NEW AND NOTEWORTHY PLANTS FROM RECENT BOTANICAL SURVEYS IN PAPUA NEW GUINEA, 7

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In the species-rich tropics, rapid assessment surveys have become a widely employed method for acquiring bioestimates of site value. Some of Papua New Guinea's most pristine habitats are currently being explored with such surveys. Five new species collected during these investigations are described here. The novelties are *Psychotria kamialii* sp. nov. (*Rubiaceae*), *P. muellerdomboisii* sp. nov., *P. pseudomaschalodesme* sp. nov., *P. wiakabui* sp. nov., and *Solanum symonianum* sp. nov. (*Solanaceae*). Taxonomic notes are also provided for *Aglaia puberulanthera* (*Meliaceae*), and *Palmeria gracilis* (*Monimiaceae*).

Keywords. *Aglaia*, *Palmeria*, *Psychotria*, *Solanum*.

INTRODUCTION

Papua New Guinea's (PNG) conservation imperatives were recently defined in discussions involving multidisciplinary evaluation and synthesis (cf. Beehler, 1993; Johns, 1993; Sekhran & Miller, 1995). As a result of such assessments, inventory programs are currently active in several of the most critical floristic environments, and are now producing results consistent with earlier projections. In the past five years, substantial numbers of new and rare taxa have been discovered in the Bismarck-Ramu, Crater Mt, Josephstaal-Adelbert, Kamiali, and Lakekamu tracts. Examination of specimen vouchers from ongoing exploration continue to provide further discoveries of interest.

In the following account, several novelties are reported from sites previously targeted for conservation action. The type localities are shown as numbered entries in Fig. 1, together with locations of conspecific collections. The flower descriptions are based on measurements from spirit-preserved or resuscitated material.

DESCRIPTIONS OF NEW SPECIES

Rubiaceae

Psychotria kamialii W. Takeuchi, **sp. nov.**
A *P. wiakabui* W. Takeuchi arcte similans, sed ab ea laminis utrinque glabris differt. Type: Papua New Guinea, Morobe Province, Kamiali Wildlife Management Area, 1.5km W of Lababia Village, margin of *Metroxylon* swamp, 7°17′S, 147°06′E, 5–10m, 14 xi 1999 (fr.), *W. Takeuchi & J. Sengo* 14310 (holo. LAE; iso. K).

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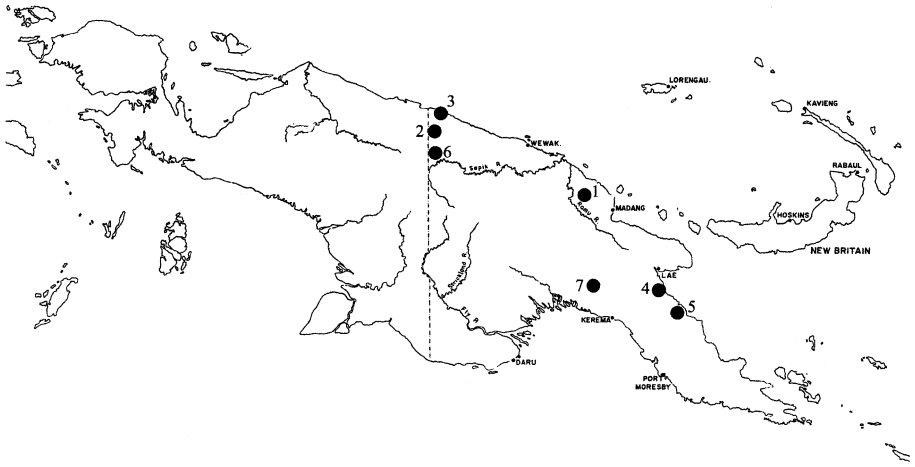

FIG. 1. Island of New Guinea. Collection localities, from the text. 1, Josephstaal FMA Area; 2, Imonda; 3, Vanimo; 4, Kamiali Wildlife Management Area; 5, Waria River; 6, Amanab-Green River; 7, Crater Mt Wildlife Management Area.

