
New Species and a New Name in *Palicourea* (Rubiaceae: Psychotrieae) from Northwestern South America

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ABSTRACT. The new species *Palicourea awa*, *P. clerodendroides*, *P. cogolloi*, *P. eburnea*, *P. garcioides*, and *P. glandulifera* are described and illustrated, and the variety *P. justicioides* var. *macrocalyx* M. C. G. Kirkbride is recognized as a species, *P. kirkbrideae*. These are all shrubs or small trees found in wet forests at 900–3040 m in Colombia and northwestern Ecuador.

RESUMEN. Las especies nuevas *Palicourea awa*, *P. clerodendroides*, *P. cogolloi*, *P. eburnea*, *P. garcioides* y *P. glandulifera* se describen e ilustran, y la variedad *P. justicioides* var. *macrocalyx* M. C. G. Kirkbride se trata como una especie, *P. kirkbrideae*. Todas estas especies son arbustos o árboles pequeños de bosque húmedo a 900–3040 m en Colombia y el noroeste de Ecuador.

Among recent collections from Colombia and northwestern Ecuador, the following undescribed species of *Palicourea* Aublet were represented. The characteristics, circumscription, and infrageneric classification of this genus have been presented previously (Taylor, 1997); the classification of each of these new species according to this system is noted at the end of each description. In brief, *Palicourea* is distinguished within the Rubiaceae by its persistent stipules that are united around the stems into a continuous sheath and bilobed in the interpetiolar portion; generally colored inflorescences with the flowers usually pedicellate; corollas that are usually brightly colored, usually five-lobed, and have well-developed tubes that are somewhat swollen at the base and glabrous internally except for a dense ring of pubescence situated just above this basal swelling; and drupaceous fruits with usually two pyrenes. This neotropical genus includes about 200 species found from sea level to high-montane regions. The species are typically distylous and apparently pollinated by hummingbirds. *Palicourea* is closely related to *Psychotria* subg. *Heteropsychotria* Aublet; *Psychotria* subg. *Heteropsychotria* is distinguished from *Palicourea* by its corollas that are not swollen at the base and internally are variously pubescent or glabrous but lack a defined ring of trichomes in the lower portion.

Palicourea awa C. M. Taylor, sp. nov. TYPE: Colombia. Nariño: municipio de Ricaurte, Resguardo Indígena Gualcalá, Santa Fe, camino al Río Gualcalá, 01°18'N, 77°54'W, 1100–1200 m, 18 Dec. 1995, B. R. Ramírez P. & M. S. González 9164 (holotype, PSO; isotype, MO-4911397). Figure 1A, B.

Haec species a *Palicourea standleyana* C. M. Taylor stipularum vaginis truncatis ac lobulis angustis notatis, foliorum nerviis secundariis multioribus atque inflorescentiis corollisque purpureis violaceisve distinguitur.

Shrubs and small trees flowering at 0.5 m tall, to 4 m tall; stems quadrate, often becoming channeled with age, densely hirsutulous. *Leaves* paired; blades elliptic, 13–36 × 6.5–21 cm, at apex acute to acuminate with tips to 20 mm long, at base cuneate to obtuse and usually attenuate along the petiole, papyraceous, adaxially glabrous except densely hirsutulous along costa and often also on secondary veins, abaxially hirtellous, to densely so on costa and secondary veins; secondary veins 31 to 42 pairs, spreading, uniting in a well-marked, generally straight, submarginal vein 1–2 mm from margins, without or rarely with 1 weak intersecondary vein present between pairs of secondary veins, adaxially costa prominulous to plane and remaining venation plane, abaxially costa prominulous to prominent, secondary veins prominulous, and reticulated minor venation plane to thickened; margins distinctly cartilaginous; *petioles* 2.5–12.5 cm long, densely hirtellous; *stipules* hirtellous often becoming glabrescent, persistent, united around stem into a continuous truncate sheath 4–8 mm long, with angles thickened and extending to base of lobes, lobes narrowly triangular, 6–7 mm long, acute, entire to ciliolate. *Inflorescences* terminal, erect to perhaps deflexed, with panicles sessile and often appearing “tripartite,” pyramidal to rounded-corymbiform, 6.5–18 × 5.5–14 cm excluding corollas, with 4 to 5 pairs of developed secondary axes, the basalmost usually strongly reflexed, with flowers pedicellate and sessile in congested to clearly dichasial cymules of 3 to 7; bracts entire to ciliolate, acute, those subtending secondary axes ligulate to lanceolate, 7–10 mm long, those subtending pedi-

