

base of lip (FIGURE 2F). **Column** green, beaked, short, 0.15×0.3 mm. **Anther cap** yellow, tip white, cordate, 0.15×0.3 mm. **Pollinia** two, spherical, connected by a stipe, 0.1×0.1 mm.

DISTRIBUTION: Reported from the Philippines by Mac Rivenbark and illustrated in *The Orchids of the Philippines*.

ETYMOLOGY: Named for Robert Riefer a serious orchid hobbyist that brought this plant to my attention.

Key to *Rhynchostylis*

1. Inflorescence upright ascending, flowers white marked with lilac, tip of spur distinctly bent downwards . . . *R. coelestis*
- 1'. Inflorescence arching or pendent, flowers white marked with pink, red or violet, spur not bent 2
 2. Lip apex distinctly 3-lobed, tip of spur angular, column foot absent 3
 - 2'. Lip apex not 3-lobed, column foot present 4
 3. Flowers winter-spring, the lip apex gradually tapered.
. . . *R. gigantea* subsp. *violacea*
 - 3'. Flowers summer-fall, labellum apex lobulate;
. . . *R. gigantea* subsp. *gigantea*

4. Lip tip straight or downwards, tip of spur rounded *R. retusa*
- 4'. Lip tip upwards and hook-like, tip of spur truncate. *R. rieferii*

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CALATHEA MONSTERA, A NEW SPECIES IN THE ORNATA GROUP OF CALATHEA (MARANTACEAE)

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ABSTRACT. *Calathea monstera* H. Kenn. from Panama and western Colombia is described as new. *Calathea monstera* belongs to the “Ornata group” of *Calathea*. It shares a similar inflorescence and capsule morphology with *C. sanderiana* (Sander) Gentil, but is distinguished by the longer and narrower leaves, the acute to acuminate vs. obtuse apex, the markedly unequal vs. equal-sided leaf base and the non-patterned juvenile foliage.

Key words: Panamá, Colombia

TAXONOMIC TREATMENT

Calathea monstera H. Kenn. sp. nov. TYPE: Panamá—Colón: Río Guanche, ca. 1.5 mi upstream from the bridge, 10–20 m, wet lowland evergreen forest, 4 September 1974, H. Kennedy, R.L. Dressler, P.J.M. Maas & C. Toft 3388 (Holotype: PMA; Isotypes: MEXU, MO, UCR). FIGURE 1.

Haec species a Calathea sanderiana foliis proportione longioribus angustioribusque (ratione longitudinis cum latitudine 2.54–3.28 vs. 1.67–1.88), apice acutis acuminatisve (vs. obtusis), base manifeste inaequalibus (vs. subaequalibus) atque venis tessellatis crebrioribus 20 ad 24 (ad 28) (vs. 16 vel 17) per 5 mm inter venas laterales distinguuntur.

Herb, rhizomatous, caulescent, 1.3–2.25 m, bearing 2–5 leaves, (1) 2–4 basal, 0 or 1 cauline above a 54–107 cm long internode. **Cataphylls** coriaceous, narrowly ovate, apex obtuse, apiculate, purple, minutely hispid, 40–52 cm long. **Stem** dark green, minutely hispid. **Leaf blades** coriaceous, elliptic to ovate-elliptic, length:width ratios of 2.54–3.28:1, apex acute to acuminate, base rounded, unequal, one side up to 1.9 cm lower than other, shortly attenuate, (30.5–) 42–64 (—75.5) × (12–) 17–24 (–29.5) cm in subtending leaves, 58–86 × 19.5–29 in basal leaves; lateral veins 11–15 (–18) per 3 cm, cross veinlets 20–24 (–28) per 5 mm. Leaf blade shiny, dark green, glabrous above, midrib lighter, yellow-green, glabrous except subglabrous at very base; lower surface semi-shiny with a slight metallic cast, medium green, minutely tomentose, trichomes more dense along major veins, trichomes 0.2–0.4 mm, midrib yellow-green, densely minutely tomentose along sides, centrally subglabrous in basal 2/3. **Pulvinus** elliptic in cross-section, olive-green, glabrous throughout or sparsely tomentose

