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A New Species and Notes on *Drymonia* (Gesneriaceae) from Costa Rica

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ABSTRACT. A new species of *Drymonia* Martius, *D. rubripilosa*, is described, illustrated, and compared to *D. multiflora* (Oersted ex Hanstein) Wiehler, its closest presumed relative. The new species is distinguished by its sparsely to densely red-pilose stem apices, petioles, pedicels, calyxes, corollas, and ovaries. Its bivalved, fleshy capsule with fleshy indehiscent endocarp concealing the seeds is unique for Costa Rican species, shared otherwise only with *D. folsomii* and *D. multiflora*. Taxonomic comparison with *D. multiflora* and keys to separate the latter from *D. rubripilosa* are discussed.

RESUMEN. Se describe e ilustra una nueva especie de *Drymonia* Martius, *D. rubripilosa*, y se la compara con *D. multiflora* (Oersted ex Hanstein) Wiehler, especie que se presume es su pariente más cercana. La nueva especie se distingue por sus ramitas distales, pecíolos, pedicelos, cálices, corolas y ovarios esparcida a moderadamente rojo-pilosos. Su cápsula bivalvada, carnosa, con el endocarpio indehiscente y carnosos, que cubre a las semillas, es único para las especies costarricenses, y compartido únicamente con *D. folsomii* y *D. multiflora*. Se hace la comparación taxonómica con *D. multiflora* y se discuten las claves para separar a ésta de *D. rubripilosa*.

Key words: Costa Rica, *Drymonia*, Gesneriaceae.

Drymonia Martius is one of the largest genera of Gesneriaceae in the Neotropics, with an estimated 140 species (Burt & Wiehler, 1995). Traditionally, *Drymonia* has been separated from other genera in the tribe Episcieae because of its basal poricidal dehiscence of the anthers. Other characters that stand out in the genus are the scandent habit of many of its species and the usually funnel-shaped corolla with spurred base and lacinate lobes.

The last and only revision of Costa Rican *Drymonia* was carried out by C. V. Morton in 1938 for Paul Standley's *Flora of Costa Rica*; Morton recognized 12 species of the genus. Since then, nomenclatural and taxonomic actions have yielded a total of 19 species for the country, making the genus the second largest in Costa Rica after *Columnea* (36 spp.) and before *Besleria* (15 spp.). Continuing efforts to document

Costa Rica's flora through the *Manual de Plantas de Costa Rica* project have produced interesting specimens of a new species of *Drymonia* as proposed below.

***Drymonia rubripilosa* Kriebel, sp. nov. TYPE:**
Costa Rica. Limón: Faja Costeña de Limón, Asunción, 9°54'10"N, 83°10'20"W, 280 m, 15 Mar. 1995, A. Estrada 399 (holotype, INB; isotypes, CR, MO). Figure 1.

Haec species *Drymoniae multiflorae* (Oersted ex Hanst.) Wiehler affinis, sed pedicellis minoribus, lamina et calycis lobatis majoribus, ramis, petiolis, pedicellis, corolla et ovario rubropilosis differt.

