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Croton rufolepidotus (Euphorbiaceae s. str.), a New Species from Antioquia, Colombia

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ABSTRACT. *Croton rufolepidotus* Caruzo & Riina (Euphorbiaceae s. str.), a new species from Colombia, is here described and illustrated. The new species is endemic to an area of lowland secondary forests in Antioquia. Morphological characters indicate that this species belongs to *Croton* sect. *Cleodora* (Klotzsch) Baill. due to its arborescent habit, petiolar glands, 15 to 25 stamens, as well as the pistillate flowers with imbricate sepals and multifid styles.

Key words: Colombia, *Croton*, *Croton* sect. *Cleodora*, Euphorbiaceae, IUCN Red List.

Croton L. is a pantropical genus with an estimated 1223 species in the Euphorbiaceae family (Govaerts et al., 2000). Although the genus occurs mostly in tropical regions worldwide, it also has some representatives in subtropical and northern temperate areas. In the Neotropics, its centers of diversity are Brazil, the West Indies, and Mexico (Burger & Huft, 1995). In Colombia, there are 80 species of *Croton* (Murillo, 2004), including herbs, shrubs, and trees occurring in all kinds of habitats, with the greatest number of species concentrated in the Andean region of the country (Murillo, 1999). As a result of ongoing systematic studies on *Croton* sect. *Cleodora* (Klotzsch) Baill. by the senior author, new species have been described for that section (Caruzo et al., 2008, 2010). In this paper, we describe *C. rufolepidotus* Caruzo & Riina, a new species of *Croton* sect. *Cleodora* known from Antioquia Department, Colombia, where it grows in lowland secondary forests.

Croton rufolepidotus Caruzo & Riina, sp. nov.

TYPE: Colombia. Antioquia: Tarazá, Corr. El 12, camino El 12–Barro Blanco, Km 4 NO Medellín, 210 km en troncal del Caribe, bht/bmht, 7°30'N, 75°16'W, 25 July 1987, R. Callejas, J. Betancur & F. J. Roldán 3611 (holotype, MO; isotypes, DAV, HUA, US). Figure 1.

Haec species *Crotoni salutaris* Casar. affinis, sed ramulis cylindricis, stipulis auriculatis, inflorescentiae omnibus cymulis proximalibus pistillatis, bracteis linearibus, staminibus 15 ad 25, floribus femineis majoribus lobis calycis foliaceis non carnosus petalis reductis carentibus et stylis multifidis differt.

Tree 6–10 m tall, monoecious, indument rufous-silvery, lepidote trichomes without a central ray, trichomes pale, reddish, or sometimes with a reddish center and a pale margin; branchlets terete, rufous-silvery, covered by reddish and scattered pale trichomes. *Leaves* alternate; lamina 3–11.5 × 1–4.5 cm, narrowly ovate to ovate-elliptic, discolorous, apex narrowly acute to acuminate, base rounded to slightly cordate, margin entire, adaxial surface glabrous, abaxial surface densely lepidote, covered by pale trichomes and scattered reddish trichomes or trichomes with a reddish center and a pale margin, venation pinnate, brochidodromous, secondary veins 5 to 11, abruptly upturned toward the next ones, tertiary veins inconspicuous; petiole 0.5–1.5 cm, with a pair of stalked basilar glands ca. 1 mm diam., stalks 1–1.5 mm; stipules 0.5–1.5 cm, auriculate, apex caudate, deciduous. *Inflorescence* 2.5–6.5 cm, terminal; inflorescence axis terete, striate, lepidote; proximal cymules pistillate, with a single flower, distal cymules staminate, with 1 or 2 flowers, bracts 3–5 mm, linear, prophylls inconspicuous. *Staminate flowers* ca. 1 cm, campanulate, pedicels ca. 6 mm; calyx ca. 4 mm, lepidote externally, rufous-silvery, covered by reddish and scattered pale trichomes, glabrate internally; calyx lobes 5, united up to half of their length, ca. 2 mm, entire, equal, valvate, triangular, apex acute; petals ca. 4 mm, spatulate, densely villous externally, apex with an uneven margin; disk 5-segmented; stamens 15 to 25, filaments subulate; receptacle villose with simple trichomes. *Pistillate flowers* 1–1.4 cm, flask-shaped; pedicel 4–6 mm; calyx 6–8 mm, lepidote externally, rufous-silvery, covered by reddish and scattered

