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## New Species of *Palicourea* and *Psychotria* (Rubiaceae: Psychotrieae) from Northwestern Colombia

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**ABSTRACT.** The new species *Palicourea orquidea*, *Palicourea quadrilateralis*, *Palicourea sopkinii*, *Palicourea zarucchii*, *Psychotria ovatistipula*, *Psychotria sanchezii*, and *Psychotria vesciculifera* are described and illustrated. These are all shrubs or small trees found in wet forests at 520–2500 m in the Pacific slope and Cordilleras Occidental and Central of Antioquia and Chocó Departments, Colombia.

**RESUMEN.** Se describen e ilustran las especies nuevas *Palicourea orquidea*, *Palicourea quadrilateralis*, *Palicourea sopkinii*, *Palicourea zarucchii*, *Psychotria ovatistipula*, *Psychotria sanchezii* y *Psychotria vesciculifera*. Todas son arbustos o arbolitos que crecen en bosques húmedos de 520–2500 m en la vertiente del Pacífico y las Cordilleras Occidental y Central de los Departamentos de Antioquia y el Chocó, Colombia.

Among recent collections from northwestern Colombia, the following undescribed species of the related genera *Palicourea* Aublet and *Psychotria* L. were represented. Descriptions of these two genera and keys to distinguish them have been presented by Burger and Taylor (1993).

***Palicourea orquidea*** C. M. Taylor, sp. nov.  
TYPE: Colombia. Antioquia: municipio de Urrao, Parque Nacional Natural "Las Orquídeas," camino de Calles hacia Venados arriba, sector Bellavista, 1685 m, ca. 6°30'N, 76°20'W, 7 July 1991, A. Cogollo, C. Builes & O. Alvarez 5036 (holotype, MO-4281229; isotype, JAUM not seen). Figure 1A, B.

Species a congeneribus habitu satis succulento, foliis brevipetiolatis satis grandibus, stipulis satis grandibus profunde bilobis, inflorescentia congesta spiciformi bracteis bene evolutis praedita distinguenda.

Shrubs flowering at 2 m tall, to 4 m tall, rather succulent, sparsely branched; stems quadrate, stout, glabrous. Leaves paired; blades oblanceolate, 32.5–50 cm long, 12.5–18.5 cm wide, at apex obtuse to rounded and often with a deltoid tip ca. 5 mm long, at base tapering and acute, drying pa-

pyraceous to chartaceous, adaxially glabrous, abaxially moderately to densely puberulous throughout, the costa often purple on both surfaces; secondary veins 18–30 pairs, extending to unite in a marginal or submarginal looping collecting vein; petioles 2–6 cm long, glabrous; stipules sparsely puberulous to glabrescent, interpetiolar and also united for ca. 5 mm intrapetiolarly, 5.5–10 cm long, bilobed for  $\frac{2}{3}$ – $\frac{3}{4}$  of their length, the lobes ligulate to somewhat elliptic, often overlapping laterally, obtuse to somewhat acute, entire. Inflorescences erect, with peduncles 1.5–7 cm long; panicles spiciform to subcapitate, surrounded at base by stipules of the uppermost nodes, densely congested, 8.5–15 cm long, 5–8.5 cm diam., without developed branches, with flowers pedicellate in bracteate cymules of 5–15; bracts sparsely to moderately puberulous to pilosulous, acute, ciliolate, purple to blue-purple, those subtending cymules ovate to lanceolate, 3.5–4 × 2–3.5 cm, those subtending flowers oblanceolate to narrowly triangular or lanceolate, 2.5–5 × 4–12 mm; pedicels 3–20 mm long; flowers with hypanthium cylindrical, ca. 1.5 mm long, glabrous; calyx limb 2.5–3 mm long, glabrous, divided to base, lobes lanceolate to triangular, acute; corolla funnelform, cream to pale yellow sometimes flushed with rose in throat, shortly exerted from the surrounding bracts; disk 1–1.5 mm high. Infructescences similar to inflorescences; fruits ellipsoid, ca. 8 × 4.5 mm, glabrous; pyrenes with 3–4 low longitudinal ridges.

**Distribution and habitat.** Known only from the general region of the type collection, in wet forest at 890–1685 m.

This new species is distinguished by its rather succulent habit, relatively large, shortly petiolate leaves, relatively large, deeply bilobed stipules, and congested spiciform inflorescences with well-developed bracts. The corollas have been photographed, but unfortunately are not preserved well enough in the specimens examined to permit a complete description. This species is classified in *Palicourea* on the basis of its similarity in both vegetative and reproductive features, to the extent these are known, to other species of this genus

