloma* is distinguished from closely related genera by the presence of resupinate (upside-down) flowers. *Glossoloma* ranges from Mexico south to Bolivia and is most diverse in the northern Andes of Colombia and Ecuador. The genus was recently monographed by Clark (2009) and included 27 species. Expeditions to Colombia during the previous two years (Clark 2012) have resulted in many discoveries and the subsequent publication of new species (Clark & Clavijo 2012; Clavijo & Clark 2012; Clavijo & Clark 2014; Smith et al. 2013). The publication of *Glossoloma velutinum* increases the total number of species in the genus to 28 with additional discoveries that will be published in the near future.

TAXONOMIC TREATMENT

Glossoloma velutinum J.L. Clark & L.A. Rodas, sp. nov. (**Fig. 1**) TYPE: COLOMBIA. QUINDÍO: Municipio de Calarcá, carretera al Campanario, borde de bosque conservado, 4°28'27N, 75°33'25W, 3160–3450 m, 29 Aug 1993, D. Macías, M.L. Chacón & J.C. Hincapié 101 (HOLOTYPE: HUQ).

Differs from all other *Glossoloma* by the presence of a velutinous indumentum, scandent habit, and elongate shoots to 3 m tall.

Terrestrial or epiphytic scandent subshrub; stems erect, rarely branched, to 3 m tall, to 0.7 cm in diameter, quadrangular, vestiture velutinous to densely villous, woody when mature, succulent to herbaceous when young, internodes 2.5–8 cm long. **Leaves** opposite, equal or subequal in a pair; petioles 1.5–2.5 cm long, sparsely to densely woolly; blades 4–17 × 2.5–7 cm, elliptic-oblong to obovate, base cuneate to acute, occasionally oblique, apex acuminate, margin denticulate to serrate, adaxially green and velutinous, abaxially much lighter green and velutinous, coriaceous when dry, lateral veins 6–8 per side. **Flowers** resupinate, appearing fasciculate with 2–5 flowers per axil, posture pendent at anthesis, bracteoles 0.5–2.0 × 3–6 mm, ovate; pedicels 1–3 cm long, usually velutinous, rarely villous; **calyx** lobes nearly free, conduplicate with each lobe appressed to adjacent lobe and folded lengthwise with the margin curved inward, erect, 4 subequal, 1–3 × 0.6–1.0 cm, broadly ovate, base truncate, apex acuminate, margin serrate to lacinate, red to pink, abaxially densely velutinous, adaxially sparsely velutinous; **corolla** 2.0–3.0 cm long, tubular, gibbous basally on upper surface, long