in narrow row above, (3.7–) 4.7–8 (–11) cm long in cauline leaf, 8.7–14.5 cm long in basal leaves. **Petiole** dark green to dark olive-green, slightly hispid, (0–) 6–25.5 (–46.5) cm long in subtending leaf, 54–105 cm long in basal leaves. **Leaf sheath** not auriculate, dark green, dying at the margins in cauline leaves, lighter, olive-green toward apex, minutely appressed tomentose to minutely hispid basally, trichomes stiff, 0.2–0.5 mm long in cauline leaves, hairs denser, to 1 mm long at base in basal leaves, 15–35 cm in cauline leaves, 43–55 cm in others. Node yellow-green, lighter than sheath base. **Inflorescence** terminal, 1 per aerial shoot, borne well above the leaves, lax, broadly ovoid to subcylindric, 4–7 × 4.5–6.5 cm. **Peduncle** olive-green, densely minutely appressed tomentose to subhispid apically, hairs 0.3–0.5 mm long, sparsely so toward base, 43–130 cm long. **Bracts** 4–6, stiff, chartaceous, spirally arranged, remote, spreading, patent to reflexed, narrowly ovate, apex acute, 3.5–5 × 1.2–1.5 cm. Abaxial bract surface pale olive-green, cream-colored at very base or tinged purple, densely appressed tomentose, trichomes 0.8–1.2 mm long; each bract subtending potentially to 34 or more flower pairs. **Bicarinate prophyll** membranous, in age dilacerating into fibers, ovate, apex obtuse to 90°, purple or translucent pale straw-colored, tinged purple apically, sides abaxially pilose, trichomes to 0.5 mm long, center glabrous, 1.8–2.1 × 1.1–1.2 cm, carina to carina ca. 0.55 cm. **Secondary bracts** membranous, ovate, apex obtuse, translucent pale straw-colored, pilose along margins and at apex, ca. 2.5–2.6 × 1.5 cm. **Bracteole** 1 per flower pair, linear, needle-like, clavicate, yellow, glabrous except for a tuft of trichomes at junction with pedicel, 1.9–2 cm long. **Sepals** firm, narrowly elliptic, apex acute, shiny dark purple, glabrous except at very base, at junction with ovary, densely minutely pilose, 25–27 × 5–8 mm.



FIGURE 1. *Calathea monstera* sp. nov. A. Habit. B. Detail of leaf base. C. Inflorescence with flower and capsules. D. Flower on upper leaf surface. E. Seeds and capsules on upper leaf surface.

Corolla tube tinged pale red-purple, sparsely pilose, trichomes to 1.2 mm long, ca. 37 mm long; lobes unequal, elliptic, apex obtuse, ca. 90°, dark purple, basal 3/4 densely appressed pilose, apex subglabrous, ca. 16 × 5.5 mm. *Outer staminode* broadly obovate, apex emarginate, yellow with purple lines, apical margin purple, 14–15 × 8–9 mm. *Callose staminode* broadly obovate, apically petaloid, bilobed, ca. 16 mm long. *Stamen* with narrow lateral petaloid appendage; anther 3.5 mm long. *Style and stigma* yellow. *Ovary* surface with minute papillae, yellow, papillae tinged purple, glabrous except dense tuft of trichomes at apex at junction with sepals, ca. 3 × 3 mm. *Capsule* muriculate, globose to very broadly

obovoid, apex slightly concave, tinged deep purple, especially the tips of the excrescences, ca. 1.3 × 1.4, sepals persistent. *Seeds* blue, ellipsoid, outer surface rounded, faintly rugose, 2 inner faces flat, ca. 9 × 7 × 5 mm; aril smooth, white, oily.

Distribution and ecology. *Calathea monstera* is known from central Panama to NW Colombia from near sea-level to 950 m in moist to wet forest habitats. It is found in the shaded understory of the forest, often near streams.