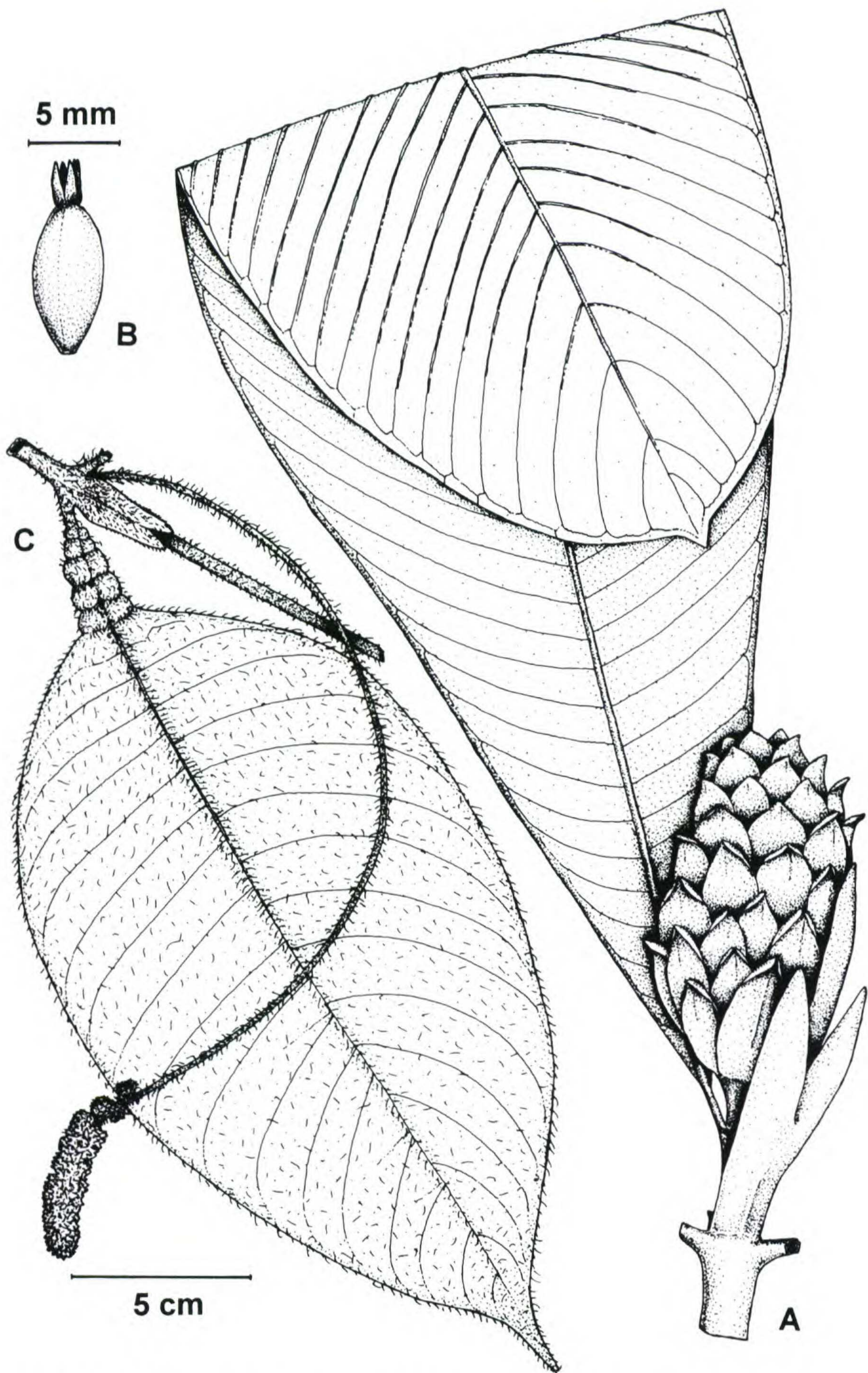


Figure 1. A, B, *Palicourea orquidea* C. M. Taylor. —A. Flowering branch. —B. Fruit. —C. *Psychotria vesciculifera* C. M. Taylor, flowering branch. A and C to 5-cm scale. A based on Cogollo *et al.* 2923; B based on Cogollo *et al.* 5036; C based on Forero *et al.* 3247.

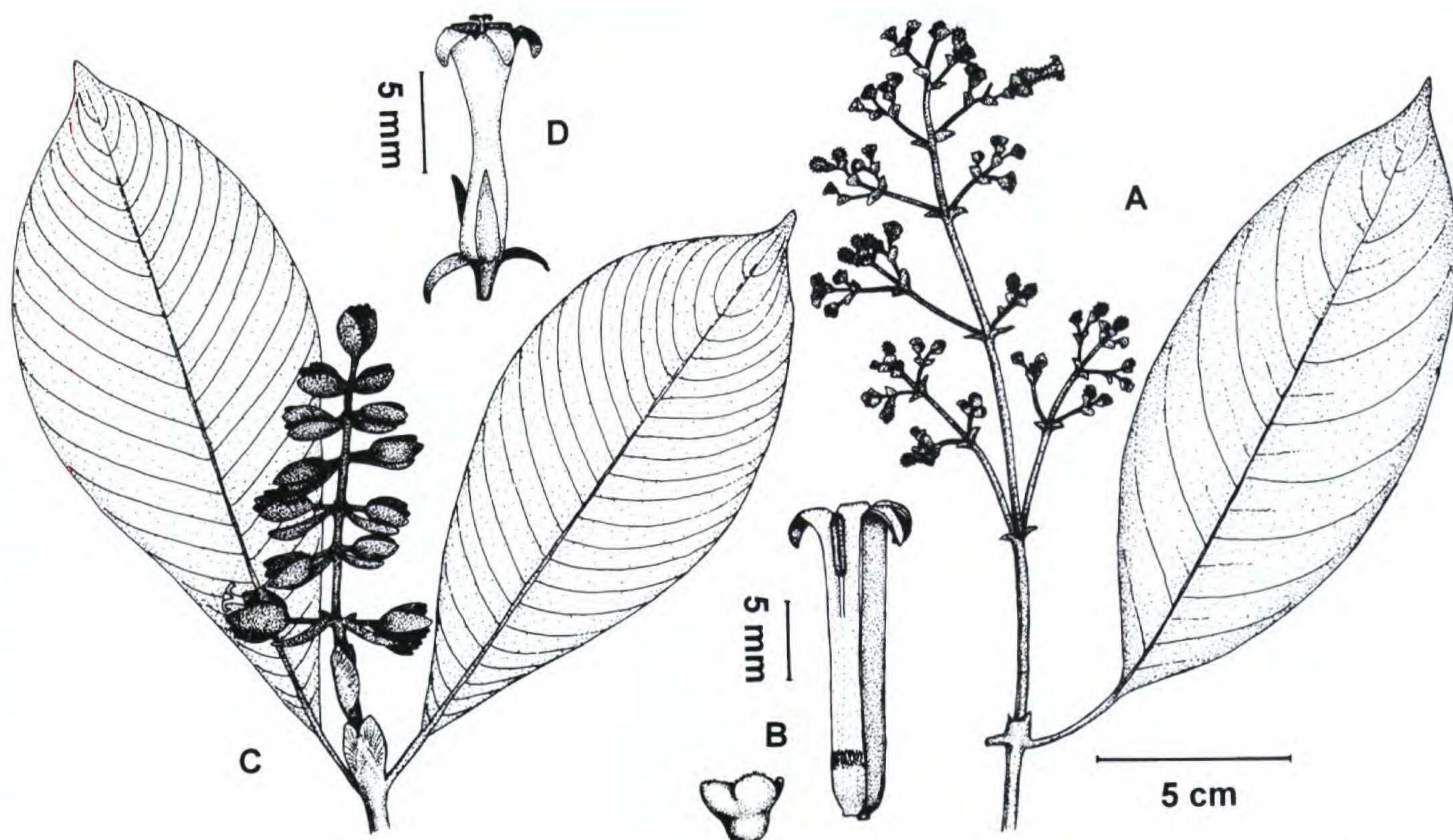


Figure 2. A, B, *Palicourea quadrilateralis* C. M. Taylor. —A. Flowering branch. —B. Calyx and corolla, partially dissected. C, D, *Palicourea sopkini* C. M. Taylor. —C. Flowering branch. —D. Flower. A and C to 5-cm scale. A based on *Juncosa & Escobar 733*; B based on *Cogollo & Brand 349*; C, D based on *Silverstone-Sopkin et al. 1663*.

found in this region. However, the presence of the corolla features that distinguish this genus must be verified in this species to confirm its generic placement. *Palicourea orquidea* is similar to *P. acanthacea* C. M. Taylor; the latter species can be separated by its longer petioles, elliptic leaves, shorter inflorescences, and usually red-purple corollas.

The specific epithet refers to the park in which this species was found, as well as the distinctive purple color of the inflorescence bracts.

*Paratypes.* COLOMBIA. **Antioquia:** Parque Nacional Natural "Las Orquídeas," Sector Venados, 9°33'N, 76°19'W, *Cogollo et al. 2923* (JAUM); camino de Venados arriba hacia Carauta, margen derecha del río Venados, 6°35'N, 76°17'W, *Cogollo et al. 4037* (JAUM).

***Palicourea quadrilateralis* C. M. Taylor, sp. nov.**

**TYPE:** Colombia. Antioquia: municipio de San Luis, autopista Medellín–Bogotá, 2 kms de Río Claro, hacia Río Samaná, 13 Jan. 1983, A. *Cogollo & J. Brand 349* (holotype, MO-3016990; isotype, JAUM not seen). Figure 2A, B.