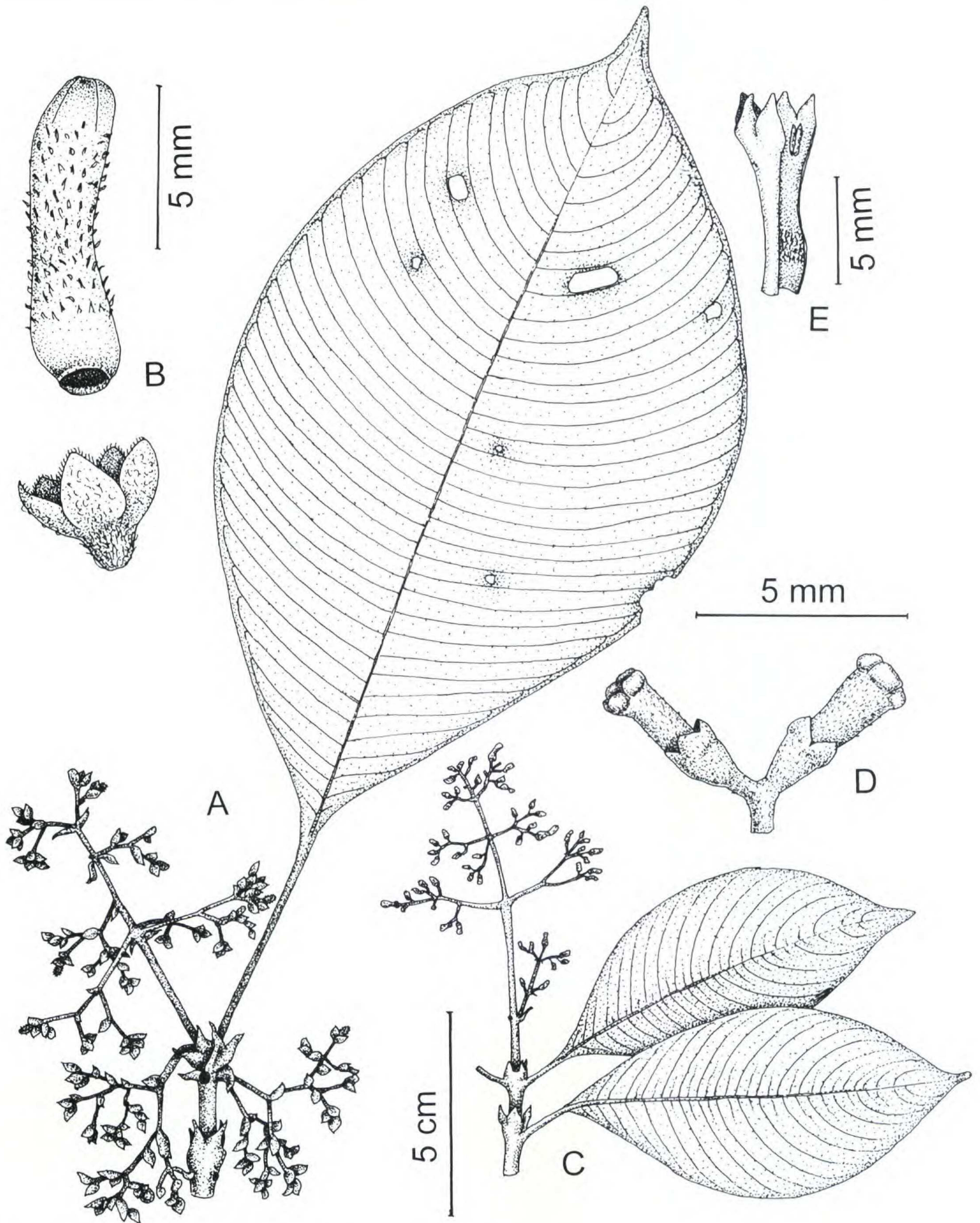


Figure 1. A, B. *Palicourea awa* C. M. Taylor. —A. Flowering branch, with inflorescence after anthesis; based on Hoover 2735. —B. Flower bud, partially dissected; based on Ramírez & González 9164. C–E. *Palicourea glandulifera* C. M. Taylor. —C. Flowering branch with inflorescence; based on Andersson 2120. —D. Cymule bearing flower buds with well-developed glandular regions on the abaxial surface of each corolla lobe. —E. Corolla at anthesis, partially dissected. D, E, based on Gentry et al. 60375. A, C to 5-cm scale.

cels ovate to elliptic, 4–6 mm long, pedicels to 6 mm long; peduncle, axes, bracts, and pedicels pilosulous to hirtellous, purple; *flowers* with hypanthium turbinate, ca. 1 mm long, hirsute; *calyx* limb hirtellous, 3–5 mm long, divided nearly to base, lobes deltoid to ovate, acute to obtuse, ciliolate, with lateral margins often overlapping; *corolla* in bud tubular-funnelform, purple to violet, a little swollen at base, straight at base and in tube, externally densely pubescent with stout trichomes to 1 mm long, internally glabrous except for a pilosulous ring ca. 1.5 mm wide situated just above basal swelling, tube ca. 8 mm long, lobes triangular, ca. 4 mm long, acute, not much thickened adaxially, in bud rounded, with sinuses not saccate at base; mature *anthers* and *stigma* not observed; disk ca. 1 mm high, annular. *Infructescences* similar to inflorescences; *fruits* ellipsoid, ca. 6.5 × 5.5 mm, hirtellous, purple-black to black; pyrenes 2, with one rather sharp, central, longitudinal ridge and 1 to 2 weak, rounded, longitudinal ridges on each side of this. [Subg. *Montane*, Sect. *Montanae*, Ser. 4, Subser. f]

Distribution, habitat, and phenology. In wet forest at 900–1450 m in northwestern Ecuador and adjacent southwestern Colombia; collected in flower bud in November and December, in fruit in January.

This species is distinguished by its hirtellous pubescence on all vegetative parts; leaves with relatively numerous secondary veins that unite into a well-marked submarginal vein; stipules united around the stem into a continuous, well-developed sheath; subsessile purple inflorescences with relatively well developed bracts and the basalmost secondary axes strongly reflexed; calyx limbs well developed with broad lobes; and corollas that are externally densely pubescent with stout multicellular trichomes. In general aspect it is similar to *Palicourea standleyana* C. M. Taylor, which can be distinguished by its secondary leaf veins 17 to 21 pairs, shallowly lobed to emarginate stipules, green inflorescences, and yellow corollas. The specific epithet honors the Awá people: this species is known only from their territory, which spans the Ecuador–Colombia border.

Paratypes. ECUADOR. **Carchi:** Maldonado, parroquia Tobar Donoso, Reserva Etnica Awá, Sabalera, 00°55'N, 78°32'W, *Aulestia et al.* 718 (MO, QCNE); trail from Pailon to Gualpi Chico area of Awá Reservation, 1.5 km past Rio Blanco, 00°51'N, 78°16'W, *Hoover et al.* 2425 (MO); trail along Awá border, to Mongon Creek, to W of encampment and ascending Creek Gualpi Chico area, 00°58'N, 78°16'W, *Hoover et al.* 2569 (MO); Southeast Trail, in Gualpi Chico area near Awá encampment,

00°58'N, 78°16'W, *Hoover et al.* 2735 (MO); near encampment in Gualpi Chico area of Awá Reserve, 00°58'N, 78°16'W, *Hoover et al.* 2838 (MO).

Palicourea clerodendroides C. M. Taylor, sp. nov. TYPE: Ecuador. Zamora-Chinchi: Cantón Nangaritza, Río Nangaritza, Pachicutza, 04°07'S, 78°37'W, 900 m, 3 Dec. 1990, W. Palacios & D. Neill 6471 (holotype, MO-4328758). Figure 2A–C.

Haec species a *Psychotria gentryi* (Dwyer) C. M. Taylor limbi calycini longiores lobulis late rotundatis atque corolla flava longior distinguitur.

