

## *DRYMONIA DECORA* (GESNERIACEAE), A NEW SPECIES FROM THE FILA COSTEÑA, COSTA RICA

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**ABSTRACT.** Floristic inventory of the privately owned preserve, Refugio de Vida Silvestre Boracayán, along the border between San José and Puntarenas provinces, Costa Rica, resulted in the discovery of a new species, *Drymonia decora* (Gesneriaceae). This species can be differentiated from other similar species in its distinctive pendulous habit and glandularly-pubescent calyx. It is known only from the type locality, warranting further investigation of this poorly botanized region of the Fila Costeña.

**RESUMEN.** Un inventario florístico de la reserva privada Refugio de Vida Silvestre Boracayán, entre las provincias de San José y Puntarenas, Costa Rica, resultó en el descubrimiento de una especie nueva para la ciencia, *Drymonia decora* (Gesneriaceae). Esta especie puede diferenciarse de otras similares por su distintivo hábito péndulo y el cáliz glandular-pubescente. Se conoce solamente de la localidad típica, lo que señala la necesidad de mas investigación en esta región de la Fila Costeña pobremente conocida botánicamente.

**Key words:** Gesneriaceae, *Drymonia*, gesneriad, Refugio de Vida Silvestre Boracayán, Fila Costeña, Costa Rica

### INTRODUCTION

In May of 2003, a floristic inventory team from the Marie Selby Botanical Gardens (MSBG) was dispatched to Costa Rica to survey vascular plant diversity in the then recently established private wildlife reserve, Refugio de Vida Silvestre Boracayán. A charitable trust established by John Bender and now managed by him and his wife, Ann Patton. Boracayán, is situated in a poorly botanized region of the Fila Costeña, western Costa Rica. Covering approximately 5000 acres, the reserve is a heterogeneous, mixed-use area ranging from lowland tropical forest, pastures and farmland, to upland tropical second-growth forest and remnant rainforest and cloud forest habitats.

The floristic inventory team collected and documented approximately 600 specimens from Boracayán, many of which were returned as living plants to MSBG for cultivation and further study. The reserve proved to be particularly diverse in orchids; at least two previously undescribed species, *Polycynis blancoi* G.Gerlach (Gerlach 2004) and *Gongora boracayanensis* R.Jenny, Dalström and W.E.Higgins (Jenny et al. 2008), were discovered during this inventory ef-

fort, as well as a new country record, *Scaphosepalum manningii* Luer (Dalström 2004).

Gesneriads are also diverse in Boracayán and approximately 20 collections were made including specimens of *Columnnea ornata* (Wiehler) L.E.Skog & L.P.Kvist, *Glossoloma tetragonum* Hanst., *Nautilocalyx colombianus* Wiehler, and at least four species of the genus *Drymonia* Mart. including *D. macrantha* (J.D.Sm.) D.N.Gibson, *D. turrialvae* Hanst., *D. uninerva* Wiehler, and one non-flowering live specimen that superficially resembled *D. submarginalis* Gómez-Laurito & Chavarría. Living material of this plant, a long, pendulous, epiphytic herb with conspicuously quadrangular stems and pseudo-distichous phyllotaxy, was successfully returned to MSBG where it was cultivated and eventually brought to flower and fruit. This plant is not of any known species and is here described from field, herbarium and greenhouse observations. Notes on its affinities and distribution follow.

### TAXONOMIC TREATMENT

***Drymonia decora*** J.R.Clark & J.L.Clark, sp. nov. TYPE: Ex hort. Costa Rica—San José: Refugio de Vida Silvestre Boracayán, Fila Costeña, San José-Puntarenas Province border, ca. 10 km E of Dominical. Southern Fila Tinamastes in the region of the Catarata

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de San Luis near Cuesta Yeguas, in cloud forest along ridge, canopy 30 m tall with emergents to 40 m, epiphytes abundant, 9°15.5'N, 83°45'W, 1000 m, 31 May 2003, living plant cultivated at Marie Selby Botanical Garden (accession no. 2003-0412, *J.R. Clark et al.* 478); flowered in cultivation, 21 March 2006, *B.K. Holst* 8878, (Holotype: SEL; Isotypes: US, USJ). FIGURES 1–2.

A *Drymonia peltata* habitu perlongipendolo et foliis non peltatis distincta; *D. submarginali* similis sed calyce trichomatibus glanduliferis instructo differt.