Species a congeneribus inflorescentia rubropurpurea bracteis floralibus satis latis et bene evolutis praedita, lobulis limbi calycini bene evoluti satis latis, corolla ex azurea purpurea externe saepe dense pubescenti, pyrenis in sectione transversali acute triangularibus fructum valde quadratum formantibus distinguenda.

Shrubs flowering at 1.5 m tall, to 8(–15) m tall; stems glabrous, often strongly quadrate with rather

sharp angles. *Leaves* paired; *blades* elliptic, 9–20.5 cm long, 3–10.5 cm wide, at apex acute to somewhat acuminate with tips 5–10 mm long, at base acute to cuneate, papyraceous, adaxially glabrous, abaxially glabrous to occasionally pilosulous on blade and usually pilose at least in two lines along midrib; secondary veins 6–11 pairs, generally extending to or nearly to margins, with 1 somewhat well developed and often also 1–2(–4) weak intersecondary veins present between pairs of secondary veins; *petioles* 1–2 cm long, glabrous; *stipules* glabrous, fused around the stem into a continuous sheath 2.5–4 mm long, truncate, entire, lobes narrowly triangular to deltoid, 1.5–2.5 mm long, entire, acute. *Inflorescences* erect, with peduncles 4–9 cm long; panicles pyramidal, 5.5–13.5 cm long and 5–12 cm wide excluding corollas, generally with 3–4 pairs of branches, the basalmost often subtended by reduced leaves and the inflorescence then subject to interpretation as "tripartite," with flowers mixed sessile and pedicellate in rather congested cymules of 2–7, bracts 2–4 mm long, entire to ciliate, those subtending primary branches 3–4 mm long, lanceolate to ligulate, obtuse, those subtending flowers ovate to orbicular, 2–3 mm long, often rather cucullate, obtuse to rounded, pedicels 0.5–4.5 mm long; peduncles, axis, branches, bracts, and pedicels glabrous to pilosulous, magenta to purple; *flowers* with hypanthium glabrous, turbinate to

hemispherical, 1–1.5 mm long; *calyx* limb glabrous, 1.5–2.5 mm long, lobed for ca.  $\frac{1}{2}$ , lobes ovate to suborbicular, obtuse to rounded, entire to ciliolate; *corollas* tubular, purple to blue, somewhat swollen at base, generally straight there and in tube, externally glabrous to usually densely villous with slender multicellular trichomes ca. 1 mm long, internally glabrous except for a densely villous ring 1.5–2 mm wide at ca. 3 mm above base, tubes 11–13 mm long, ca. 2–2.5 mm diam. near middle, lobes narrowly triangular, 2–2.5 mm long, acute, at apex somewhat thickened adaxially; *anthers* in probable short-styled form ca. 3 mm long, positioned at top of corolla tube, included; *stigmas* not seen; disk annular, ca. 1 mm high. *Infructescences* similar to inflorescences; *fruits* subglobose, 6–7 mm diam., glabrous, drying quadrate in cross section due to the unusual pyrene shape; *pyrenes* with 3–4 sharp longitudinal ridges, the central one usually well developed and the others low or hardly developed, the entire pyrene thus strongly triangular in cross section.

*Distribution and habitat.* Antioquia, Colombia, in wet forest at 470–1500 m on slopes of the northern end of the Cordillera Central of the Andes; apparently frequent locally.

This species is distinguished by its magenta to purple inflorescences with the flowers sessile to shortly pedicellate, rather well-developed and broad floral bracts, well-developed calyx limb with rounded lobes, usually externally densely villous purple to blue corollas, and distinctive sharply triangular pyrenes forming strongly quadrate fruits when dry. It is similar to *Palicourea dorantha* Wernham, which can be distinguished by its well-developed pedicels and subglobose to ellipsoid fruits; to *P. toroi* Standley, which can be distinguished by its stipules 1–3 cm long with lanceolate acute lobes; and to *P. thermydri* Kirkbride, with pyrenes similar but larger, 8–9 mm long, and corollas with the tubes 15–16 mm long and ca. 5 mm in diameter.

*Paratypes.* COLOMBIA. **Antioquia:** municipio de San Luis, vía Medellín–Bogotá, quebrada La Tebaida, 6°08'N, 75°10'W, *Callejas et al.* 4018 (HUA, MO); municipio de San Luis, carretera hacia Aquitania, a 8 km de la autopista Medellín–Bogotá, 5°53'N, 74°50'W, *Cogollo et al.* 3788 (JAUM, MO); municipio de San Carlos, corregimiento Alto de Samaná, vereda Miraflores, *Fonnegra et al.* 3013 (HUA, MO), 3138 (HUA, MO); municipio de San Francisco, corregimiento Aquitania, Finca “La Ilusión,” *Fonnegra et al.* 4100 (HUA, MO), 4149 (HUA, MO); municipio de San Luis, vereda San Pablo, quebrada Carbonera, Finca Aquelarre, 3°N, 75°06'W, *Fonnegra & Rengifo* 4860 (HUA, MO); municipio de Nariño, vereda Puente Linda, margen izquierda del río Samaná, 5°34'N,

75°03'W, *Fonnegra et al.* 5124 (HUA, MO); municipio de San Luis, autopista Medellín–Bogotá, sector Río Samaná–Río Claro, *Hernández et al.* 274 (MO); municipio de San Luis, autopista Medellín–Bogotá, 2 km antes de La Josefina, *Hoyos & Hernández* 353 (MO); municipio de San Luis, autopista Medellín–Bogotá, vereda La Josefina, camino a Palmira, *Hoyos & Hernández* 451 (MO); municipio de San Luis, autopista Medellín–Bogotá, vereda La Josefina, camino del caño de Mariola hacia Santa Bárbara, *Hoyos & Hernández* 644 (MO); municipio de San Luis, autopista Medellín–Bogotá, vereda La Josefina, cañón de la quebrada La Salada, *Hoyos & Hernández* 874 (MO); municipio de San Luis, autopista Medellín–Bogotá, vereda La Josefina, camino hacia Filo Estrecho y Santa Elena, *Hoyos & Hernández* 1009 (MO); municipio de San Luis, 8 km E of bridge over Río Caldera on main highway from Medellín, *Juncosa & Escobar* 733 (MO); municipio de San Carlos, along creeks leading into the ISA hydroelectric dam reservoir, 6°00'N, 75°00'W, *McPherson* 13311 (MO); municipio de San Luis, quebrada “La Cristalina,” 6°N, 74°45'W, *Ramírez et al.* 80 (MO), *Ramírez & Cárdenas* 418 (JAUM, MO), 580 (JAUM, MO), 1803 (JAUM, MO).

***Palicourea sopkini*** C. M. Taylor, sp. nov. TYPE: Colombia. Chocó: municipio de San José del Palmar, Cerro del Torrá, vertiente nororiente, arriba del helipuerto, 9 Jan. 1984, *P. A. Silverstone-Sopkin, N. Paz, A. Duque & H. Bayona* 1663 (holotype, MO-3230892; isotypes, CUVC, MO-3230900). Figure 2C, D.