Flowering at 5 m tall, to 8 m tall; stems quadrate, glabrous. *Leaves* paired; blades elliptic, 21–34 × 8–20 cm, at apex acute to usually acuminate with tips to 10 mm long, at base acute to cuneate, papery, adaxially glabrous, abaxially glabrous to hirtellous; secondary veins 11 to 17 pairs, spreading to ascending, broadly curved, usually extending to or nearly to margins or sometimes looping to interconnect in distal part of blade, with 1 (to 3) weak intersecondary vein(s) usually present between pairs of secondary veins, adaxially venation plane or a little thickened, abaxially costa prominulous to prominent, secondary veins prominulous, and reticulated minor venation plane; margins thinly to distinctly cartilaginous; *petioles* 1–4 cm long, glabrous to hirtellous; *stipules* glabrous to hirtellous, persistent at least with leaves, united around stem in a continuous sheath 4–6 mm long, lobes 14–18 mm long, membranaceous, acute, triangular to lanceolate, fused for ca. ½, with sinus acute and side margins rounded at least at base, entire to ciliolate. *Inflorescences* terminal, erect, with peduncles 2–6.5 cm long, often with bracts subtending the basalmost pair of branches well developed and leaflike and the inflorescence thus appearing “tripartite”; panicles broadly pyramidal to corymbiform-rounded, 2.5–8 × 5–14 cm excluding corollas, with 2 to 3 pairs of developed secondary axes, with flowers pedicellate in cymules of 2 to 5; bracts ciliolate, those subtending secondary axes lanceolate to ligulate or ovate, 6–15 mm long, acute, those subtending pedicels lanceolate to elliptic, 3–6 mm long, obtuse to acute; pedicels 1–3 mm long; peduncle, axes, bracts, and pedicels hirtellous or pilosulous, yellow to red; *flowers* with hypanthium cylindrical to cupuliform, 2–3 mm long, hirtellous to glabrous; *calyx* limb glabrous, 4–7 mm long, shallowly lobed, lobes obtuse to rounded, ciliolate; *corolla* tubular-funnelform, yellow sometimes with lobes and upper portion of tube purple, a little swollen at base, generally straight at base and in tube, externally glabrous, internally glabrous ex-

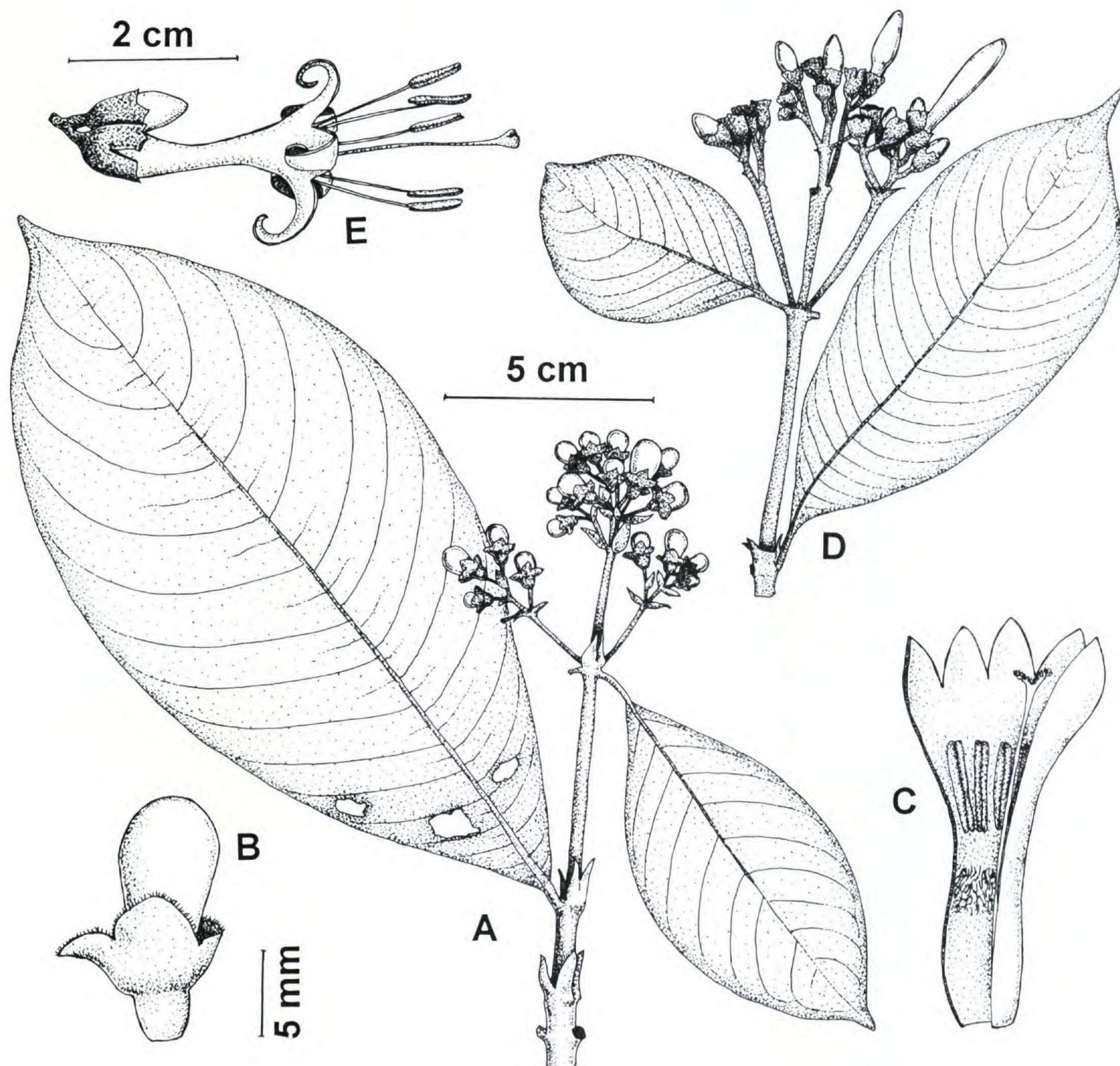


Figure 2. A–C, *Palicourea clerodendroides* C. M. Taylor, based on *Palacios 6471*. —A. Flowering branch with inflorescence. —B. Flower bud. —C. Corolla at anthesis, partially dissected. D, E, *Palicourea eburnea* C. M. Taylor, based on *Uribe 3408*. —D. Flowering branch with inflorescence. —E. Cymule of inflorescence with flower bud and flower at anthesis. A, D to 5-cm scale; B, C to 5-mm scale.

cept for a pilose ring ca. 3 mm wide at ca. 1 mm above base, tube ca. 27 mm long, ca. 7 mm diam. near middle, lobes deltoid, ca. 4 mm long, a little thickened adaxially, in bud rounded; *anthers* in apparent long-styled form ca. 6.5 mm long, positioned ca. $\frac{2}{3}$ of length of corolla tube above base; *stigmas* in apparent long-styled form ca. 3 mm long and exserted; disk not seen. *Infructescences* and *fruit* not seen. [Subg. *Montanae*, Sect. *Montanae*, Ser. 4, Subser. f.]