**Plant** epiphytic; stems herbaceous and pendulous, 1–3 m in length, 0–[1- to 3-] branched, each major stem completely pendulous, 0.5–1.0 cm wide, conspicuously quadrangular in cross-section, edges slightly winged, glabrous, green to greenish-brown, nodes prominent, adventitious roots occasionally present along internodes and nodes. **Leaves** opposite, usually pseudo-distichous, often anisophyllous, or those of a pair variably equal or subequal in size, occasionally deciduous along the stem; petioles 0.8–2 cm long, slightly triangular to quadrangular in cross-section, reddish or pink, glabrous; blade oblong-elliptic to elliptic, 11–24 cm long, 1.5–3.5 cm wide, both upper and lower surfaces glabrous, adaxially dark green to slightly reddish-brown, abaxially light green to reddish or pink, abaxial mid-vein prominent and pink or reddish-brown, base oblique to slightly sagittate with lobes rounded and sometimes appearing sub-peltate, margins entire, abruptly revolute, apex acuminate to long apiculate. **Inflorescence** a reduced paired flowered cyme, in leaf axils irregularly along stem, bracts scale-like, <0.5 cm long, <0.2 cm wide; pedicels glandular-pubescent, 1.2–2 cm long; calyx slightly zygomorphic, 1–1.4 cm long, cleft nearly to base, lobes triangular, light green, glandular pubescent externally, less so internally, the dorsal and upper two lateral lobes somewhat inflexed towards the corolla tube, the lower two lobes slightly reflexed, persistent after anthesis, all lobes becoming strongly reflexed except for the dorsal lobe; corolla funnellform, 2.2–2.5 cm long, slightly inflated near throat and constricted near the base, curved downward, 3.8–4.1 cm long, pale lemon-yellow with purplish spots at base, base gibbous, throat canary yellow, sparse glandular-pubescent externally along tube, nearly glabrous on lobes and around throat, glabrous internally, corolla lobe margins denticulate, upper two lobes 0.6–0.8 cm long, slightly reflexed, lateral two lobes 0.6–0.8 [–1] cm long, also reflexed, ventral lobe 1–1.1 cm long, ovate, subequal to slightly longer than the other four lobes; stamens

4, didynamous, slightly columnar near base, adnate to the corolla tube, anthers poricidal, 0.2–0.3 cm long, staminode present; ovary densely setose, style slightly pubescent at base and glabrous near stigma, nectary a single bilobed gland on dorsal surface. **Fruit** a dehiscent, fleshy capsule, valves purple and reflexed at maturity revealing a translucent, gelatinous mass of finicula with embedded seeds.

**Etymology.** The epithet is Latin for “graceful” and is in reference to this species’ characteristic pendulous habit, not commonly seen in other species of *Drymonia*. The name is also meant to pay honor to both Ann Patton, co-manager of Boracayán, and her grandmother, Ann Esworthy. The English name “Ann” is derived from the Hebrew “channah” meaning “grace.” The junior Ann and her husband, John Bender, graciously hosted the field team during their work in this scientifically and ecologically important new reserve. The elder Ann and her husband Walt are long-time supporters of Selby Gardens, having served in various capacities since the Gardens’ inception in the early 1970’s. Ann and Walt Esworthy’s connection formed the original impetus for the floristic inventory project resulting in this discovery.

**Distribution.** Fila Costeña at 1000 m, border between San José and Puntarenas provinces, Costa Rica. Known only from the type locality.

**Comments.** *Drymonia decora* is the most recently described of now 24 species of *Drymonia* recognized from Costa Rica (Kriebel 2006, Kriebel-Haehner 2006). *Drymonia decora* can be easily distinguished from other species of *Drymonia* by its strictly pendulous habit and also in the gland-tipped pubescence of the calyx. These characters readily differentiate *D. decora* from the superficially similar *D. submarginalis* Gómez-Laurito & Chavarría in that the latter is neither pendulous in habit nor is the inflorescence glandularly pubescent. Similarly, *D. decora* is in marked contrast to the vegetatively similar species *D. peltata* (Oliver) H.E. Moore, that has a characteristic upright, branching habit; leaves of *D. decora*, although occasionally sub-peltate, are not fully peltate as is always the case in *D. peltata*.