Species a congeneribus foliis plerumque oblanceolatis nervis secundariis satis numerosis instructis, lobulis stipularum grandium imbricatis, inflorescentia pyramidalis ex rosea rubroviolacea bracteis bene evolutis praedita, lobulis calycinis satis longis, corolla infundibuliformi, fructu anguste ellipsoideo distinguenda.

Shrubs flowering at 1.5 m tall, to 4 m tall; stems quadrate, rather succulent, moderately to rather densely puberulous. *Leaves* paired; *blades* elliptic or usually oblanceolate to somewhat obovate, 7.5–23 cm long, 3–8.5 cm wide, at apex acuminate with tips 2–20 mm long, at base cuneate to usually acute, chartaceous, adaxially glabrous except densely pilosulous to hirtellous on costa, abaxially puberulous to usually glabrous on lamina and puberulous to usually densely so on costa and secondary veins; secondary veins 15–25 pairs, extending to unite with margins, without intersecondary veins; *petioles* 8–25 mm long, moderately to densely puberulous; *stipules* moderately to densely puberulous, interpetiolar, elliptic to somewhat ovate, 12–23 mm long, bilobed for  $\frac{1}{3}$ – $\frac{1}{2}$ , the lobes ligulate to elliptic, overlapping laterally, obtuse to rounded, entire to usually erose. *Inflorescences* erect, with peduncles 2–4 cm long; panicles pyramidal, 6–10 cm long, 4–6 cm wide at base, with 3–6 pairs of spreading to somewhat reflexed branches, with flowers sessile in glomerules of 3–7, these 1–4 per branch; bracts glabrous, ciliolate, rose to deep pink

or red-violet, those subtending branches ligulate to elliptic or lanceolate, 15–20 × 4–5 mm, those subtending glomerules and flowers lanceolate to ovate or elliptic, 10–20 × 5–10 mm; peduncle and axis glabrous to puberulous; *flowers* with hypanthium glabrous, ca. 2 mm long, cylindrical to narrowly turbinate; *calyx* limb glabrous, divided to base, lobes triangular to narrowly lanceolate, rose to pink, 4–5 mm long, acute, entire to minutely ciliate; *corolla* funnelform, white, a little swollen and gibbous at base, generally straight at base and in tube, externally and internally glabrous except for a pilosulous to pilose ring ca. 2 mm wide near middle of tube, tube 11–12 mm long, ca. 1.5 mm diam. near middle, lobes triangular, ca. 4 mm long, acute; *anthers* in probable long-styled form ca. 2.5 mm long, positioned in upper ¼ of tube, included, subsessile; *stigma* in probable long-styled form ca. 0.5 mm long, shortly exerted; *disk* ca. 1 mm high. *Infructescences* with branches becoming reflexed, bracts becoming blue to metallic dark blue; *fruits* narrowly ellipsoid, 4–5.5 × 3.5 mm, blue; *pyrenes* with 4–5 low rather sharp longitudinal ridges.

*Distribution and habitat.* Known only from the general region of the type collection, in primary cloud forest at 1900–2500 m.

This species is distinguished by its generally oblanceolate leaves with relatively numerous secondary veins and the minor venation not evident on the abaxial surface, large stipules with laterally overlapping lobes, pyramidal rose to red-violet inflorescences with well-developed bracts, relatively long calyx lobes, funnelform corollas, and narrowly ellipsoid fruits. It is similar to several other species of *Palicourea* from this same region, in particular *P. ochnoides* Dwyer and *P. killipii* Standley, both with pedicellate flowers, and *P. orquidea*, with larger leaves and stipules and the inflorescences not evidently branched. It is also similar to *Psychotria aviculoides* Kirkbride, which can be distinguished by its leaves with 12–14 pairs of secondary veins, capitate to cylindrical inflorescences, corollas not swollen at base and with the internal pubescence distributed throughout the distal ⅔ of the tube, and flattened fruits; and to *Psychotria humboldtiana* (Chamisso) Mueller Argoviensis of Venezuela, which can be distinguished by its leaves elliptic to usually lanceolate, stipules 3–8 mm long, and inflorescences with 3 glomerules of flowers in an umbelliform arrangement.

The specific epithet honors Philip A. Silverstone-Sopkin, professor in the biology department of the Universidad del Valle in Cali, discoverer of this species, and a careful and dedicated student of the

flora of Valle and southern Chocó Departments, Colombia.

*Paratypes.* COLOMBIA. **Chocó:** municipio de San José del Palmar, Cerro del Torrá, vertientes nororiental y oriental, arriba del helipuerto, *Silverstone-Sopkin et al.* 1602 (CUVC, MO), 4263 (CUVC, MO), 4960 (CUVC, MO).

***Palicourea zarucchii*** C. M. Taylor, sp. nov.

TYPE: Colombia. Antioquia: municipio de Medellín, cerro del Padre Amaya, 9.4 km from Medellín–Santa Fe de Antioquia highway on road to summit, 6°16'N, 75°41'W, 30 Mar. 1987, *J. Zarucchi & B. Echeverry* 5128 (holotype, MO-4990808; isotype, HUA not seen). Figure 3A, B.

Species a congeneribus stipulis interpetiolaribus bilobis satis bene evolutis, calyce satis longo, corolla satis brevi basi inflata parum curvata, fructu anguste ellipsoideo distinguenda.

Shrubs or small trees flowering at 2 m tall, to 6 m tall; stems quadrate, glabrous or occasionally sparsely to densely pilosulous, perhaps somewhat succulent. *Leaves* paired; *blades* elliptic, 4–10.5 × 1.6–4.2 cm, at apex acute to slightly acuminate, at base acute to cuneate, chartaceous, adaxially glabrous or occasionally puberulous along costa, abaxially glabrous or sometimes puberulous to pilosulous along costa and less commonly also along secondary veins; secondary veins 7–12 pairs, generally extending to margins, with 1–2 weak intersecondary veins usually present between pairs of secondary veins; *petioles* glabrous or occasionally pilosulous, 1–12 mm long; *stipules* glabrous or occasionally sparsely to densely pilosulous, interpetiolar, a little inflated, 5–12 mm long, ovate, bilobed, lobes deltoid to triangular, 0.5–5 mm long, acute to obtuse, entire to ciliate. *Inflorescences* erect, with peduncles 1.5–4 cm long; panicles pyramidal, 4–9 × 3.5–6.5 cm, with 3–7 pairs of branches, these sometimes closely set and appearing subverticillate, with flowers mixed sessile and pedicellate in cymules of 5–11; bracts glabrous, entire, those subtending branches narrowly triangular to narrowly elliptic, 7–14 mm long, acute to obtuse, sometimes shortly lobed at base, those subtending flowers elliptic, obtuse to rounded, 1–1.5 mm long; pedicels to 3 mm long; peduncle, axis, branches, and pedicels moderately to densely puberulous to pilosulous, pale green to yellow; *flowers* distylous, with hypanthium turbinate, glabrous to sparsely pilosulous, ca. 1 mm long; *calyx* limb glabrous, pale green, 2–3 mm long, lobed nearly to base, lobes generally narrowly ligulate, equal to somewhat unequal, acute to obtuse; *corolla* funnelform, white or