Semi-woody lianas; stems \pm terete, sparsely to densely red-pilose apically, trichomes ca. 1 mm long, internodes 1–7.5 cm, 1.5–4 mm diam., with reddish flaky epidermis in older stems, frequently with adventitious roots. Leaves somewhat unequal in a pair; petiole 3–10 mm long, 0.75–1.25 mm diam., red-pilose; blade elliptic, oblong or obovate, 3–13 \times 1.6–6 cm, chartaceous, apex acuminate, base acute to rounded, margin denticulate to serrate, veins pinnate, 3 to 6 on each side, prominent on lower side, usually red, glabrous adaxially, sparsely to moderately pilose abaxially, especially on the prominent veins, trichomes 0.75–1.3 mm long. Inflorescence of solitary, axillary flowers; peduncles lacking; bracts inconspicuous, linear, 2.5–5 mm long, red; pedicels 5–10 mm long, densely red-pilose. Flowers with calyx lobes divided almost to the base, 1.6–3 cm long, 3–15 mm wide at the base, the dorsal lobe somewhat smaller than the rest, lanceolate, the apex subulate, the margin deeply toothed to fimbriate, red to dark red; corolla 3–4 cm long, white with yellowish tinges inside the tube, with purple veins on the lobes adaxially, red-pilose especially on the distal exterior half of the tube dorsally, the latter ventricose toward the limb but then somewhat contracted, the spur ca. 5 mm long, glabrous, the limb somewhat 2-lipped, the lobes erose, the ventral lobe somewhat larger; stamens adnate to the corolla base, filaments connate above attachment to corolla, coiling after anthesis; disc a single posterior nectariferous gland; ovary 3–4 mm long at anthesis, red-pilose; style ca. 2 cm long. Fruit

