



***Croton condorensis*: an enigmatic new species of Euphorbiaceae from southern Ecuador**

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Abstract

Croton condorensis (Euphorbiaceae), a new species from the Cordillera del Cóndor in southern Ecuador, is here described and illustrated. The new species occurs in sclerophyllous vegetation on sandstone substrate. A detailed examination of its morphology indicates that the species has some characters in common with *Croton* sect. *Cyclostigma*, but it also differs from that section in several other key characters. Given its restricted geographic distribution, the particular substrate where it grows, and its unusual morphology, we hypothesize that *Croton condorensis* might represent a previously unsampled clade of the *Croton* phylogeny.

Resumen

Se describe e ilustra *Croton condorensis* (Euphorbiaceae), una nueva especie de la Cordillera del Cóndor en el sur de Ecuador. Esta especie se encuentra en vegetación esclerófila sobre substrato de arenisca. Una examinación detallada de su morfología indica que la especie comparte algunos caracteres morfológicos con miembros de *Croton* sect. *Cyclostigma*, pero también posee caracteres clave que no son compatibles con la morfología de dicha sección. Dada su restringida distribución geográfica, el particular substrato en el que crece, y la falta de afinidades morfológicas evidentes con alguna de las secciones de *Croton*, planteamos la hipótesis de que *Croton condorensis* podría representar un clado de la filogenia del género aún no muestreado.

Introduction

The Catalogue of the vascular plants of Ecuador (Jørgensen & León-Yáñez 1999) lists 39 species of *Croton* Linnaeus (1753: 1004), 13 of which appear to be endemic to the country (Cerón *et al.* 2011). After the publication of the catalogue, there have been several updates on Ecuadorian *Croton*, such as changes in name status, new records for the country, and recently described species (Smith 2006, Riina *et al.* 2007, Riina & Berry 2010). The taxonomic knowledge of New World *Croton* has improved significantly with the establishment of a new classification based on a phylogenetic framework, taking into account molecular, morphological and geographic information (van Ee *et al.* 2011). This classification substitutes the previous one that was based solely on morphology (Webster 1993). With approximately 1200 species, *Croton* is so diverse that new species continue to be described, and thus unsampled clades (sections) are likely to be detected in future phylogenetic analyses.

The new species, *Croton condorensis*, adds to an increasing list of plant species described in recent years from the Cordillera del Cóndor (Rogers 2002, Ulloa & Neill 2006, Clark *et al.* 2010, Jara-Muñoz 2011, Neill & Asanza 2012, Neill *et al.* 2012). The Cordillera del Cóndor is a highly diverse and isolated sandstone mountain range located in southern Ecuador, along the border with Peru (Schulenberg & Awbrey 1997, Neill 2005). It runs north-south for about 150 km east of the main Andean chain and reaches a maximum elevation of around 2900 m (Rodríguez *et al.* 2006). We describe and illustrate *Croton condorensis*, a small tree growing in open sclerophyllous vegetation on the Ecuadorian side of the Cordillera del Condor.

Cyclostigma is usually rugose, or with some kind of ornamentation. In contrast, the seeds of *Croton condorensis* have a smooth, shiny and marbled surface. In addition, none of the Ecuadorian species of sect. *Cyclostigma* grow on the type of high elevation sclerophyllous vegetation where *C. condorensis* occurs. These observations, along with the morphological differences listed above, suggest that the new species could be an isolated lineage within *Croton*. However, the indication of sect. *Cyclostigma* as the most likely section to which *C. condorensis* belongs, as suggested by the sectional key (van Ee *et al.* 2011), cannot be ruled out until additional specimens as well as sequence data from this species become available for additional morphological and phylogenetic analyses.

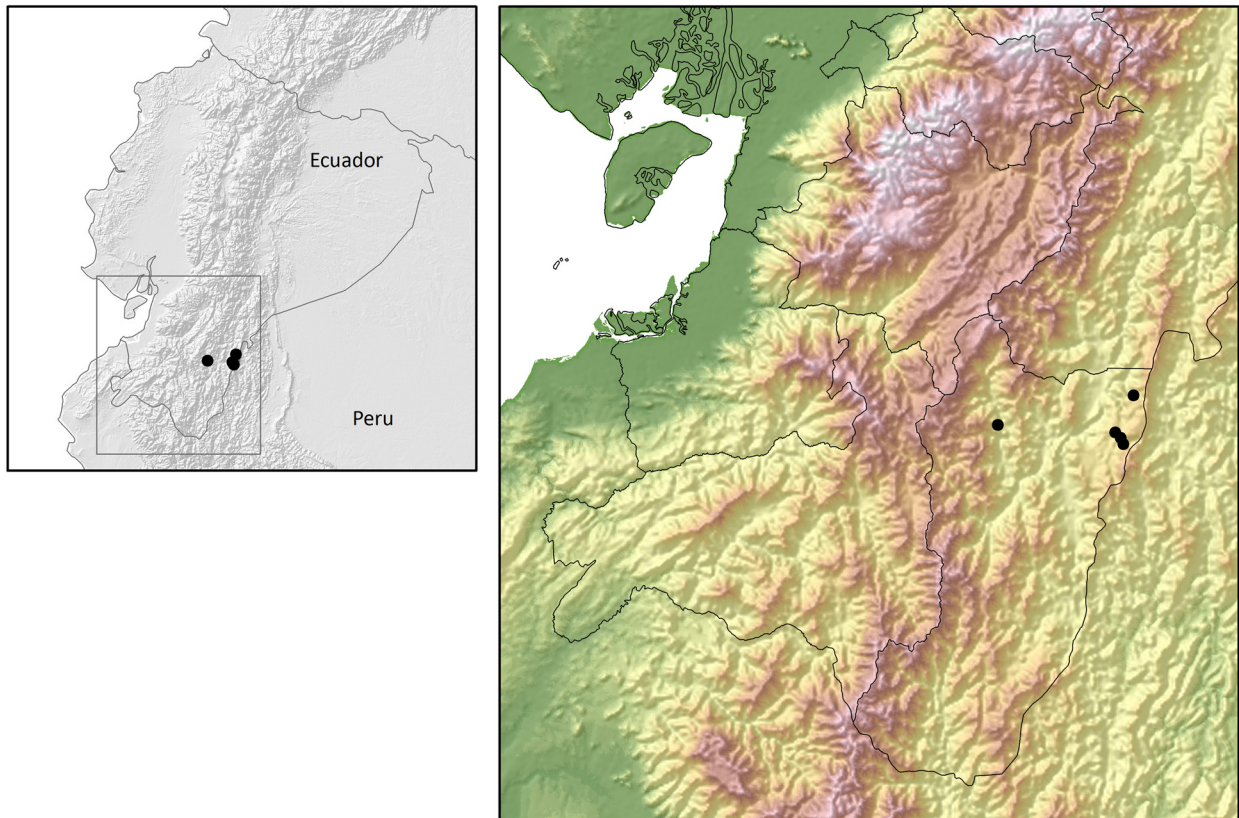


FIGURE 2. Map of Ecuador and a detail of the area of distribution of *Croton condorensis* in southern Ecuador.

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