Subshrubs c.50cm tall, orthotropic, unbranched. *Stems* cylindrical, collapsed and compressed when dried, fistulose or pithy, apically herbaceous, lignified only near the base, smooth, green, rufescent to brunneous after drying, foliate from the upper 3–4 nodes, articulated by annulate abscission scars on lower parts. *Leaves* fleshy, entirely glabrous, obliquely spreading; blades oblanceolate (or elliptic-oblong), 13.5–23.5 × 5.5–8.5cm, apex broadly rounded then abruptly or gradually 2–5mm acuminate, margins slightly discolorous, reflexed or not, base cuneate to obtuse, symmetric; adaxial surfaces opaque green, abaxially pale green, both sides drying ± concolorously olivaceous or with undersides (faintly rufous), bifacially minutely pustulate or alveolate, also with interspersed cystoliths; domatia absent; venation pinnate, secondaries 10–16 jugate, camptodromous, at the centre spreading 60° from the midrib, supramedially looping, veins towards the apex progressively more oblique and arcuate, tertiary veins lax, distinctly wrinkled on underleaves, higher order nerves freely but obscurely anastomosing, costae channelled above, convex beneath, secondaries prominulous on both sides, reticulum inconspicuous; petiole 3–11mm, planoconvex in cross-section; stipules oblong-acuminate, 15–25 × 6–8mm, persistent, initially connate to about halfway, basally vaginate, later separating, often distinct from the start, surfaces green, foliaceous, plane, glabrous on both sides, abaxially marked by longitudinal cystoliths. *Flowers* not seen; calyx 2mm long on the young ovary, broadly infundibular, cleft halfway, 5-partite, lobes triangular, glabrescent, acute or mucronulate; disk dome-shaped, nigrescent, glabrous, abruptly excavated at the stylar insertion. *Infructescence* paniculate, strictly terminal, erect, c.8 × 3cm, peduncle 5cm × 1.5mm, all axes opaquely white, puberulent, hairs reddish brown and septate, the smaller ones hyaline-papillate; branches

spreading, not or hardly exceeding 1cm length, terminating in loose dichasia; bracts deciduous (or persisting), c.4.5 × 1mm, glabrate. *Drupes* white, oblongoid, 7–8 × 2.5–5.0mm, slightly curved, pericarp sulcate, spongy and entire in vivo, reducing considerably on drying and collapsing around the pyrenes. *Pyrenes* 2, unequal, (or 1), enclosed in a thick-crustaceous endocarp, acutely 3–5-ridged on back, flat on the commissural face; endosperm non-ruminate, farinaceous.

Distribution and habitat. *Psychotria kamialii* is gregarious along the margins of coastal swamps, but can also range onto adjacent slopes from lower foothill forest. It is generally found underneath closed canopy. The species is presently known only from the type locality.

Etymology. The epithet commemorates the Kamiali Wildlife Management Area, a conservation unit administered by the Village Development Trust.

Among Papuasian congeners, the combination of a monocaulous habit and large persistent stipules is shared only with *P. wiakabui*. The similarity between the two species is also ecological, because both taxa are facultative helophytes from waterlogged or seasonally flooded habitats.

The new species will key directly to fork 108 on Sohmer (1988: 26). It can be accommodated by replacing the lead for *P. inconspicua* Merr. & Perry with the following continuation:

Stipules to 1cm long; inflorescence delicate (rachis < 1mm diam.); endosperm ruminate ——— **P. inconspicua**
Stipules 1.5–2.5cm long; inflorescence moderately robust (rachis 1.5mm diam.); endosperm not ruminate ——— **P. kamialii**

Psychotria muellerdomboisii W. Takeuchi, **sp. nov.**
P. conglobatioide Sohmer aemulans, differt in foliis oblanceolato-obovatis, fructibus obovoideis vel pyriformibus, et albumine ruminato.
Type: Papua New Guinea, Morobe Province, NW of Waria River, Pao Creek near Yai Village, forest on alluvial terraces, 7°57′S, 147°35′E, 150–200m, 4 vi 1999 (fl., fr.), *W. Takeuchi, R. Banka, B. Bau, J. Dobunaba, R. Kiapranis, & M. Lovave* 13132 (holo. LAE; iso. A, BISH, BRIT, CANB, K, L).

Shrub 2–3m tall. *Branchlets* plagiotropic, not infrequently drooping low to the ground, terete, slender, 2.0–2.5mm diam. near the top, compressed and sulcate when dried, fleshy, pithy, often intermittently hollow, surfaces green, marked by abscission scars, at the nodes also with a furfuraceous ring, otherwise the indument tomentulose, brown to reddish brown, persistent, older stems gnarly and pallescent, periderm minutely lineate. *Leaves* decussate, terminally conferted or not; blades fleshy (or herbaceous), oblanceolate-obovate (to elliptic), 7.5–12.5 × 2.5–5.5cm, apex obtuse then abruptly 0.5–1.0cm acuminate, at most 1.5cm subcaudate, margins entire, base usually symmetrically cuneate; adaxial surfaces rugose, broadly bullate between secondary veins, opaque, dark green, abaxially medium green (to glaucescent), for the