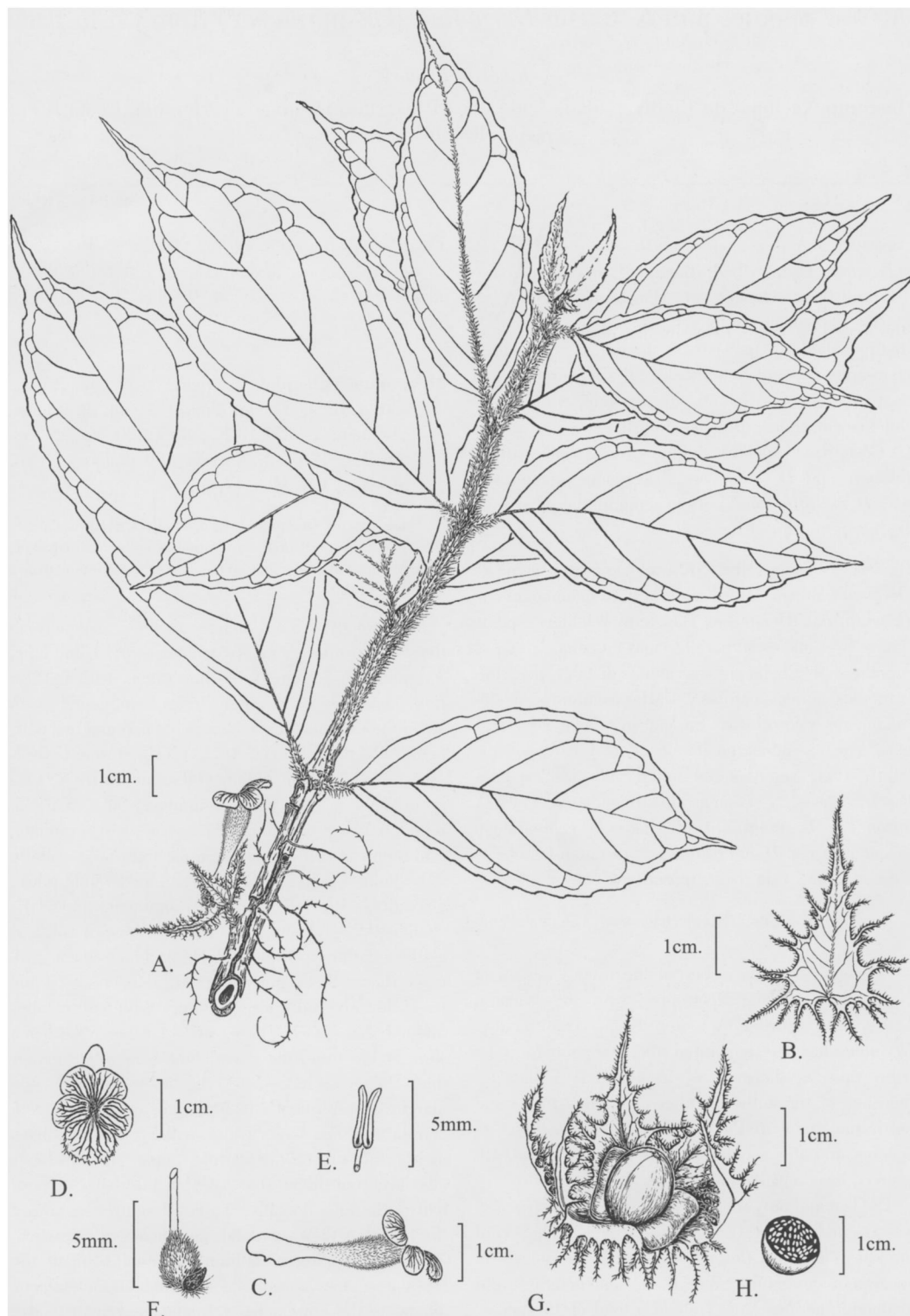


Figure 1. *Drymonia rubripilosa* Kriebel. —A. Habit. —B. Calyx lobe. —C. Corolla, lateral view. —D. Corolla, frontal view. —E. Anther thecae. —F. Ovary with dorsal gland. —G. Fruit. —H. Cross section of fleshy endocarp. (A, C–F, A. Estrada 399; B, G, H, R. Kriebel et al. 3994.).

a fleshy capsule persistent in the calyx, ovoid, 1.6 × 1.3 cm, purple, dehiscing by 2 valves that are light purple adaxially and that expose a mass of seeds within the persistent purple endocarp, the latter indehiscent; seeds 0.4–1 mm, oblong, beige, with inconspicuous longitudinal lines, not twisted.

Distribution and habitat. *Drymonia rubripilosa* is so far endemic to Costa Rica, where it is restricted to remaining forests in the northern (Boca Tapada region) and central (Barbilla and Braulio Carrillo National Parks, La Selva OTS Field Station) Caribbean lowlands, at 50–300 m, where it can be found climbing over small trees in the understory or in clearings. It is anticipated to appear in similar habitats in Nicaragua.

Phenology. Plants have been collected in flower from March to June and in fruit from June to September.

Drymonia rubripilosa can be distinguished by its scandent habit with numerous adventitious roots; sparse to dense red-pilose indument on distal branchlets and pedicels, the calyx, and the distal half of the corolla tubes and ovaries; short pedicels; and a conspicuously spurred corolla base and an essentially white corolla with purple-nerved lobes. It is most similar to and has been found to grow sympatrically with *D. multiflora* (Oersted ex Hanstein) Wiehler at the La Selva Field Station, Sarapiquí, Heredia, Costa Rica, where they were first distinguished in 1979 in the following extract from a “Key to the La Selva *Drymonia*” (B. Hammel, pers. obs.):

- 7. Plants red-brown pubescent; older stems with thin brown epidermis
 *D.* “magenta calyx” [*D. rubripilosa*]
- 7'. Plants glabrous; stems green
 *D.* “little magenta calyx” [*D. multiflora*]

Although the above key would apply to *Drymonia rubripilosa*, it would not completely discriminate *D. multiflora* because a few specimens of *D. multiflora* found in the Talamanca mountain range have reddish flaky epidermis on the stems. A more complete key to separate these sometimes confused species is presented below.