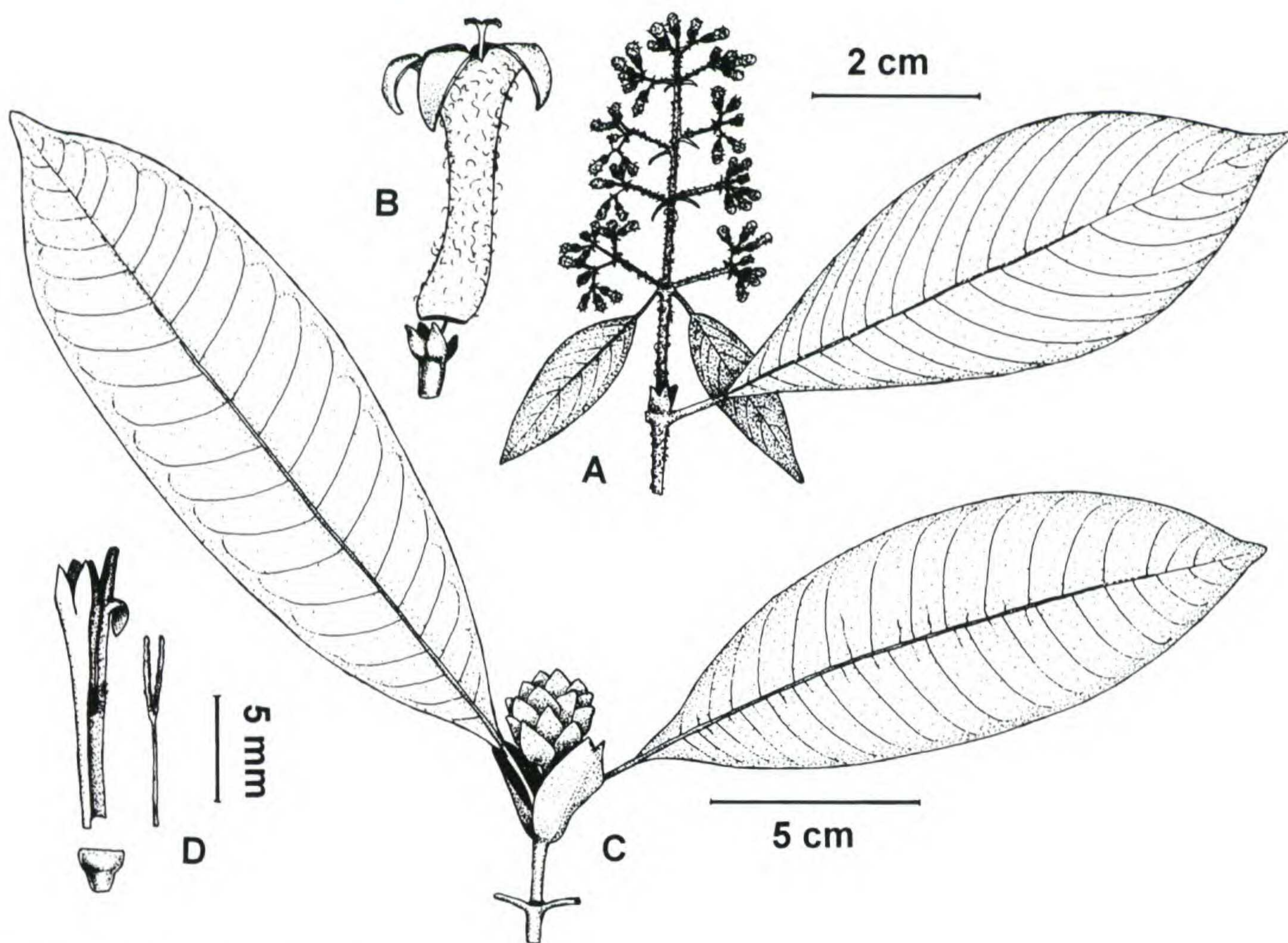


Figure 3. A, B, *Palicourea zarucchii* C. M. Taylor. —A. Flowering branch. —B. Flower, partially dissected. C, D, *Psychotria ovatistipula* C. M. Taylor. —C. Flowering branch. —D. Flower, partially dissected. B and D to 5-mm scale. A, B based on *McPherson et al.* 13115; C based on *Ramírez & Cárdenas* 592; D based on *Hernández et al.* 248.

usually cream to pale yellow, at base swollen and a little gibbous, a little bent here and curved in tube, externally moderately to densely hirsutulous with trichomes ca. 0.5 mm long, internally glabrous except for a densely villous ring ca. 2 mm wide at ca. 3 mm above the base, tube 5.5–6 mm long, ca. 1.5 mm diam. near middle, lobes 5(6), narrowly triangular to ligulate, 3–3.5 mm long, acute at apex, reflexed at anthesis; *anthers* in long-styled form subsessile, partially exerted, ca. 2 mm long, in short-styled form completely exerted on slender filaments ca. 4.5 mm long, ca. 2 mm long; *stigmas* in long-styled form ca. 1 mm long, exerted, in short-styled form ca. 2 mm long, positioned near middle of corolla tube; disk ca. 1 mm long, annular. *Infructescences* becoming flushed with purple; *fruits* narrowly ellipsoid to lanceoloid, ca. 6 × 3.5 mm; *pyrenes* with 4–5 narrow rounded longitudinal ridges.

*Distribution and habitat.* Antioquia and Chocó Departments, Colombia, in subparamo vegetation at 2630–3050 m in the northern end of the Cordilleras Occidental and Central of the Andes.

This species is distinguished by its relatively

well-developed, interpetiolar, bilobed stipules, relatively long calyces, relatively short corollas that are swollen and a little bent at the base, and narrowly elliptic fruits. It is similar to *Palicourea pauciflora* Standley, which can be separated by its stipules 3–5 mm long, calyx lobes 4–6 mm long, and longer pale green corollas; and to *P. garciae* Standley, which can be separated by its stipules 2–5 mm long, rounded-corymbiform inflorescences, and calyx limb 0.8–1.2 mm long. The label data on one specimen, *Silverstone-Sopkin* 4436, note that the flowers and inflorescences were flushed with rose and purple, respectively. Such colors are occasionally found in several species of *Psychotria* and *Palicourea* with normally pale inflorescences and flowers, including *Palicourea garciae* (pers. obs.), usually on individuals growing exposed to full sun.

This species is named in honor of James Zarucchi, who has made many of the collections of this species.

*Paratypes.* COLOMBIA. **Antioquia:** municipio de Bello, corregimiento de San Félix, Cerro San Félix to Boquerón, en la vía al Cerro, 6°20'N, 75°30'W, *Callejas et al.* 11546 (HUA, MO); Medellín, Mount El Boquete [sic].