Phylogenetic analysis of the nuclear ribosomal internal transcribed spacer (ITS) and the chloroplast *psbA-trnH* regions (J.R. Clark and J.L. Clark unpubl. data) suggest a sister relationship of *D. decora* to *D. peltata*. In turn, these two species are nested within a clade with other Central American and northern South American species of *Drymonia* including *D. conchocalyx* Hanst., *D. rhodoloma* Wiehler, *D. chiribogana*

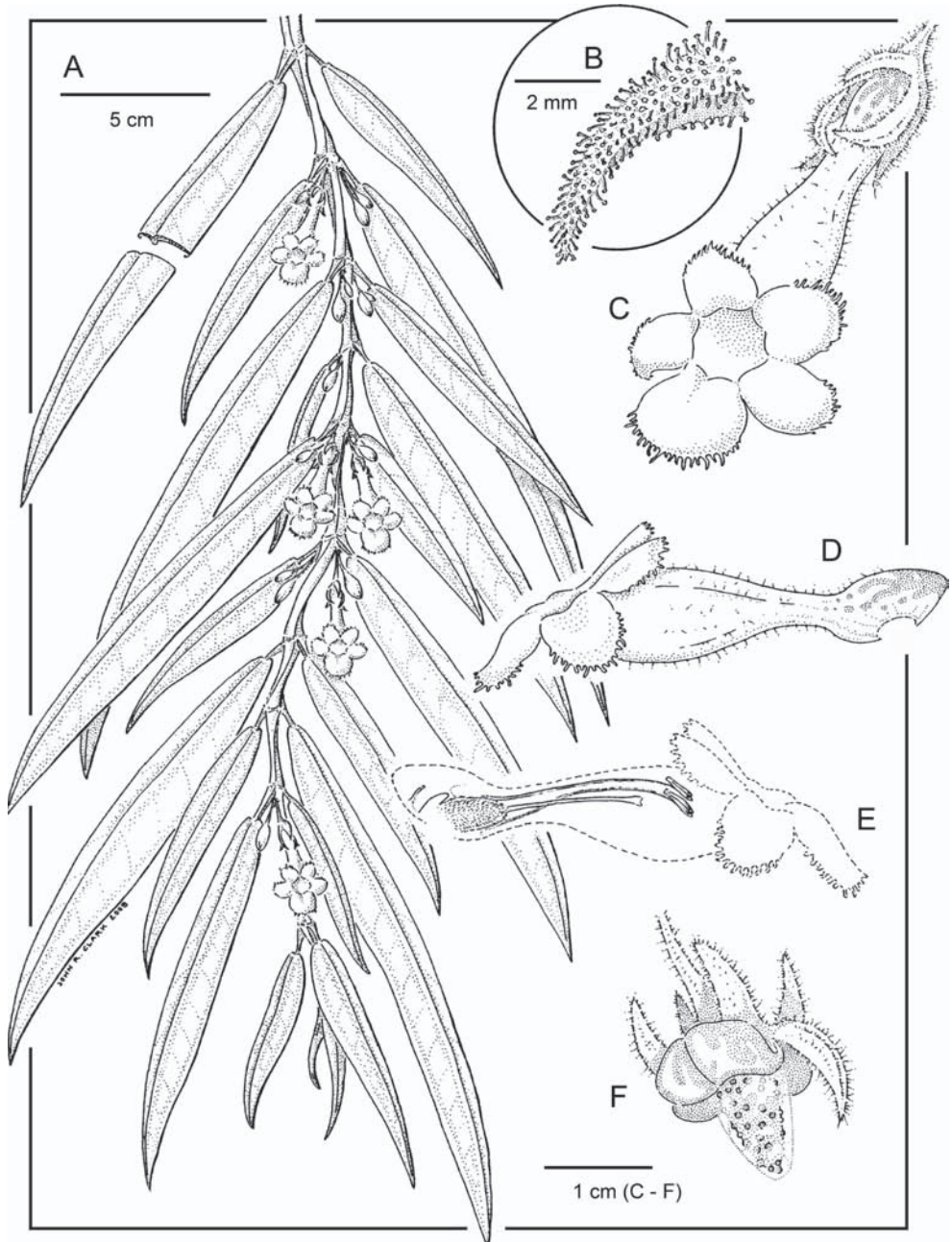


FIGURE 1. *Drymonia decora* J.R. Clark & J.L. Clark sp. **A.** habit. **B.** Detail of calyx lobe illustrating glandular trichomes. **C.** Flower. **D.** Corolla. **E.** Detail of inner floral parts. **F.** Mature fruit.

Wiehler, and *D. ecuadorensis* Wiehler (data not shown). These relationships are tentative, and more conclusive resolution will require additional genic region sampling and analysis.