KEY TO TWO *DRYMONIA* SPECIES IN COSTA RICA

- 1a. Stem apices, petioles, pedicels, the distal half of corolla tubes and ovaries sparsely to densely red-pilose; leaf blades 3–13 × (1.2–)1.6–6 cm; pedicels 0.5–1 cm long; calyx lobes 1.6–3 cm long; epidermis of the stems usually reddish brown and flaky; corolla base conspicuously spurred; northern and central Caribbean lowlands in Costa Rica, 50–300 m elevation *D. rubripilosa*
- 1b. Stem apices and petioles strigillose to white-sericeous; pedicels white-sericeous to white-pilose;

corollas glabrous to white-pilose; ovary white-pubescent; leaf blades 1.4–6.7(–11.5) × 0.7–2(–4) cm; pedicels 1–3.5 cm long; calyx lobes to 1.7 cm long; epidermis of the stems green, rarely reddish and flaky; corolla base usually not spurred; Caribbean slope of the Guanacaste, Tilarán, Central and Talamanca mountain ranges in Costa Rica, also in Mexico, Nicaragua, and Panama, (100–)700–1400 m elevation.
 *D. multiflora* (Oersted ex Hanstein) Wiehler

To recognize specimens and individuals of *Drymonia rubripilosa* in the field, it is also important to understand its sister species, *D. multiflora*. The latter seems to have two recognizable forms in Costa Rica. From the 41 specimens of *D. multiflora* examined at INB, 26 share the following characters: chartaceous, elliptic to lanceolate leaf blades to 6.7 cm with weakly impressed secondary veins and strigillose to glabrous surfaces abaxially, calyx lobes puberulent to glabrous, margins toothed, pedicels strigillose, and corollas mostly lacking a spur at the base, glabrous throughout, and to 2.5 cm long. Sixteen of these specimens are from the Talamanca mountain range in Costa Rica, and 10 are from the Tilarán mountain range, where both forms are sympatric. The second form is restricted to the northern cordilleras of Tilarán and Guanacaste in Costa Rica (represented by 15 specimens) and differs from the first in its membranous to somewhat translucent, elliptic-ovate to elliptic-obovate, usually larger leaves to 11.5 cm, with clearly impressed and moderately strigose secondary venation abaxially, calyx lobes sparsely to moderately pilose, calyx margins deeply toothed, pedicels strigillose to sparsely pilose, and corolla with a conspicuous spur at the base, sparsely pilose and longer to 3.1 cm. I believe the differences noted above are not worthy of specific status, but do reflect the population variability in *D. multiflora*.

Another vegetatively similar species to both taxa discussed above is *Drymonia folsomii* L. Skog, which, in Costa Rica, is restricted to Tapantí National Park and therefore is sympatric with *D. multiflora* but not with *D. rubripilosa*. *Drymonia folsomii* and *D. multiflora* are easily distinguished because the first has a subcampanulate corolla with a purple spot inside and white lobes (vs. a ± straight and funnel-shaped corolla with white tube sometimes tinged with yellow, with purple-veined corolla lobes in *D. multiflora*).

These three species (*Drymonia folsomii*, *D. multiflora*, and *D. rubripilosa*) share what seems to be a unique fruiting character for Costa Rican species of the genus. In these species, the bivalved, fleshy capsule opens to expose a fleshy, indehiscent endocarp surrounding the seeds (vs. a bivalved, fleshy capsule opening to expose a mass of funicles and

seeds without any trace of the endocarp). The reason for this could have to do with seed dispersion (probably by birds) in which the protected mass of seeds by the endocarp is consumed or transported as a whole rather than coming apart in smaller pieces.

Paratypes. COSTA RICA. **Alajuela:** San Carlos; 7 km NE de Boca Tapada, Laguna del Lagarto Lodge, *R. Kriebel* 4977 (INB). **Limón:** Matina, Llanura de Santa Clara, Barbilla de Matina, *M. M. Chavarría & A. Solís* 1003 (CR, INB). **Heredia:** Sarapiquí, P. N. Braulio Carrillo, Estación Magsasay, *E. Alcázar* 102 (CR, INB); Sarapiquí, Puerto Viejo, E. B. La Selva, sendero circular cercano, *R. Kriebel et al.* 3483 (INB); Sarapiquí, Puerto Viejo, E. B. La Selva, camino al lindero sur y devolviéndose por el sábalo esquina, *R. Kriebel et al.* 3994 (INB).

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