Distribution and habitat. In wet forest at 900–1000 m, southern Ecuador. Collected in flower in October and December.

This species is distinguished by its relatively large stipules with the lobes triangular to lanceo-

late, broad to rounded inflorescences, and relatively large carnosse flowers. The specific epithet refers to the similarity of this species in the general aspect of the inflorescences and flowers, including the well-developed, spreading calyx limb, to species of *Clerodendrum* L. (Verbenaceae), which can be separated by its superior ovary and lack of stipules. *Palicourea clerodendroides* appears to be related to *P. subalatoides* C. M. Taylor; *P. subalatoides* can be distinguished from *P. clerodendroides* by its stipules with sheaths 1.5–4 mm long and lobes 4–16 mm long; calyx limb 2–3 mm long; and yellow corollas with the tubes ca. 15 mm long and ca. 1.5 mm in diameter and the lobes ca. 5 mm long. *Palicourea clerodendroides* is also very similar in general as-

pect to *Psychotria gentryi* (Dwyer) C. M. Taylor, and these species have previously been confused in herb. *Psychotria gentryi* can be distinguished from *Palicourea clerodendroides* by its flowers sessile or subsessile in glomerules; corolla white or sometimes flushed with purple; corolla tubes ca. 10 mm long; corolla lobes ca. 10 mm long; and apparently allopatric geographic range, from Panama south to Ecuador on the western side of the Andes.

Paratypes. ECUADOR. **Zamora-Chinchipe:** Cantón Nangaritza, parroquia Pachicutza, sector noreste del campamento militar, *Jaramillo & Grijalva 13393* (NY, QCA); Cantón Nangaritza, Río Nangaritza, Pachicutza, 04°07'S, 78°37'W, *D. Neill 9489* (MO, QCNE); Cantón Nangaritza, Río Nangaritza, Pachicutza, camino al hito de Pachicutza, 04°07'S, 78°37'W, *Palacios et al. 8207* (MO, QCNE); Cantón Nangaritza, Miazí, margen derecha Río Nangaritza, 04°16'S, 78°42'W, *Palacios et al. 8630* (MO, QCNE).

Palicourea cogolloi C. M. Taylor, sp. nov. TYPE: Colombia. Chocó: municipio de San José del Palmar, SW of El Cairo along road from the Valle-Chocó limit to Finca La Florida, ca. 8 km from the limit on the old road to Río Blanco, 04°6'N, 76°21'W, 1800–2100 m, 30 Oct. 1996, C. M. Taylor, W. Devia A. & J. Adarve 12012 (holotype, MO-4911399; isotypes, COL, JAUM, TULV). Figure 3A, B.

Haec species a *Palicourea apicata* Kunth stipularum vagina truncata ac lobulis angustis acutis distinguitur.

Flowering at (1)3 m tall, to 15 m tall; stems quadrate, glabrous. *Leaves* paired; blades elliptic, 6–15 × 1.6–8 cm, at apex acute to acuminate with tips to 8 mm long, at base acute to cuneate, chartaceous, adaxially glabrous and nitid, abaxially glabrous except appressed-puberulous along costa and secondary veins; secondary veins 7 to 11 pairs, usually extending to near or weakly uniting with margins, with 1 to 3 weak intersecondary veins usually present between pairs of secondary veins, adaxially costa prominulous and remaining venation thickened, abaxially costa prominulous to prominent, secondary veins prominulous, and reticulated minor venation thickened; margins thinly to distinctly cartilaginous, entire; *petioles* 5–15 mm long, glabrous; *stipules* glabrous, persistent at least with leaves, united around stem into a continuous truncate sheath 2–5 mm long, entire to ciliolate, lobes narrowly triangular to linear, 1.5–2.5 mm long, acute, entire. *Inflorescences* terminal, erect, with peduncles 0.2–4 cm long, sometimes with leaves or bracts subtending the basalmost pair of secondary axes well developed and the inflorescence appearing “tripartite”; panicles pyramidal, 11–16 × 10–11 cm excluding corollas, with 5 to 7

pairs of developed secondary axes, with the basalmost pair often strongly ascending and much longer than the other pairs, with flowers pedicellate in cymes of 3 to 7; bracts entire to ciliolate, acute to rounded, those subtending secondary axes narrowly triangular to deltoid, 1–5 mm long, those subtending pedicels deltoid to ligulate, 1–1.5 mm long; pedicels 1–3 mm long; peduncle, axes, bracts, and pedicels moderately to densely puberulous, blue-violet to purple; *flowers* distylous, with hypanthium glabrous, turbinate, ca. 1 mm long; *calyx* limb glabrous to puberulous, 0.4–1.2 mm long, deeply lobed, lobes triangular to deltoid, acute to rounded, ciliolate; *corolla* tubular-funnelform, purple to blue-violet, swollen and gibbous at base, bent ca. 90° at base and bent again just above basal swelling, generally straight in tube above this bend, externally glabrous, internally glabrous except for a pilosulous ring ca. 1 mm wide at ca. 1.5 mm above base, tube 6–8 mm long, ca. 2 mm diam. near middle, lobes triangular to ligulate, 2–3 mm long, acute, a little thickened adaxially and abaxially, in bud truncate, with sinuses not or slightly saccate at base; *anthers* in short-styled form ca. 3 mm long and partially exerted, in long-styled form ca. 2.5 mm long and positioned ca. ¾ of length of corolla tube above base; *stigmas* in short-styled form ca. 4 mm long and positioned ca. ¾ of length of tube above base, in long-styled form ca. 0.8 mm long and exerted; disk 1–1.2 mm high, annular. *Infructescences* similar to inflorescences; *fruit* ellipsoid, 4.5–5 × 4 mm, not flattened laterally, glabrous, purple to black; pyrenes with 3 to 5 low rounded longitudinal ridges. [Subg. *Montanae*, Sect. *Montanae*, Ser. 3, Subser. c.]