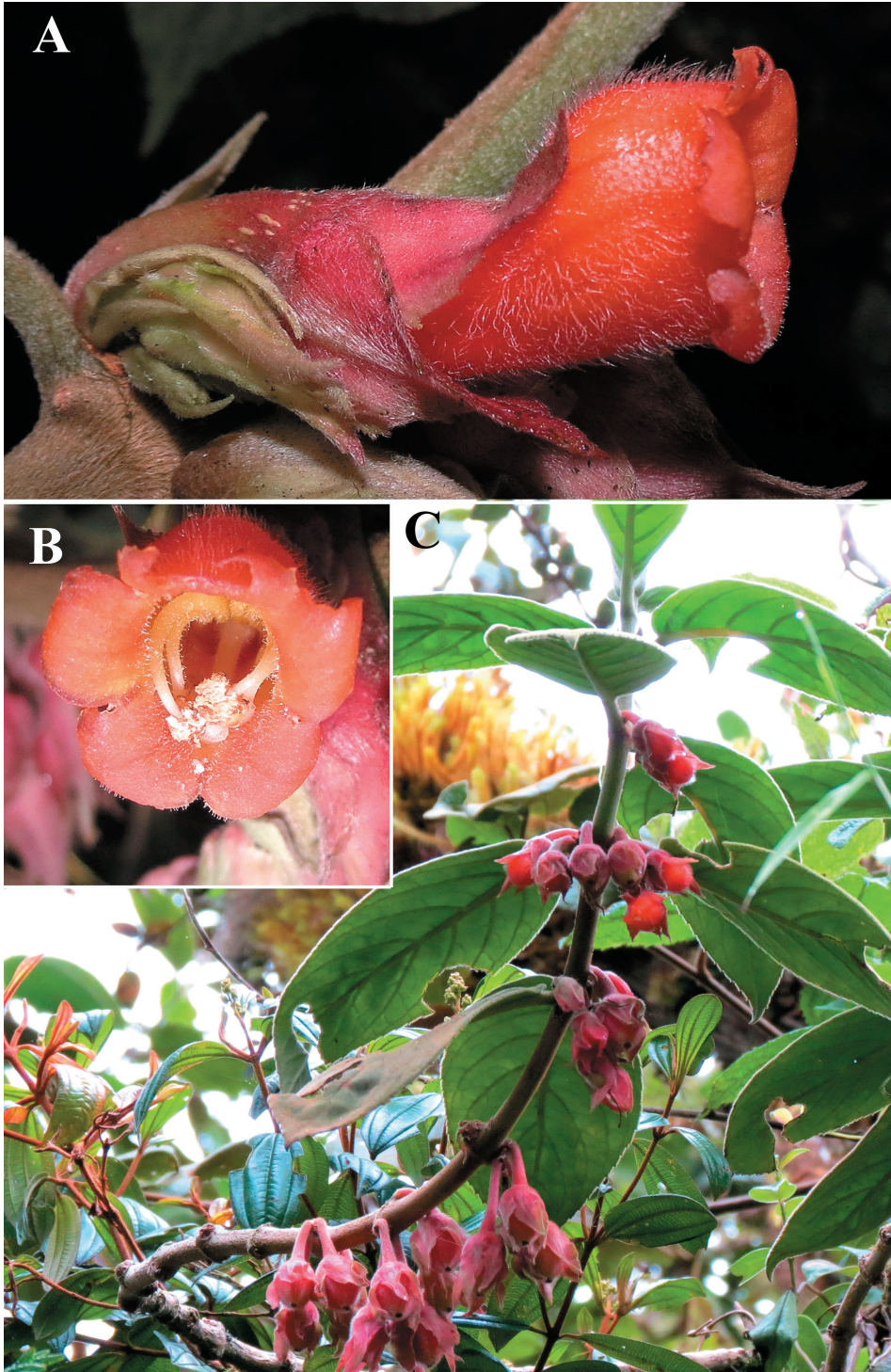


FIG. 1. *Glossoloma velutinum* J.L. Clark & L.A. Rodas. **A.** Lateral view of resupinate flower. **B.** Front view of flower showing androecium on lower surface and medial lobe on upper surface. **C.** Habit. (A–C photographic images of L.A. Rodas 102).

axis of corolla oblique relative to calyx; base ca. 8 mm in diameter, middle ampliate, becoming apically ventricose on upper surface, throat slightly constricted, not appearing laterally compressed, ca. 1.5 cm wide (at mouth), outside densely velutinous, inside sparsely velutinous, interior red spotting present, limb spreading, subregular, ca. 8 mm wide, orange becoming yellow, lobes equal, ca. 2 × 6 mm, rotund, spreading, entire; **nectary** a bilobed gland on ventral surface of ovary, sparsely glabrous; **filaments** curved after anthesis, free portion to 1.5 cm long, adnate to base of corolla tube for ca. 3 mm, connate for 2.5 mm, forming an open sheath, glabrous; anthers 1.5 × 3 mm, dehiscing by longitudinal slits; **staminode** present; **ovary** ca. 4.5 × 3 mm, ovoid, densely velutinous, style 0.8–1.5 cm long, glabrous, stigma stomatomorphic. **Fruit** a fleshy capsule, pendent when ripe, 1.4 × 1.1 cm, globose to ovoid when immature, velutinous, loculicidally dehiscent and bivalved when mature, valves not reflexed, reaching a 45°–60° angle when mature. **Seeds** numerous, ca. 1.0 × 0.5 mm, elongate, longitudinally-transversely striate, brown.

