



***Croton lindquistii* (Euphorbiaceae): a new arborescent species from western Mexico**

VICTOR W. STEINMANN

Instituto de Ecología, A.C., Centro Regional del Bajío, Av. Lázaro Cárdenas 253, 61600 Pátzcuaro, Michoacán, Mexico
Email: victor.steinmann@inecol.edu.mx

Abstract

Croton lindquistii, a new species in *Croton* subg. *Geiseleria* sect. *Eluteria* subsect. *Eluteria*, is described and illustrated. It occurs in the tropical deciduous forests of western Mexico from Sonora to Oaxaca. The species is economically important, and during the past four decades, plants have been extensively harvested for their straight, hard, and durable trunks that are used as fence posts and stakes in agricultural fields. Although the exact affinities of *C. lindquistii* are unknown, it is similar to both *C. niveus* and *C. pseudoniveus*. It differs from the former by having ovate to cordiform leaves, fruiting pedicels less than 3 mm long, and spiciform thyrses that are very compact with the axis obscured by the buds. It differs from the latter by having 15–16 stamens per flower and stellate-pubescent ovaries and fruits. The name *Croton fantzianus* has been misapplied to *Croton lindquistii*. A key is provided that distinguishes the new species from the five other members of *Croton* sect. *Eluteria* subsect. *Eluteria* that have ovaries and fruits with stellate pubescence.

Introduction

The megadiverse genus *Croton* Linnaeus (1753: 1004) occurs extensively throughout tropical regions of both the Old and New Worlds, and Mexico is an important center of diversity with three subgenera (van Ee *et al.* 2011), 14 sections (van Ee *et al.* 2011), and approximately 125 species (Steinmann 2002, Martínez Gordillo *et al.* 2002). In addition to its great floristic value, the genus contains a number of species with medicinal properties, e.g., *C. draco* Schlechtendal & Chamisso (1831: 360), *C. tiglium* Linnaeus (1753: 1004), and *C. urucurana* Baillon (1864: 335). The tropical deciduous forests of western Mexico possess another commercially important group of species, and various taxa of *Croton* subg. *Geiseleria* (Klotzsch 1841: 254) Gray (1856: 391) sect. *Eluteria* Grisebach (1859: 39) are harvested for their trunks, which are used as fence posts and stakes in agricultural fields (Lindquist 1999, 2000, Rendón 2002). Despite their local abundance and economic importance, the species of *Croton* sect. *Eluteria* have not been studied in detail, and the taxonomy of the group is still complicated. One of the problems involves the application of the name *Croton fantzianus* Seymour (1979: 171). This species was initially described from plants collected in Nicaragua, but it has since been reported from western Mexico (Webster 2001a, Lindquist 1999, Lindquist 2000, Martínez Gordillo 2011). However, after careful study and comparison of material from Mexico and Nicaragua, I conclude that plants from these two regions are not conspecific, and the purpose of this article is to formally describe the Mexican plants as new to science.

Taxonomy

The classification of the New World species of *Croton* has benefited from recent molecular studies (Berry *et al.* 2005, van Ee *et al.* 2008, 2011). A number of new infrageneric taxa have been proposed, and others have changed in circumscription. In contrast to the previous classification of Webster (1993), subgenera are used as the first infrageneric category, with these further divided into sections. For the purpose of this article, the classification of van Ee *et al.* (2011) is followed.

As mentioned in the introduction, the name *Croton fantzianus* has been used for the species herein described, but I believe that this application is incorrect. The type of *C. fantzianus* was collected in the province of Nueva Segovia, Nicaragua, and the protologue states that fruits were present (Seymour 1971: 171). However, the pubescence of these was not described, and none of the type specimens that I have located possess ovaries or fruits. The species was characterized as having ovaries with lepidote scales by Webster (2001b) in the Flora de Nicaragua, and all material from Nicaragua that I have examined that otherwise appears similar to the type of *C. fantzianus* possesses ovaries with lepidote scales. Fruit pubescence is of great systematic value in subsect. *Eluteria*, and the trait is not known to be variable within a species. Given this evidence, I think that there is sufficient justification to treat the plants from western Mexico as distinct from *C. fantzianus*.

Five other species of *Croton* subsect. *Eluteria* possess ovaries and capsules with stellate pubescence: *C. carpostellatus* León Enriquez & Martínez-Gordillo (2008: 189), *C. gomezii* Webster (2005: 12), *C. arboreus* Millspaugh (1896: 303), *C. niveus*, and *C. sousae* Martínez Gordillo & Cruz-Durán (2002: 142). The following key will distinguish *C. lindquistii* from these.

1. Leaves pinnately veined.....*Croton carpostellatus*
- Leaves palmately veined..... 2
2. Stamens 8–11 per flower..... 3
- Stamens 13–17 per flower..... 5
3. Ovaries and fruits echinate with long, slender protuberances that terminate with a stellate hair *Croton gomezii*
- Ovaries and fruits smooth to slightly muricate, lacking long, slender protuberances that terminate with a stellate hair..... 4
4. Leaves coriaceous; stellate hairs of the ovary with the rays all appressed; petals of the pistillate flowers persistent
- *Croton arboreus*
- Leaves membranaceous; stellate hairs of the ovary porrect; petals of the pistillate flowers caducous..... *Croton sousae*
5. Mature leaves ovate to cordiform; thyrses spiciform, very compact, the axis obscured by the buds; the distal buds more or less the same size as the proximal buds; fruiting pedicels ≤ 3 mm long; fruits subglobose..... *Croton lindquistii*
- Mature leaves mostly lanceolate to narrowly ovate; thyrses racemiform, relatively loose, the axis visible; the distal buds much smaller than the proximal buds; fruiting pedicel > 3 mm long; fruits subglobose or oblong..... *Croton niveus*

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