Alto de los Baldíos, *Cuatrecasas et al.* 24256 (MEDEL); Belmira, *Espinal* 5 (MEDEL); Alto de Boquerón, Medellín, *Espinal* 1185 (MEDEL); municipio de Belmira, Finca El Páramo, *Fonnegra et al.* 5385 (HUA, MO), 5373 (HUA, MO); municipio de Urrao, on trail leading to Páramo de Frontino, near finca el Quince, 6°30'N, 76°10'W, *McPherson et al.* 13115 (HUA, MO); municipio de Abriaquí, Parque Nacional Natural "Las Orquídeas," *Ramírez et al.* 3830 (MEDEL); Cerro del Padre Amaya, a orillas de la carretera de la repetidora de T. V., Medellín, *Rivera et al.* 7055 (MEDEL); 10 km al E de Sonsón, *Scolnik et al.* 10An266 (MEDEL); Cerro los Baldíos, *Solano et al.* 121 (MEDEL); Yarumal, *Tomás* 1516 (MEDEL); municipio de Yarumal, N of Yarumal on road to Cerro Marconi, 6°59'N, 75°24'W, *Zarucchi & Cárdenas* 4317 (MO); municipio de Sonsón, km 12 of road Sonsón-Nariño, 5°42'N, 75°15'W, *Zarucchi & Bedoya* 4451 (HUA, MO); 25 km from Nariño, near Km 151 post, *Zarucchi et al.* 5244 (HUA, MO); municipio de Medellín, Cerro del Padre Amaya, 7.5 km from Medellín-Santa Fe de Antioquia highway on road to summit, 6°18'N, 75°41'W, *Zarucchi & Madrigal* 4788 (HUA, MO), 11 km from road, *Zarucchi & Madrigal* 4844 (HUA, MO), 10 km from road, *Zarucchi & Madrigal* 5315 (HUA, MO); municipio de Bello, vereda a San Félix, 7.6 km from Medellín-San Pedro road, on road to communication towers, *Zarucchi & Echeverri* 6335 (HUA, MO). **Chocó:** municipio San José de Palmar, Cerro del Torrá, *Silverstone-Sopkin et al.* 4436 (CUVC, MO).

***Psychotria ovatistipula*** C. M. Taylor, sp. nov.

**TYPE:** Colombia. Antioquia: municipio de San Luis, autopista Medellín-Bogotá, sector Río Samaná-Río Claro, 19 Mar. 1982, *J. J. Hernández, S. E. Hoyos & L. Albert de Escobar* 248 (holotype, MO-4571898; isotype, HUA not seen). Figure 3C, D.

Species a congeneribus stipulis ovatis satis grandibus, nervis secundariis foliorum grandium adaxialiter prominentibus et abaxialiter planis vel incrassatis, inflorescentia subcapitata subsessili vel brevipedunculata bracteis bene evolutis praedita distinguenda.

Shrubs flowering at 3 m tall, to 4 m tall, glabrous throughout. *Leaf blades* elliptic to elliptic-oblong, 12.5–26.5 cm long, 3.5–7.5 cm wide, at apex acute to slightly acuminate, at base acute to cuneate, papery, apparently pale abaxially; secondary veins 16–25 pairs, with 1–2 intersecondary veins usually present between pairs of secondary veins, adaxially the costa prominent and sometimes whitened, secondary veins and sometimes the intersecondary veins prominulous, and minor venation plane, abaxially the costa prominent and secondary veins and minor venation plane; *petioles* 1.5–6.5 cm long; *stipules* interpetiolar, membranaceous to papery, caducous, often white or yellow or those subtending inflorescences flushed with purple, ovate in outline, sometimes costate, 20–30 × 10–22 mm, at base rounded to subauriculate, at apex shortly to distinctly bilobed, lobes 3–10 mm long, acute, entire to somewhat erose. *Inflorescences* ter-

minal, perhaps deflexed, with peduncles 15–20 mm long; flower portion subcapitate, ellipsoid to hemispherical, 20–25 × 25–35 mm including bracts, with flowers sessile in dense bracteate glomerules, bracts lanceolate to elliptic, yellow to green or flushed with purple, obtuse to rounded, entire to somewhat erose, those subtending inflorescences and glomerules 12–14 × 7–8 mm, those subtending flowers 7–8 × 5 mm; *calyx* limb glabrous, cupuliform, ca. 1 mm long, truncate; *corolla* tubular, yellow, straight at base and in tube, externally glabrous, internally glabrous except pilosulous in a ring ca. 1–1.5 mm wide at stamen attachment and on filament bases, tube ca. 1 cm long, ca. 1 mm diam. near middle, lobes ligulate, 2.5–3 × 1 mm, acute; *anthers* in probable short-styled form ca. 3 mm long, exerted; *style* in probable short-styled form ca. 5 mm long, stigmas 2, linear, ca. 4 mm long; disk ca. 0.5 mm long, annular. *Fruit* not seen.

*Distribution and habitat.* In wet forest, including disturbed primary forest, at 520–900 m in northwestern Colombia.

This species is distinguished by its relatively large stipules, large leaves with the secondary veins raised adaxially and plane to thickened abaxially, and subsessile to shortly pedunculate, subcapitate inflorescences with well-developed bracts. It is similar to *Psychotria capitata* Ruiz & Pavón, a widespread variable species that can be separated by its pedunculate branched inflorescences and its narrow stipules. *Psychotria ovatistipula* is also similar in aspect to *P. humboldtiana* (Chamisso) Mueller Argoviensis of Venezuela, which can be distinguished by its inflorescences with 3–5 separate glomerules in an umbelliform arrangement. *Psychotria ovatistipula* belongs to *Psychotria* subg. *Heteropsychotria*, and probably is closely related to *P. capitata*.

*Psychotria ovatistipula* is known only from the local area in which the type was collected, where it is said on the label data from one collection (*Hernández & Hoyos* 371) to be rare. The fruits are described by collectors as bright green becoming white, although no fruits are represented on the specimens examined.

*Paratypes.* COLOMBIA. **Antioquia:** municipio de San Carlos, corregimiento de Alto de Samaná, vereda Miraflores, quebrada La Miranda, *Fonnegra et al.* 2996 (HUA, MO); municipio de San Francisco, corregimiento de Aquitania, Alto de Venado (Tierra Linda), *Fonnegra et al.* 4033 (HUA, MO); municipio de San Francisco, corregimiento de Aquitania, río Venado, *Fonnegra et al.* 4240 (HUA, MO); municipio de San Luis, autopista Medellín-Bogotá, sector río Samaná-río Claro, *Hernández & Hoyos* 371 (HUA, MO); municipio de San Luis, quebrada La