Additional specimens studied. **COLOMBIA. Quindío:** municipio de Salento, Reserva Natural Alto Quindío, Acaime, 4°37'85"N, 75°28'0"W, 2780 m, 12 May 1991, C.A. Agudelo, L.F. Hoyos, D. Macías & A.L. López. 1736 (HUQ); municipio de Calarcá, vereda planadas, microcuena de la quebrada la Sonadora, finca la Merced, 75°37'N, 04°26'W, 3200–3500 m, 20 May 2007, L.A. Rodas 21 (HUQ); municipio de Salento, Reserva Forestal Navarco, 04°38'N, 75°34'W, 2920 m, 18 Apr 1989, G. Arbeláez S., C. Vélez N., N. Carvajal D. & J. Uribe M. 2898 (HUQ); municipio de Salento, vereda Cócora Alto, Área de Conservación la Montaña, 4°37'N, 75°28'W, 3120 m, 20 May 2007, P. Sepúlveda, O. Martínez & T. Gómez, 157 (HUQ); municipio de Salento, Reserva Natural Alto Quindío, Acaime, 4°37'N, 75°28'W, 2780 m, 12 May 1991, C.A. Agudelo, L.F. Hoyos, D. Macías & A.L. López. 1736 (HUQ); municipio de Córdoba, vereda las auras, finca el Cedral, 75°37'N, 04°26'W, 2950–3000 m, 14 Dec 1993, M.C. Vélez, D. Macías & L.F. Hoyos 3750 (HUQ). **Tolima:** municipio de Cajamarca, vereda la luisa, camino hacia la N, 4°28'27"N, 75°33'25"W, 3000–3300 m, 5 Jun 2013, L.A. Rodas 102 (FAU, HUQ).

Glossoloma velutinum is similar to *Glossoloma ichthyoderma* (Hanst.) J.L. Clark because of the erect shoots and subshrub epiphytic habit. It should be noted that *Glossoloma ichthyoderma* is more frequently found as a terrestrial subshrub in contrast to the epiphytic subshrub habit of *G. velutinum*. The shoots of *G. ichthyoderma* are covered in peltate scales in contrast to the velutinous indumentum and absence of peltate scales in *G. velutinum*.

Distribution and habitat.—*Glossoloma velutinum* is known from the Cordillera Central of the Colombian Andes in the departments Quindío (western slopes) and Tolima (eastern slopes) in cloud forests from 2780 to 3300 m.

Etymology.—The specific epithet reflects the velutinous indumentum that covers the stems and leaves.

Phenology.—Collected in flower during March, April, and December, in fruit during May and August.

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REFERENCES

- CLARK, J.L. 2009. Systematics of *Glossoloma* (Gesneriaceae). Syst. Bot. Monogr. 89:1–126.
- CLARK, J.L. 2012. Colombia – an unexplored biodiversity hotspot revisited after 25 years. Gesneriads 62:40–47.
- CLARK, J.L. & L. CLAVIJO. 2012. *Columnnea antennifera*, a new species of Gesneriaceae from the Cordillera Central of the Colombian Andes. J. Bot. Res. Inst. Tex. 6:385–390.
- CLAVIJO, L. & J.L. CLARK. 2012. *Drymonia atropurea* (Gesneriaceae), a new species from northwestern South America. J. Bot. Res. Inst. Tex. 6:71–74.
- CLAVIJO, L. & J.L. CLARK. 2014. *Drymonia crispa* (Gesneriaceae), a new species from northwestern Colombia. Brittonia 66(1):65–69. DOI 10.1007/s12228-013-9310-4: 1. [published online July 4, 2013]
- SMITH, J.F., M. AMAYA-MÁRQUEZ, O.H. MARÍN-GÓMEZ, & J.L. CLARK. 2013. Four new species of *Columnnea* (Gesneriaceae) with primary distributions in Colombia. J. Bot. Res. Inst. Tex. 7:667–679.
- WEBER, A., J.L. CLARK, & M. MÖLLER. 2013. A new formal classification of Gesneriaceae. Selbyana 31:68–94.

BOOK NOTICE

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