Croton martinianus (Euphorbiaceae), a New Species from Mexico

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ABSTRACT. A new species of *Croton* (sect. *Geisleria*) from western Mexico is described and illustrated. The relationship between this species and *C. cupulifer* McVaugh is discussed, and a key distinguishing these two species and *C. glandulosus* L. is provided.

The tropical deciduous forest flora of southeastern Sonora, Mexico, is diverse and still relatively little known. This area was first floristically treated by the late Howard Scott Gentry in his 1942 publication *Rio Mayo Plants*. During the past few years, the University of Arizona Herbarium has conducted a project to revise and update this work. Trips to inventory the area's plants have resulted in a number of collections of an interesting herbaceous *Croton*; one specimen from northern Sinaloa and two specimens from Jalisco have also been located. These collections cannot be referred to any known species and are here described as new.

Croton martinianus V. W. Steinmann, sp. nov.

TYPE: Mexico. Sonora: Mpio. Alamos, Sierra de Alamos, N side of the range ca. 2 km SW of Alamos along the trail from El Chalatón to La Huerta, 27°00'N, 108°58'W, ca. 750 m, 31 Aug. 1996, *Steinmann 952* (holotype, ARIZ; isotypes, BM, DAV, IBUG, MEXU, MICH, MO, NY, RSA, USON). Figure 1.

Herba perennis vel fortasse annua usque ad 30 cm alta, erecta vel ascendens, stellato-pubescent; stipulae attenuato-subulatae; folia principalia alterna, longipetiolata, lamina ovata, dentato-serrata; folia superiora minora et saepe angustiora et lanceolata, opposita; racemus terminalis, floribus pistillatis (1–)4–8, staminatis usque ad 40; bracteae attenuato-subulatae; florum staminatorum petala alba, stamina 10–11; flores pistillati apetalis, sepalis viridibus, inaequalibus, oblanceolatis, obovatis, vel spathulatis, ovaria subglobosa, stellato-villosa, styli 3, bipartiti; capsulae subglobosae; semina oblonga, nitida, carunculata.

Crotone cupulifero affinis, a quo differt bracteis longis et ovario stellato-villoso.

Species in honorem Paul S. Martin (1928–).

Monoeocious perennial herbs (but flowering in the first year) to 30 cm high, erect to ascending, stellate-pubescent throughout; from a narrow tap-

root reaching 6 mm diam.; stems little branched below, often diffusely branched above; lower internodes to 6.5 cm long, decreasing in length above; stipules linear-subulate to 5.3 mm long, usually terminated by stellate trichomes; lower leaves alternate, on petioles (0.6–)1.1–3.8 cm long, with a pair of slender stipitate cupuliform petiolar glands 0.1–0.3 mm diam. on the sides of the petioles just below the point of attachment with the lamina, the lamina ovate, palminerved with 3–5 prominent veins, rounded at the base, serrate-dentate, generally acute at the apex, 1.6–4.7 cm long, 1.4–3.5 cm wide, densely hoary canescent to green and sparsely pubescent, the trichomes stellate with rays to 0.6 mm long; upper leaves nearly sessile or on short petioles, serrate-dentate, (1.0–)2.0–3.4 mm long, mostly opposite or below the flowering branches appearing whorled; inflorescences exceeding the subtending leaves, terminal, racemose, 2.5–7.0 cm long, with (1–)4–8 pistillate flowers and up to ca. 40 staminate flowers; bracts linear-subulate, 1.1–2.5 mm long, subtended at the base by clusters of orange-brown glands ca. 0.1 mm long, tips of the bracts with 1–5 straight bristle-like hairs; staminate flowers on pedicels 1.1–2.0 mm long, calyx 1.7–2.2 mm long, the sepals united toward the base, their free lobes deltoid, 1.2–1.7 mm long, petals white, narrowly obovate-elliptic, 1.7–2.2 mm long, 0.9–1.0 mm wide, villous especially along the margins and toward the base; small ovate glands ca. 0.2 mm long opposite the sepals and alternating with the petals; receptacle densely villous within; stamens 10–11, filaments glabrous, 1.0–1.4 mm long, anthers ca. 0.5 mm long, ca. 0.3 mm wide, elliptic, basifixed and inflexed in the bud; pistillate flowers apetalous, on pedicels 0.6–2.1 mm long, the sepals 3.2–4.1 mm long, 1.5–2.9 mm wide, oblanceolate to spatulate, green and somewhat foliaceous, unequal, the proximal generally smaller and narrower, occasionally small linear-filiform appendages to 0.8 mm long present between the sepals; ovary nearly globose, stellate-pubescent, appearing villous, the rays of the trichomes to 1.9 mm long; styles 3, 1.7–2.0 mm long, biparted, pa-

Figure 1. *Croton martinianus* V. W. Steinmann. —A. Habit. —B. Pistillate flower. —C. Seed. All from Steinmann 93-309.

pillate and often beset with stellate trichomes; capsule nearly globose 3.6–3.9 mm diam.; columella 2.6–3.0 mm long; seeds oblong, 3.0–3.3 mm long, 2.0–2.2 mm wide, dorsoventrally compressed, shallowly foveolate, blackish brown to mottled black-gray, shiny, carunculate; caruncle narrowly and transversely elliptic.