Distribution, habitat, and phenology. In wet forest at 1300–3040 m, Cordilleras Central and Occidental of Colombia. This species has been collected in flower in March, April, June, August, October, November, and December, and in fruit in January, February, March, May, June, October, and December.

This species is distinguished by its stipules with well-developed truncate sheaths and narrow lobes; rather stiff shiny leaves; pyramidal purple to blue-violet inflorescences; blue-violet to purple corollas that are strongly gibbous and bent at the base and have relatively short tubes; and relatively small ellipsoid fruits. *Palicourea cogolloi* is similar to *P. apicata* Kunth; *P. apicata* can be distinguished from *P. cogolloi* by its interpetiolar stipules with shallow broad lobes and its broader, usually rounded inflorescences. *Palicourea cogolloi* is also similar to *P. angustifolia* Kunth; *P. angustifolia* can be

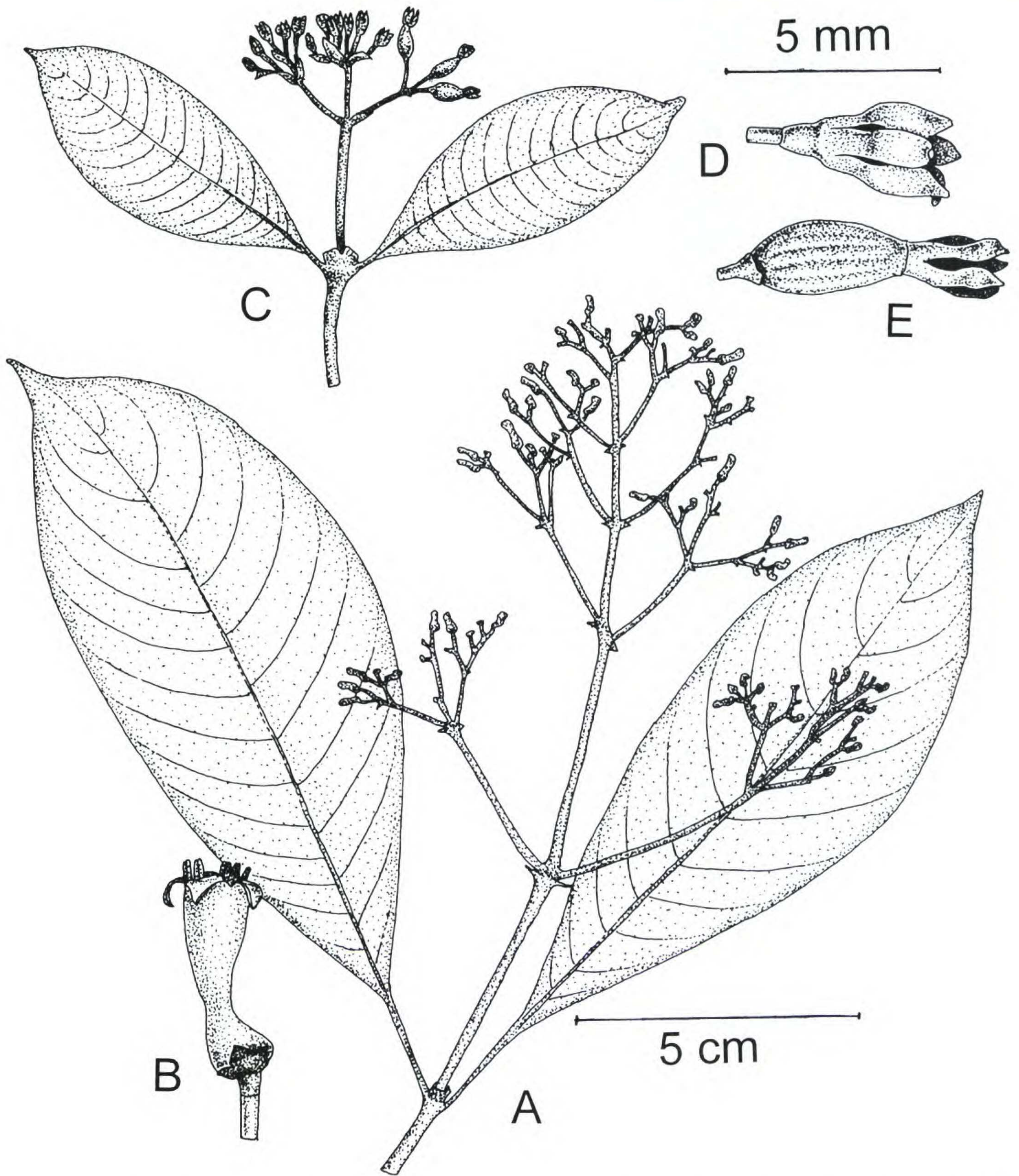


Figure 3. A–B, *Palicourea cogolloi* C. M. Taylor, based on *Cárdenas et al.* 3172. —A. Flowering branch with inflorescence. —B. Flower at anthesis. C–E, *Palicourea garcioides* C. M. Taylor, based on *Andersson et al.* 2124. —C. Flowering branch with inflorescence after anthesis, with developing fruits. —D. Calyx limb and hypanthium after anthesis. —E. Developing fruit. A, C to 5-cm scale; B, D, E to 5-mm scale.

distinguished from *P. cogolloi* by its corollas that are generally straight or only a little bent at the base and have tubes 14–15 mm long. This new species has frequently been confused with both *P. apicata* and *P. angustifolia* in herb. *Palicourea cogolloi* has been collected frequently in recent years by Colombian botanists, in particular by Alvaro Co-

gollo and his colleagues and students at JAUM; the species epithet honors this productive and knowledgeable scientist.