Comments. *Calathea monstera* belongs to the informally treated "Ornata Group" (Kennedy

1986) which was more fully characterized in Flora of Ecuador (Kennedy 1988). The Ornata group of *Calathea* encompasses *C. ornata* (Lemaire) Körn. and related species such as *C. elliptica* (Roscoe) K. Schum., *C. majestica* (Linden) H. Kenn., and *C. sanderiana* (Sander) Gentil which, like *C. ornata*, also have patterned juvenile foliage and are commonly cultivated. There are only two other Panamanian species in the Ornata Group: *C. gymnocarpa* H. Kenn. and *C. inocephala* (Kuntze) H. Kenn.

Calathea monstera is most closely related to *C. sanderiana* having a similar inflorescence of few, ovate bracts, purple sepals, purple and yellow staminodes and muricate capsules with persistent sepals. It differs from *C. sanderiana* in the proportionately longer and narrower leaf, length:width ratios of 2.54–3.28:1 vs. 1.67–1.88:1, the acute to acuminate vs. obtuse apex, the markedly unequal vs. nearly equal-sided leaf base and more closely spaced cross-veinlets, 20–24 (–28) per 5 mm vs. 16–17. *Calathea elliptica* and *C. bantae* H. Kenn. also have few ovate bracts. However, in these two latter species the bracts are green and flowers cream-colored rather than purple. *Calathea monstera* is also distinguished, late in the flowering season, by the highly elongated cyme axis bearing the remnants of 20–30 or more flower pairs. This is some of the highest, if not the highest, number of flower pairs per bract recorded in Marantaceae.

Etymology. The specific epithet, *monstera*, is in reference to its being referred to as “the monster” by Robert Dressler when we first found it and carried some whole plants back to be pressed.

Paratypes: PANAMA—Prov. Coclé: El Copé, sendero desde la casa de los guardaparques hasta la quebrada, 08°40'N, 80°35'W, 7 July 1996, J. Aranda, B. Araúz & C. Galdames 2867 (SCZ); Pacific slope, sawmill above El Copé, E slope of ridge W of sawmill, 2800 ft., 9 March 1979, B. Hammel 6296 (MO); above La Pinatada on the road to Coclecito, forest along roadside, primary forest on steep hillside, 1600–1700 ft, 23 April 1980, W.J. Kress 80-1169 (DUKE); El Copé, below sawmill, 2800 ft, 23 April 1980, W.J. Kress 80-1183 (MO); Prov. Colón: near lower Río Guanache, 22 November 1975, R.L. Dressler 5219 (PMA): Río Guanache, between Maria Chiquita and Portobelo, 1–5 mi up the river valley from

highway, in forest, 24 February 1971, R.B. Foster & S. Vogel 2194 (DUKE); Río Iguanita, ca. 1.5 mi. upstream from the bridge on the road to Portobelo, mature evergreen wet forest, ca. 10 m, 10 August 1971, H. Kennedy, R.L. Dressler & H. Wiehler 1103 (IMB, MEXU, MO); Río Iguanita, about 1 mi upstream, lowland wet forest, ca. 10 m, 27 March 1975, H. Kennedy & R.L. Dressler 3470 (MO); Prov. Darién: Río Masargandi, tributary of Sucubti, Masargandi, 200 m, 3 February 1977, R.L. Dressler 5596 (PMA). **COLOMBIA**—Dept. Chocó: Mpio. de San José del Palmar, hoyo del Río Torito (afluente del Río Hábita), declive occidental, Finca “Los Guadales,” en bosque, 630–830 m, 5 March 1980, E. Forero et al. 6703 (MO); Mpio. de San José del Palmar, hoyo del Río Torito (afluente del Río Hábita), declive occidental, Finca “Los Guadales,” en bosque y orilla del río, 630–730 m, 7 March 1980, E. Forero et al. 6843 (MO); Dept. Nariño: road from El Espino to Tumaco, 30 km W of Ricaurte, 10 km W of Ataquer, El Mirador, Finca Santa Lucia, in forest N of Río Nambí, 950 m, 01°17'N, 78°07'W, 9 December 1988, B. Hammel & A. Navarrea 17182 (MO); Mpio. de Tumaco, Resguardo Indígena El Hojal, cerca del Río La Turbia, 245 m, 01°18'N, 78°30'W, 18 May 1996, B.R. Ramírez et al. 9834 (NY).

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