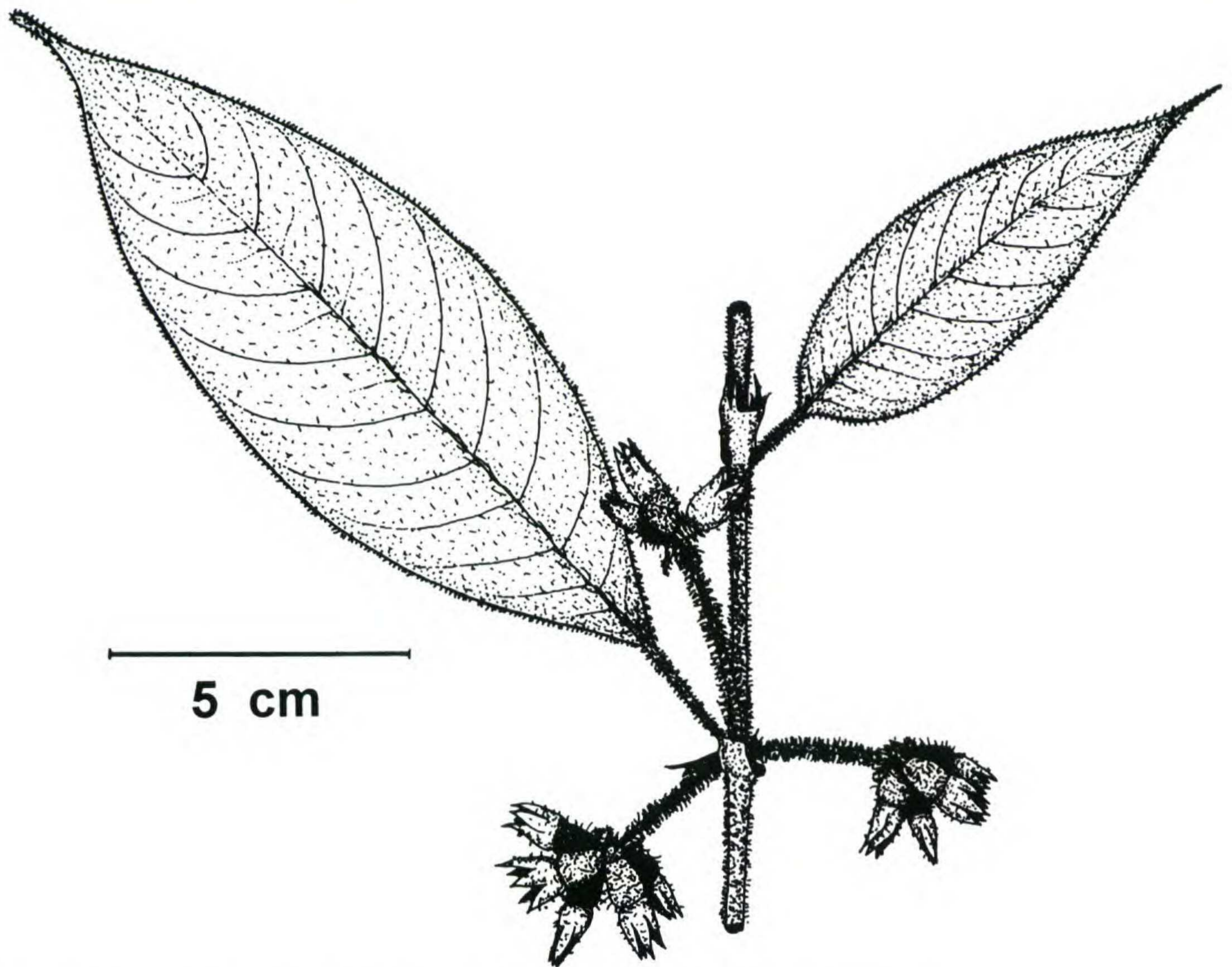


Figure 4. *Psychotria sanchezii* C. M. Taylor, flowering branch; based on *Sánchez et al.* 1360.

Cristalina, 6°N, 74°45'W, *Ramírez & Cárdenas* 520 (JAUM, MO), 592 (JAUM, MO).

***Psychotria sanchezii*** C. M. Taylor, sp. nov. TYPE: Colombia. Antioquia: municipio de Frontino, corregimiento Nutibara, cuenca alta del río Cuevas, 17 Mar. 1984, *D. Sánchez, C. Orrego, S. Sylva, G. Martínez & D. Restrepo* 98 (holotype, MEDEL-28117; isotype, MO-4990809). Figure 4.

Species a congeneribus pubescentia pilosa, stipularum vaginis truncatis et lobulis fimbriatis vel erosis, inflorescentiis fasciculatis flores sessiles in glomerulis gerentibus, limbo calycino urceolato lobulato 11–19 mm longo, tubo corollino gracili ca. 20 mm longo, fructo obovoideo distinguenda.

Shrubs flowering at 2 m tall, to 4 m tall; stems quadrate, becoming terete with age, densely hirsute to pilose with trichomes 0.5–1 mm long. *Leaf blades* elliptic to elliptic-ob lanceolate, 9–17 cm long, 3–6 cm wide, at apex acuminate with slender tips 1–1.5 cm long, at base cuneate, papyraceous to chartaceous, moderately to densely pilose on both surfaces, usually more densely so on costa and secondary veins on both surfaces; secondary veins 8–

15 pairs, with 1–2(3) intersecondary veins usually present between pairs of secondary veins; *petioles* densely spreading-pilose, 2–3.5 cm long; *stipules* persisting with the leaves, sometimes becoming fragmented and dry with age, membranaceous, moderately to densely pilose to pilosulous, sheath 7–10 mm long, truncate, with two lobes on each interpetiolar portion, these 2–10 mm long, acute, erose to fimbriate or deeply divided with up to 2–6 projections. *Inflorescences* terminal, frequently becoming overtopped by growth from both subtending axils, fasciculate, with peduncles 2–3, 1.8–3.8 cm long, densely spreading-pilose; bracts pilose, ligulate to oblanceolate or lanceolate, acuminate to fimbriate, 5–9 mm long; *flowers* sessile in glomerules of 3–8; hypanthium ca. 2 mm long, densely spreading-hirsute with trichomes 1–1.5 mm long; *calyx* limb moderately to densely hirsutulous to pilose, green to yellowish green or flushed with blue, abaxially and adaxially moderately to densely hirsutulous or pilosulous, urceolate, somewhat inflated, 11–19 mm long, lobed for  $\frac{2}{3}$ – $\frac{3}{4}$ , lobes triangular to lanceolate, acute to acuminate; *corolla* tubular,



white, straight at base and in tube, externally glabrous in basal  $\frac{1}{4}$ , distally moderately to densely spreading-pilose or -hirsute with trichomes 0.5–1 mm long, internally glabrous in basal  $\frac{1}{3}$ , tube ca. 2 cm long, ca. 1.5 mm diam. near middle, lobes ligulate, ca. 4 mm long, acute, reflexed at anthesis; *anthers* ca. 4 mm long, sessile, positioned in lower  $\frac{1}{4}$  of tube; *stigma* lobes ca. 2 mm long, positioned ca.  $\frac{2}{3}$  of length of tube above base; disk 0.6 mm long, annular. *Infructescences* with bracts becoming scarious and reflexed; *fruits* obovoid, spreading-pilose to -pilosulous, ca.  $7 \times 6$  mm, with calyx persistent, becoming blue to purple; *pyrenes* 2–3, with 3–5 rather sharp longitudinal ridges.

*Distribution and Habitat.* In wet forest at 1750–2090 m, northwestern Colombia.

This species is distinguished by its pilose to hirsute pubescence on most parts, characteristic unusual stipule morphology, unusual fasciculate inflorescences with the flowers sessile in glomerules, well-developed urceolate calyx limb, relatively long slender corolla, and obovoid fruits. It can be confused with *Palicourea standleyana* C. M. Taylor, which is known from the same region, and which can be separated by its calyx limb 3–4.5 mm long and yellow corollas that are glabrous throughout except for a densely pilose ring internally near the base.