Paratypes. COLOMBIA. **Antioquia:** bajo de la cumbre cerca de Santa Elena, camino entre Medellín y Río Negro, *Barkley et al.* 383 (MEDEL), *Gutiérrez* 1063 (MEDEL), 1145 (MEDEL); municipio de Jardín, Alto de Ven-

tanás 15 km SO de Jardín en la vía a Riosucio, 05°30'N, 75°50'W, *Callejas et al.* 3910 (HUA, MO); municipio de Urrao, Parque Nacional Natural "Las Orquídeas," sector Cabaña de Calles, quebrada La Agudelo, 06°31'N, 76°19'W, *Cárdenas et al.* 3172 (JAUM, MO); municipio de Urrao, vereda Calles, Parque Nacional Natural "Las Orquídeas," margen derecha del río Calles, 06°32'N, 76°19'W, *Cogollo et al.* 4109 (JAUM, MO), *Pipoly et al.* 17127 (JAUM, MO), en el filo al NO de la Cabaña de Calles, *Cogollo et al.* 6466 (JAUM, MO), 6479 (JAUM, MO), 6984 (JAUM, MO), 7012 (JAUM, MO), 7135 (JAUM, MO), *Pipoly et al.* 16566 (JAUM, MO), 06°29'N, 76°14'W, *Pipoly et al.* 16719 (JAUM, MO); municipio de Enviagado, vertiente occidental, margen izquierda de la Miel, Fuente de Higueron, 06°19'N, 75°35'09"W, *Correa et al.* 452 (JAUM, MO); Belmira, *Espinal* 3 (MEDEL); Alto de Sapa, NW of Vega del Inglés, Paramillo National Park, 07°10'N, 75°54'W, *Gentry & Cuadros* 79076 (MO); municipio de Urrao, páramo de Frontino, El Río, *Londoño et al.* 152 (MEDEL, MO). **Cauca:** municipio de El Tambo, Parque Nacional Munchique, trail to Nueva Granada, 02°43'N, 76°58'W, *Andersson et al.* 2126 (GB, MO, S). **Chocó:** municipio de San José del Palmar, vereda de Río Negro, Cerro Torrá, vertiente oriental, hoya del río Negro, *Ramos et al.* 1283 (CUVC, MO), 1286 (CUVC, MO), cerca de 1 hora arriba del helipuerto, 04°46'N, 76°29'W, *Ramos et al.* 1348 (CUVC, MO); municipio de San José del Palmar, Cerro del Torrá, vertiente nororiental, plan grande abajo de la cumbre, *Silverstone-Sopkin et al.* 1783 (CUVC, MO); municipio de San José del Palmar, Cerro del Torrá, cumbre del Torrá Grande, *Silverstone-Sopkin et al.* 1816 (CUVC, MO); municipio de San José del Palmar, vereda de Río Negro, Cerro Torrá, vertiente oriental, mesa y vecindad abajo de la cumbre, *Silverstone-Sopkin et al.* 4452 (CUVC, MO); municipio de San José del Palmar, SW of El Cairo along road from the Valle-Chocó limit to Finca La Florida, ca. 8 km from the limit on the old road to Río Blanco, 04°46'N, 76°21'W, *Taylor et al.* 12020 (MO, TULV). **Valle del Cauca:** municipio de Cali, Km 18 y Km 20 de la carretera de Cali a Buenaventura entrando por la Finca Zíngara, *Cabrera & van der Werff* 15793 (MO); municipio de Cali, corregimiento de La Elvira, Cordillera Occidental, Finca Zíngara, Km 18 de la carretera Cali-Buenaventura, Km 4 vía a Dapa, 03°30'N, 76°34'W, *Giraldo-Gensini & Agredo* 550 (MO, TULV), 711 (MO, TULV); municipio de El Cairo, Cerro del Inglés, Cordillera Occidental, Serranía de los Paraguas, a 1 hora en jeep de El Cairo, *Silverstone-Sopkin* 2696 (CUVC, MO), 2800 (CUVC, MO).

Palicourea eburnea C. M. Taylor, sp. nov. TYPE:

Colombia. Boyacá: Duitama, carretera de Virrolín, Hacienda de La Rusia, 2600–2800 m, 14 Nov. 1945, *L. Uribe Uribe* 1083 (holotype, COL; isotype, MO-5006421). Figure 2D, E.

Haec species a congeneris limbo calycino 3–6 mm longo, limbo calycino sinuato vel leviter lobato, corolla alba infundibuliformi extus dense lanosa atque filamentis styloque sat longis distinguitur.

Flowering at 2 m tall; stems quadrate, hirtellous to glabrescent. *Leaves* paired; blades elliptic to somewhat oblanceolate, 7.5–16 × 2.8–7 cm, at apex acute to acuminate with tips to 10 mm long,

at base acute to usually cuneate or sometimes obtuse, papyraceous to chartaceous, adaxially glabrous, abaxially sparsely hirtellous on lamina and moderately to densely so on costa and secondary veins; secondary veins 11 to 17 pairs, spreading, usually extending to unite at least weakly with margins, with 1 to 2(3) rather weak intersecondary veins usually present between pairs of secondary veins, adaxially costa prominulous and remaining venation plane, abaxially costa prominulous to prominent, secondary veins prominulous, and reticulated minor venation plane to thickened; margins distinctly cartilaginous, ciliate; *petioles* 8–25 mm long, hirtellous; *stipules* hirtellous to glabrescent, persistent at least with the leaves, united around the stem into a continuous truncate sheath 4–8 mm long, lobes narrowly triangular to linear, 2.5–5 mm long, acute, entire to ciliolate. *Inflorescences* terminal, erect, with panicles subsessile and appearing "tripartite," rounded-corymbiform, 5–8 × 6–12 cm excluding corollas, with 2 to 3 pairs of developed secondary axes, with flowers pedicellate in cymules of 2 to 5; bracts entire to ciliolate, acute, those subtending secondary axes narrowly triangular, 4–5 mm long, those subtending pedicels triangular to deltoid, 0.5–1.5 mm long, often displaced distally along pedicel; pedicels 2–5 mm long; peduncle, axes, bracts, and pedicels glabrous or the bracts sometimes hirtellous; *flowers* with hypanthium glabrous, turbinate, 3–4 mm long; *calyx* limb glabrous, 3–6 mm long, sinuate to very shallowly lobed, lobes broadly obtuse, entire; *corolla* funnellform, white, somewhat swollen at base, straight at base and in tube, externally glabrous at base but for most of its length densely lanose with rather stout trichomes to 0.1 mm long, internally glabrous except for a pilose ring ca. 4 mm wide at ca. 5 mm above base, tube ca. 16 mm long, ca. 3 mm diam. near middle, ca. 10 mm diam. at throat, lobes ligulate, ca. 16 mm long, obtuse to acute, not much thickened adaxially, in bud rounded, with sinuses not saccate; *anthers* ca. 7.5 mm long, exerted on filaments ca. 14 mm long that are inserted at top of corolla tube; *stigmas* ca. 1.5 mm long, exerted on style ca. 35 mm long; disk ca. 2 mm high, annular. *Infructescences* similar to inflorescences; *fruit* ellipsoid, ca. 10 mm diam., not flattened laterally, glabrous, color not observed; pyrenes 2, with 3 to 5 rather sharp longitudinal ridges. [Provisionally: Subg. *Montanae*, Sect. *Psychotrioides*, Ser. 9.]