Phenology. Flowering and fruiting overlap broadly. Reproductive plants have been collected in March and June to September.

Distribution and habitat. Southeastern Sonora, northern Sinaloa, and northern Jalisco, 150–1200 m. On the north side of the Sierra de Alamos, this species is frequent along the trail from El Chalatón to La Huerta, where the plants mostly occur in rocky, red-orange soil on relatively dry hillsides in tropical deciduous forest and lower oak woodland.

Etymology. The specific epithet honors the well-known paleontologist Paul S. Martin, an avid student of the flora of Sonora and Chihuahua and a treasured friend.

Following the sectional delimitations of *Croton* as circumscribed by Webster (1993), *C. martinianus* belongs to section *Geiseleria* (Klotzsch) Bailon, where it is most similar to *C. cupulifer* McVaugh, a species of western Mexico known from the states of Colima and Jalisco. Both of these taxa possess coarsely toothed leaves that are quite diverse in form; the lower ones are usually alternate, long-petiolate, and relatively large, while those associated with the inflorescence are opposite to whorled, subsessile, smaller, and narrower. The two species also have attenuate-subulate stipules, nearly identical cupuliform petiolar glands, and unequal pistillate sepals that are somewhat foliaceous. In the protologue of *C. cupulifer*, McVaugh (1961: 163) mentioned that 1 or more extra calyx lobes often develop in the pistillate flowers. Although this unusual characteristic has not been observed in *C. martinianus*, linear-filiform appendages are rarely present between the sepals, and these may represent highly reduced sepals. The salient distinguishing features of these two species are given in the key.

The leaves of *Croton martinianus* vary from densely hoary-canescens to green and sparsely pubescent. This character appears environmentally influenced, with the hoary-canescens leaves occurring in drier periods of the year.

Croton martinianus also bears a resemblance to *C. glandulosus* L., to which the first collections were initially referred. The following key will separate *C. martinianus* from *C. glandulosus* and *C. cupulifer*:

- 1a. Pistillate flowers in a tight cluster and appearing fasciculate; inflorescence generally less than 2 cm long and not exceeding the subtending leaves *C. glandulosus*
- 1b. Pistillate flowers moderately spaced and arranged in a raceme; inflorescence generally 3–10 cm long and exceeding the subtending leaves.
 - 2a. Plants perennial herbs, sometimes appearing annual; staminate bracts 1.1–2.5 mm long; pubescence of the ovary appearing villous, at least some of the rays of the stellate trichomes greater than 1 mm long *C. martinianus*
 - 2b. Plants shrubs or less frequently perennial herbs; staminate bracts 0.6 mm or less; pubescence of the ovary appearing puberulent, the rays of the stellate trichomes less than 0.3 mm long *C. cupulifer*

Paratypes. MEXICO. **Jalisco:** 1 km a NE de San Cristóbal de la Barranca, 900 m, 13 Feb. 1993, *Lomelín 2010* (DAV); San Cristóbal de la Barranca, 12 km al S de la población, 1200 m, 26 Aug. 1987, *Ornelas & Cervantes 1199* (HUMO). **Sinaloa:** Mpio. Salvador Alvarado, cerros al N de Terrero, 150 m, 12 Aug. 1988, *Bojórquez 688* (MEXU). **Sonora:** 1.25 mi. NW of Alamos in El Rincón area, 1350 ft., 3 Sep. 1973, *Fish 82* (UC); ca. 2 mi. NE of Alamos along road to Cuchuhuari, 27°01'N, 108°54'W, 410 m, 19 Aug. 1994, *Fishbein 1892* (ARIZ); Sierra de Alamos, 22 July 1989, *Martin s.n.* (ARIZ); 8 mi. W of Alamos, road from Minas Nuevas to Aduana, 24 June 1984, *Starr 779* (ARIZ, DAV); same locality as the type, 27 Aug. 1993, *Steinmann 93-309* (ARIZ, DAV, MEXU); Arroyo Gochico, ca. 10 km (by air) E of San Bernardo, S-facing slope above arroyo, along the trail from San Bernardo to Gochico Nuevo, in the vicinity of 27°24'N, 108°44'30"W, 750 m, 15 Mar. 1995, *Steinmann 606* (ARIZ, DAV, F, HUMO, MEXU, MO, NY, RSA, UCR); ca. 5 km (by road) N of Güirocoba along the road to Choquincahui, in the vicinity of 26°57'N, 108°41'30"W, ca. 500 m, 13 Mar. 1995, *Steinmann 613* (ARIZ); Sierra de Alamos, El Rincón Viejo, Arroyo El Aguaje, ca. 3.4 km (by air) N of Alamos, 27°03'55"N, 108°56'W, 480–520 m, 23 Sep. 1993, *Van Devender 93-1066* (ARIZ).

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