Figure 1. *Croton rufolepidotus* Caruzo & Riina. —A. Branch with flowers and fruits. —B. Pistillate flower. —C. Detail of the gynoecium. —D. Fruit. —E. Staminate flower. —F. Petal of the staminate flower. —G. Aestivation of the pistillate sepals. —H. Aestivation of the staminate sepals. Drawn from the holotype Callejas et al. 3611 (MO).

pale trichomes, glabrate internally; calyx lobes 5, united at the base, 6–8 mm, equal, quincuncial, ovate-lanceolate, foliaceous, not fleshy; petals absent; disk entire, slightly 5-lobed; ovary sub-

globose, lepidote; styles 3, connate at the base, then divided into 3 short columns ca. 1/3–1/2 of the stylar length, each one branching into 8 terminal arms, with a total of 24 tips. Capsules ca. 1.5 cm,

Table 1. Principal characters distinguishing *Croton rufolepidotus* from *C. salutaris*.

Character	<i>C. rufolepidotus</i>	<i>C. salutaris</i>
Trichomes	lepidote without a central ray	lepidote-porrect, with a long central ray
Branchlet shape	terete	angular
Stipule shape	auriculate	linear-lanceolate
Bract shape	linear	subulate
Proximal cymules of inflorescence	pistillate	pistillate and staminate
Stamen number	15 to 25	15
Pistillate flower length (mm)	10–14	7–8
Pistillate calyx length (mm)	6–8	3–4
Pistillate calyx lobes	not fleshy	fleshy
Reduced pistillate petals	absent	present
Pistillate sepals in fruit	slightly accrescent	not accrescent
Division of styles	multifid (more than 12 terminal tips)	quadrifid (12 terminal tips)
Habitat	lowland secondary forest	montane rainforest
Distribution	Antioquia, Colombia	southeastern Brazil

subglobose, 3-angled, lepidote, sepals slightly accrescent; seeds not seen.

Distribution and habitat. *Croton rufolepidotus* is endemic to Antioquia, Colombia, where it grows in lowland secondary forests, between 180 and 310 m elevation. According to R. Callejas (pers. comm.), much of the area where this species has been collected has since been deforested for coca plantations (*Erythroxylum coca* Lam. and *E. novogranatense* (D. Morris) Hieron.).

IUCN Red List category. Following IUCN Red List criteria (IUCN, 2001), *Croton rufolepidotus* can be considered as Critically Endangered (CR B1ab) due to its restricted distribution (known from only one location) and the continuing decline of the area and quality of habitat where the species occurs.

Etymology. The specific epithet of this new species is taken from the Latin and refers to the rufous color of its lepidote indument.

Relationships. Following the sectional synopsis of *Croton* by Webster (1993), and based on current revisionary work and phylogenetic studies on *Croton* sect. *Cleodora* by the first author, the new species clearly belongs to this Neotropical section. The suite of characters shared by members of section *Cleodora* are the arborescent habit; the petiolar glands in an abaxial or lateral position; 15 to 25 stamens; quincuncial or imbricate, usually accrescent, and sometimes fused pistillate sepals; and quadrifid (12 terminal tips) or multifid (more than 12 terminal tips) styles fused at the base or into a longer column.

Among the other species within section *Cleodora*, this new species is morphologically most similar to *Croton salutaris* Casar. from the Atlantic rainforest of

southeastern Brazil (São Paulo, Minas Gerais, Rio de Janeiro, and Espírito Santo states), but that species differs from *C. rufolepidotus* in several features, which are shown in Table 1. The vegetative features that best distinguish *C. salutaris* from *C. rufolepidotus* are the stipule shape (linear-lanceolate in *C. salutaris* vs. auriculate in *C. rufolepidotus*) and branchlet morphology (angular in *C. salutaris* vs. terete in *C. rufolepidotus*).

Paratypes. COLOMBIA. **Antioquia:** Tarazá, Corr. El Doce, 210 km NNE of Medellín, carr. El Doce–Barro Blanco, near entrance to Hac. Las Mercedes, rd. outside of finca, 7°30'N, 75°16'W, 25 July 1987, W. W. Thomas & C. J. Castaño C. 5525 (COL, HUA, JAUM, MO, NY); Tarazá, Corr. El 12, Vía El Doce–Barro Blanco, Hac. las Mercedes, potrero San Juan, bht/bhmt, 7°30'N, 75°20'W, 7 Nov. 1987, R. Callejas, F. J. Roldán, A. L. Arbeláez & D. L. Echeverry 5425 (F, HUA).

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