Distribution, habitat, and phenology. In wet forest at 2600–3000 m in the Cordillera Oriental

of the Andes in Colombia; collected in flower in March, October, and November, in fruit in November.

This species is distinguished by its stipules united around the stem into continuous truncate sheaths; subsessile rounded-corymbiform inflorescences; well-developed but truncate or very shallowly lobed calyx limb; pyrenes with sharp longitudinal ridges; broadly funnelform corollas that are externally densely but shortly lanose; and well-exserted anthers and stigmas. In general aspect it is similar to *Palicourea candida* C. M. Taylor; *P. candida* can be distinguished from *P. eburnea* by its stipules that are interpetiolar and floral bracts 3–7 mm long. The specific epithet refers to the color of the flowers, which are described on one label (Uribe 3408) as “*blanco de nieve*” (i.e., “snow white”).

The relationships of this new species within *Palicourea* are not entirely clear, and it is classified only provisionally here. The floral morphology seen on herbarium specimens suggests that this species is homostylous, with the stigma and anthers both strongly exserted and held at nearly the same level. However, the number of flowering specimens available for study is relatively small, and the flowers on these dried specimens appear to be shrunken, so the corolla sizes and proportions given here may be smaller than those of living plants.

Paratypes. COLOMBIA. **Boyacá:** El Huerto, *Espinal et al.* 1569 (MEDEL); Hacienda de la Rusia, en la carretera de Duimata a Charalá, *Uribe 3408* (COL).

Palicourea garcioides C. M. Taylor, sp. nov.

TYPE: Colombia. Cauca: municipio El Tambo, Parque Nacional Munchique, trail to Nuevo Granada, 02°43'N, 76°58'W, 2000–2300 m, 14 Apr. 1994, *L. Andersson, F. González, C. Gustafsson, C. Persson & J. H. E. Rova 2124* (holotype, S; isotypes, GB, MO-4895911, NY). Figure 3C–E.

Haec species a *Palicourea garciae* Standley stipulis truncatis elobatis, limbo calycino 2–5 mm longo atque fructu ca. 5.5 × 2 mm distinguitur.

Flowering at 5 m tall; stems quadrate, hirtellous to glabrescent. *Leaves* paired; blades elliptic, 5–8.5 × 1.6–2.2 cm, at apex acute to acuminate with tips to 10 mm long, at base acute to usually cuneate, papyraceous, adaxially glabrous except hirtellous along costa, abaxially glabrous except strigulose to hirtellous along costa and secondary veins; secondary veins ca. 12 pairs, spreading, usually extending to unite at least weakly with margins, with 1(2) weak intersecondary veins usually present between pairs of secondary veins and minor venation not evident, adaxially costa prominulous and remaining

venation plane, abaxially costa prominulous to prominent, secondary veins prominulous, and remaining venation plane; margins thinly to distinctly cartilaginous, entire; *petioles* 3.5–7 mm long, sparsely hirtellous to glabrous; *stipules* glabrous, persistent at least with leaves, united around the stem into a continuous, truncate to shallowly emarginate sheath 4–5 mm long, entire. *Inflorescences* terminal, erect, with peduncles 5–35 mm long, sometimes with the leaves or bracts subtending the basalmost pair of branches rather well developed and inflorescences appearing “tripartite”; panicles pyramidal, 3–4 × 4–7 cm excluding corollas, with 2 to 4 pairs of developed secondary axes, with flowers pedicellate in cymules of 3 to 5; bracts ligulate, entire to ciliolate, those subtending secondary axes 3.5–5 mm long, obtuse to truncate, those subtending pedicels 2.5–4 mm long, acute; pedicels 1–5 mm long; peduncle, axes, bracts, and pedicels greenish white, sparsely hirtellous or bracts usually glabrous; *flowers* with hypanthium cylindrical, ca. 1 mm long; *calyx* limb glabrous, 2–5 mm long, divided nearly to base, lobes ligulate, acute to obtuse, entire; *corolla* in bud tubular, pale yellow, a little swollen at base, straight at base and in tube, externally glabrous, internally glabrous except for a pilose ring just above base, tube ca. 2 mm long, lobes triangular, ca. 2 mm long, a little thickened adaxially, in bud rounded, with sinuses not saccate; mature *anthers* and *stigmas* not seen; disk ca. 1 mm high, annular. *Infructescences* similar to inflorescences; *fruit* narrowly ovoid, ca. 5.5 × 2 mm, flattened laterally, glabrous, dark purple; pyrenes 2, with 3 to 5 low rounded longitudinal ridges. [Subg. *Montanae*, Sect. *Psychotrioides*, Ser. 8.]

Distribution, habitat, and phenology. In wet forest at 2000–2300 m in the southern Cordillera Occidental of the Andes in southwestern Colombia.

This species is distinguished by its stipules that are united around the stems into truncate to shallowly emarginate sheaths; rounded-corymbiform inflorescences with relatively well developed floral bracts; well-developed calyx limbs; and relatively narrow fruits. It is similar to *Palicourea garciae* Standley; *P. garciae* can be distinguished from *P. garcioides* by its emarginate to shallowly bilobed stipules, bracts subtending the pedicels 1–1.5 mm long, calyx limb 0.8–1.2 mm long, and fruit ca. 5 mm wide. The specific epithet refers to the similarity of this new species to *P. garciae*. *Palicourea garcioides* is currently only known from the type collection, which was made in a poorly explored region in western Colombia.

Palicourea glandulifera C. M. Taylor, sp. nov.

TYPE: Colombia. Nariño: La Planada Reserve, 7 km from Chucunés, 01°05'N, 78°01'W, 1800–1850 m, 4 Jan. 1988, A. Gentry, O. de Benavides & P. Keating 60375 (holotype, PSO; isotypes, COL, MO-4895912). Figure 1C–E.

Haec species a congeneris stipulis sat bene evolutis, lobulis corollinis in alabastro extus glandularibus atque fructu obovoideo porcis longitudinalibus acutis ornato distinguitur.