The erose to rather fimbriate stipule lobes are similar to those found in some species of *Rudgea*, and sometimes used to characterize that genus. However, the overall stipule morphology of *Psychotria sanchezii* shows the continuous truncate sheath that is characteristic of *Psychotria* subg. *Heteropsychotria*, and the stipule lobes are fimbriate to erose but not at all glandular, as is characteristic of most species of *Rudgea*. Such erose or fimbriate stipule lobes are found in other species of *Psychotria* subg. *Heteropsychotria*, including *P. stenostachya* Standley and *P. brevicollis* Mueller Argoviensis, and this new species seems best classified in this subgenus. The fruits of *P. sanchezii* have two or sometimes three developed pyrenes, and the label notes of one collection, *Sánchez 454*, describe the ovary as “plurilocular.” Several other species of *Psychotria* subg. *Heteropsychotria* characteristically have more than two pyrenes per fruit, including *P. racemosa* (Aublet) Raeuschel and *P. stenostachya*.

The relatively low position of the anthers and stigma in relation to the corolla tube seen in this species is unusual among neotropical *Psychotria* (and *Palicourea*) species. This arrangement could be interpreted as a long-styled form, but typically long-styled flowers in *Psychotria* (and *Palicourea*)

species have the anthers positioned near or even above the middle of the corolla tube and the stigmas exserted.

This species is named in honor of Dário Sánchez, curator of the MEDEL herbarium and collector of its type specimen.

Two additional specimens from Chocó Department, Colombia, may be referable here. These are *Forero et al. 1362* (municipio de San José del Palmar, Portachuelo, Hacienda Barro Blanco, COL, MO) and *Forero et al. 3218* (municipio Nóvita, vereda Llanadas, ladera norte del Cerro Torrá, COL, MO). These collections were both made at lower elevations (1350 and 1000–1150 m, respectively) than the other collections of *Psychotria sanchezii*, and both differ from this new species as it is circumscribed here in having smaller leaves with shorter petioles and stipules and fewer secondary veins, apparently shorter calyces, and inflorescences with apparently one subsessile to very shortly pedunculate glomerule. Unfortunately neither specimen has adequate reproductive characters for study. Another specimen from a higher elevation in the same region, *Ramos et al. 1472* (municipio de San José del Palmar, Cerro del Torrá, 1800–1900 m), is very similar to *P. sanchezii* but also inadequate for study of reproductive characters.

*Paratypes.* COLOMBIA. **Antioquia:** Alto de Cuevas, 10 km W of Blanquita, 12 km W of Nutibara, *Gentry et al. 76078* (MO); municipio de Frontino, corregimiento de Nutibara, cuenca alta del río Cuevas, finca de Tulio Alvarez, *Sánchez et al. 454* (MEDEL), *1360* (MEDEL); municipio de Frontino, km 17 of road Nutibara–Murrí, 6°45' N, 76°24' W, *Zarucchi et al. 5730* (HUA, MO), *7063* (HUA, MO).

***Psychotria vesciculifera* C. M. Taylor, sp. nov.**

**TYPE:** Colombia. Chocó: municipio de Nóvita, vereda Llanadas, ladera norte del Cerro Torrá, al oeste del río Surama, Alto del Oso, 22 Feb. 1977, *E. Forero, A. Gentry, A. Sugden & D. Daly 3247* (holotype, MO-2594320; isotype, COL not seen). Figure 1C.

Haec species a congeneris foliis brevipetiolatis basi laminae contracta bullataque ut videtur domatium myrmecophilum formante, stipulis satis longis, pubescentia hirsuta ex trichomatibus satis longibus omnino constante ac inflorescentia pendula spiciformi pedunculo insolenter longo insidente distinguenda.

Shrubs ca. 1 m tall; stems quadrate, moderately spreading-hirsute with trichomes 2.5–5 mm long, becoming glabrescent with age. *Leaf blades* elliptic to somewhat ovate, 21–23.5 cm long, 11–12.5 cm wide, at apex acuminate with tips 1.5–2 cm long, at base the blade rounded immediately distal to a contracted, strongly bullate portion 3–3.5 cm long

and 1 cm wide, membranaceous, adaxially sparsely pilose with scattered trichomes 2.5–4 mm long, these often somewhat denser on costa and secondary veins, abaxially paler, sparsely to moderately pilose on the costa and secondary veins, and sparsely pilosulous to glabrous on the lamina, margins ciliate; secondary veins 15–16 pairs, without intersecondary veins; *petioles* 5–10 mm long, moderately to densely pilose; *stipules* interpetiolar, persisting with the leaves, moderately to rather densely pilose, ligulate to lanceolate in outline, somewhat costate, 25–35 mm long, bilobed for ca.  $\frac{1}{4}$ – $\frac{1}{3}$ , lobes acute to acuminate, ciliate. *Inflorescences* pseudoaxillary, pendulous; peduncles slender, ca. 20 cm long, moderately to densely hirsute with trichomes 3–4 mm long; flowering portion spiciform to subcapitate, narrowly cylindrical, ca. 6 cm long, ca. 1.5 cm diam., axis densely pilose as on peduncle, flowers sessile in sessile glomerules of 3–15, these remote at base of inflorescence becoming densely congested at apex; bracts ligulate, 3–4 mm long, glabrous, ciliolate; *calyx* limb densely hirsute externally with trichomes ca. 1 mm long, internally glabrous, ca. 1 mm long, divided to base, lobes narrowly triangular, acute; *corollas* not seen; disk ca. 0.5 mm high, annular, glabrous. *Fruit* not seen.

*Distribution and habitat.* Known only from the type collection, in wet forest at 1000–1150 m.

This species is distinguished by its shortly petiolate leaves with the base of the lamina contracted and bullate, forming what are apparently ant domatia, relatively long stipules, hirsute pubescence with relatively long trichomes throughout, and pendulous spiciform inflorescences borne on well-developed peduncles. The bullate leaf bases contain dead ants in the abaxial cavities. The specific epithet refers to these structures. Foliar ant domatia

similar to these are also found in *Hoffmannia vesciculifera* Dwyer of Panama and Costa Rica. This is apparently the first report of such domatia in neotropical *Psychotria*. The corollas and fruits have not been seen, but are described in the label data of the type collection as white and violet, respectively.

This new species is similar to *Psychotria pilosa* Ruiz & Pavón (in its broad sense) and the related species *P. sanctae-rosae* Standley (if indeed that is distinct) in general vegetative and inflorescence aspect; both of these latter species can be distinguished by their inflorescences with well-developed branches. *Psychotria vesciculifera* is also similar to *P. gonzalagunoides* Kirkbride, which can be distinguished by its appressed trichomes less than 1 mm long on all parts of the plant. All three of these other species lack bullate foliar domatia.

Based on its persistent stipules, reportedly violet fruits, and green drying color, *Psychotria vesciculifera* belongs to subgenus *Heteropsychotria* Steyermark. The pseudoaxillary inflorescences of both *P. vesciculifera* and *P. gonzalagunoides*, which also belongs here, are unusual in this group.

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