This unique *Drymonia* is undoubtedly rare; no herbarium collections that we have observed (as

well as those examined by our collaborators; B.K. Holst and L. Skog pers. comm.) appear to be of this newly described species. The scarcity of collected material may be indicative of a narrow distribution for *D. decora* within and around Boracayán, warranting IUCN listing. Further ex-

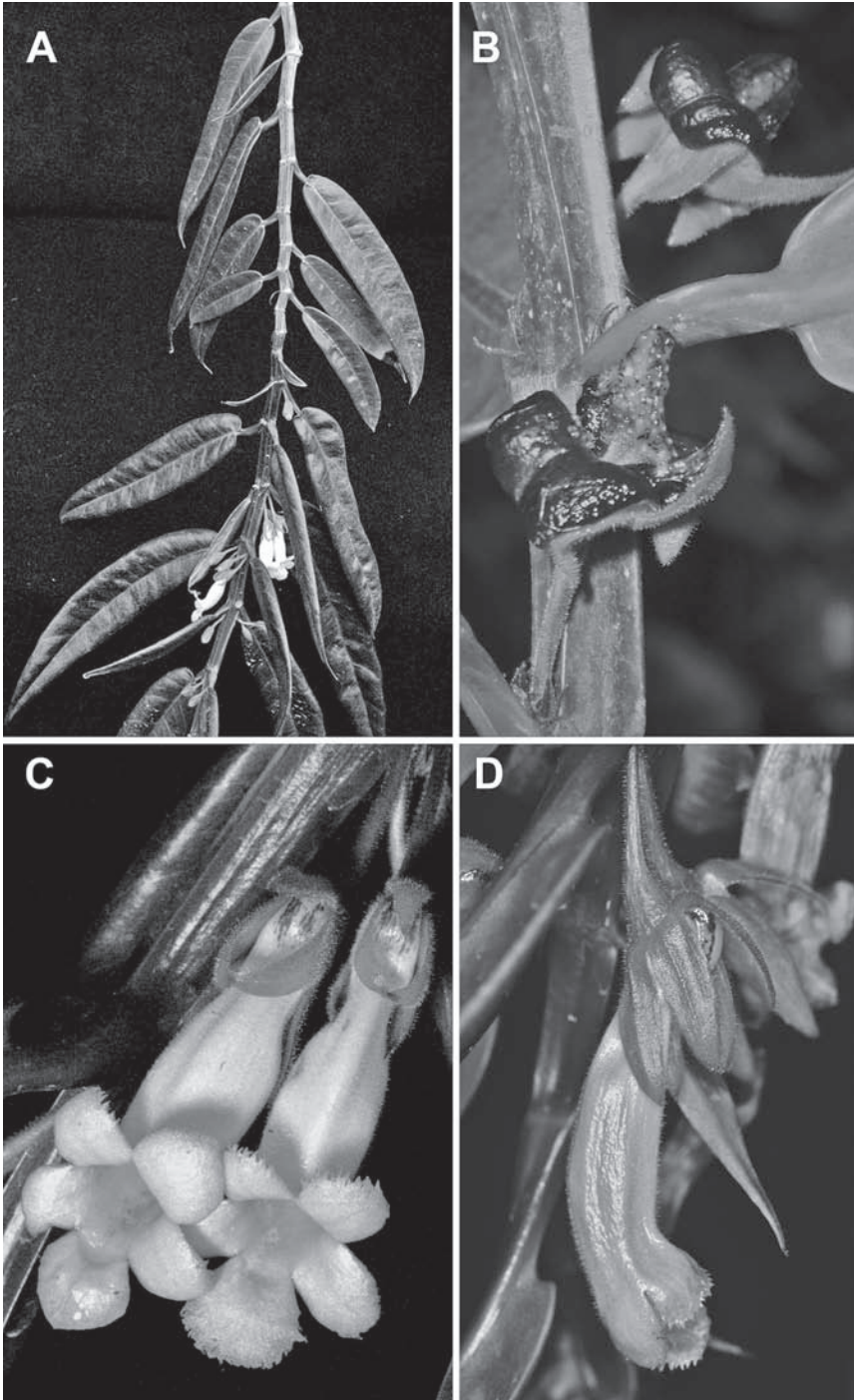


FIGURE 2. *Drymonia decora* J.R. Clark & J.L. Clark. **A.** Habit. **B.** Mature fruit showing reflexed valves. **C.** Dorsal view of mature flowers. **D.** Lateral view of immature flower. Photographs A–C by Bruce K. Holst of MSBG live collection number 2003-0412A; photograph D, *J.L. Clark 8871*.

ploration of the Fila Costeña in the vicinity of Boracayán is needed to better ascertain the distribution and conservation status of this distinctive species new to science.

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