Shrubs and small trees flowering at 2.5 m tall, to 4 m tall; stems quadrate, hirtellous to glabrescent. *Leaves* paired; blades elliptic to oblanceolate, 9.5–24 × 5–11 cm, at apex acute to acuminate with tips to 1 cm long, at base cuneate to usually acute, papraceous, adaxially glabrous except hirtellous on costa, abaxially sparsely hirtellous throughout to densely so along costa and secondary veins; secondary veins 13 to 21 pairs, spreading, broadly curved, usually extending to unite with margins or sometimes reticulated or looping to interconnect near or at margins, with 1(2) well-marked to weak intersecondary veins usually present between pairs of secondary veins, adaxially costa and secondary veins plane to thickened and remaining venation plane, abaxially costa prominulous to prominent, secondary veins prominulous, and reticulated minor venation plane to thickened; margins thinly cartilaginous; *petioles* 1.5–3 cm long, hirtellous; *stipules* hirtellous, persistent at least with leaves, united around stem into a continuous sheath or with intrapetiolar portion often reduced, interpetiolar portion with a truncate to concave sheath 4–6 mm long, lobes triangular to deltoid, 3–5 mm long, acute, ciliolate. *Inflorescences* terminal, erect, with peduncles 1–5 cm long; panicles pyramidal, 6–9.5 × 7–9.5 cm excluding corollas, with 6 to 8 pairs of developed secondary axes, with flowers pedicellate in cymules of 3 to 7; bracts ciliolate, triangular to elliptic, obtuse to acute, those subtending secondary axes 1–2 mm long, those subtending pedicels 0.8–1 mm long; pedicels 1–1.5 mm long; peduncle, axes, bracts, and pedicels puberulous to strigulose or hirtellous, whitish green; *flowers* distylous, with hypanthium turbinate, ca. 1 mm long, puberulous; *calyx* limb glabrous to hirtellous, 1–1.2 mm long, divided deeply, lobes triangular to deltoid, entire; *corolla* funnellform, white, a little swollen at base, straight at base, straight to somewhat curved in tube, externally glabrous to densely puberulous or hirtellous, internally glabrous except for a pilose ring ca. 1.5 mm wide at ca. 2 mm above base, tube ca. 8 mm long, 1–1.5 mm diam. near middle, lobes triangular, ca. 3.5 mm long, acute, not or a little thickened adaxially at apex, in bud rounded and with a glandular area ca. 1 mm diam. in the upper

middle of the abaxial side (Fig. 1D); *anthers* in short-styled form ca. 2.5 mm long, partially exerted, in long-styled form ca. 3 mm long, positioned ca. 1/3 of length of corolla tube above base; *stigmas* in short-styled form ca. 2 mm long and positioned ca. 1/2 of length of corolla tube above base, in long-styled form ca. 1 mm long and exerted; disk 1–1.2 mm high, annular. *Infructescences* similar to inflorescences or branches sometimes more spreading; *fruit* obovoid, ca. 7 × 5.5 mm, not flattened laterally, glabrous, blue; pyrenes with 3 to 5 sharp longitudinal ridges. [Subg. *Montanae*, Sect. *Obovoideae*, Ser. 6.]

Distribution and habitat. In wet forest at 1600–2300 m, in southwestern Colombia. Collected in flower in January, April, May, July, and November, and in fruit in November.

This species is distinguished by its relatively well developed, sheathing or often nearly interpetiolar stipules; corollas with glandular areas on the external surface of the lobes in bud (Fig. 1D); obovoid fruits; and pyrenes with rather sharp longitudinal ridges. It has been confused with *Psychotria levis* (Standley) C. M. Taylor of Peru. *Psychotria levis* also has corolla lobes that are apparently glandular on the abaxial surfaces in bud, but it can be distinguished from *Palicourea glandulifera* by its corollas with tubes 2–3 mm long and straight at the base; ellipsoid fruits ca. 4 × 2.5 mm; and broadly angled pyrenes. *Palicourea glandulifera* and *Psychotria levis* have both been confused in herb. for many years with a species of *Psychotria* from Ecuador that is apparently undescribed; this apparently undescribed species can be distinguished from both *Palicourea glandulifera* and *Psychotria levis* by its lack of abaxial thickenings or glandular areas on the corolla lobes in bud.

Paratypes. COLOMBIA. **Cauca:** municipio El Tambo, Parque Nacional Munchique, trail to Nueva Granada, 02°43'N, 76°58'W, Andersson et al. 2120 (GB, MO, NY, S). **Nariño:** municipio de Ricaurte, corregimiento Chuchunéz, Reserva Natural La Planada, 7 km al sur de Ricaurte en el camino Tumaco–Pasto, 01°10'N, 77°58–59'W, Barreto et al. 165 (MO), de Benavides 5659 (MO, PSO), Giraldo 64 (HUA), Restrepo 437 (MO), 461 (MO), 695 (MO); trail from La Planada to Pielapi, 01°04'N, 78°02'W, Gentry et al. 63605 (MO).

Palicourea kirkbrideae C. M. Taylor, stat. et

nom. nov. Replaced name: *Palicourea justicioides* var. *macrocalyx* M. C. G. Kirkbride, Mutisia 47: 3. 1980, not *Palicourea macrocalyx* Standley, 1928. TYPE: Colombia. Cundinamarca: Cordillera Oriental, Las Cascadas, S side of Guavio River, 18 km NE of Gachalá, 1950 m, 29 Oct. 1944, M. L. Grant 10526 [holotype, US-2339102, photo (no neg. #) MO-2782281; isotypes, COL, NY, WIS].

In her original description of this species, García-Kirkbride accurately noted the similarities between this species and *Palicourea justicioides* Standley and considered them conspecific. The plants she described as a variety of *P. justicioides* are here considered a distinct species and given a replacement epithet that honors her. *Palicourea kirkbrideae* is distinguished from *P. justicioides* by its secondary veins that are prominulous on the adaxial leaf surface; peduncles 8–9.5 cm long; purple inflorescence bracts and calyx limbs; calyx limbs ca. 9 mm long; corolla tubes ca. 30 mm long; and corolla lobes each with a linear projection 6–7 mm long borne from the adaxial surface. In contrast, *P. justicioides* has the secondary veins plane on the adaxial leaf surface; peduncles 0.6–2.5 cm long; apparently green inflorescence bracts and calyx limb; calyx limb 3.5–4 mm long; corolla tubes 16–

20 mm long; and corolla lobes unappendaged. *Palicourea kirkbrideae* is classified in Subg. *Montanae*, Sect. *Montanae*, Ser. 4, and provisionally in Subser. 4 pending discovery of its fruits.

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