most part bifacially olivaceous after drying, upper side glabrate, also with numerous and conspicuous cystoliths, these orbicular or oblong, undersides pubescent on nerves, patently puberulous between; domatia absent; venation brochidodromous (or camptodromous), laterals 7–12 jugate, ±equispaced, at the centre of the leaf diverging 55–70° from the midrib, supramedially arcuate, midrib and secondaries plane above, prominent beneath, tertiary nerves invisible to the naked eye or at most filiform, reticulum lax, irregular, areolate; petiole (2–)7–15(–19) × 0.5–1.5mm, provided with indument like the branchlets, flat or channelled above, convex beneath; stipules caducous (or subpersistent), discrete, lanceolate-ovate, 6–7 × 2–4mm, bifurcately cleft, the lobes narrowed into 1.5–3.0mm subulate arms, all exterior surfaces ±densely shaggy, inside adpressedly hairy and also marked by oblong cystoliths. *Inflorescence* terminal, pauciflorous, lacking involucral bracts, floral bracts linear-acuminate, c.4mm long, densely hairy. *Flowers* sessile, symmetrically pentamerous, usually 3–5 together, protandrous; calyx shortly hairy on exterior surfaces, glabrous within, tube 3.0mm long, lobes 2.0 × 1.0–1.5mm, persistent; corolla salverform, white, in bud obtuse and valvate, tube cylindrical, 5 × 2mm, externally glabrous except near the limb, inside with scattered pilose hairs at the base of filaments, lobes oblong-lanceolate, 4 × 2mm, thickened at the apex, abaxially hairy; stamens inserted 1.5–2.0mm below corolline sinuses, anthers basifixed, ellipsoid, 1.5 × 0.4mm, included, filaments glabrous and obsolete; disk fleshy, hemispherical, smooth, style 5.5 × 0.1mm, glabrous, stigma bilobed, 1mm long, laxly pilose. *Fruits* obovoid, 5–6 × 5.0–6.5mm, exocarp sulcate, from green or whitish green turning orange, persistently pilosulous especially at the poles; pedicels 1.5–3.0(–4.0)mm long, densely pubescent. *Pyrenes* 2 and equal (or 1), obtusely 3–5 ridged on the back and sides, at the base distinctly prolonged to a 2–3mm foot; endosperm ruminate.

Distribution and habitat. *Psychotria muellerdomboisii* is known only from the Waria River area, from alluvial understoreys and beside small streams under closed canopy. It is excluded from seral or heliophytic situations. The sympatric congener *P. morobensis* Sohmer is superficially similar to the new plant, but at the type locality the two species are ecologically separated by habitat partitioning. *Psychotria muellerdomboisii* is hygrophilous and usually found on seasonally flooded flats, while *P. morobensis* favours the better-drained slopes of foothill forest.

Etymology. The epithet recognizes Professor emeritus Dieter Mueller-Dombois of the University of Hawaii, one of the foremost vegetation ecologists of the Pacific region and a principal contributor to our knowledge of island ecosystems.

Psychotria muellerdomboisii is a member of a small but distinctive complex of species with sessile-capituliform inflorescences. It will key to fork 24 on Sohmer (1988: 14) and to a species pair consisting of *P. gawadacephaelis* Wernham and *P. conglobatioides* Sohmer.

Psychotria muellerdomboisii can be identified by replacing the lead for *P. conglobatioides* (loc. cit.: 14) with the following couplet. Although similar to the latter species,

the novelty is clearly distinguished by its broader leaves and by other characters specified in the new fork:

Fruits obovoid; pyrenes basally prolonged, endosperm ruminate _____ **P. muellerdomboisii**

Fruits globose; pyrenes not prolonged, endosperm homogeneous _____ **P. conglobatioides**

Psychotria pseudomaschalodesme W. Takeuchi, **sp. nov.**
Species haec ab *P. condensatae* Val. differt in inflorescentiis axillaribus (non terminalibus), et bracteis et stipulis non involucratis.
Type: Papua New Guinea, Madang Province, Josephstaal FMA area, along footpath towards Morasapa, W of expedition Camp 1 ('Kumamdeber'), mature growth foothill forest, 4°30′S, 145°02′E, 160m, 29 vii 1999 (fl., fr.), *W. Takeuchi, J. Wiakabu, M. Gorrez, & A. Towati* 13514 (holo. LAE; iso. A, BRIT, K).

Monocaulous suffrutex, c.1.0m height. *Stems* entirely erect or often also decumbent from a horizontal base, never branched, generally cylindrical, subapical diam. 9–11mm, fleshy or somewhat juicy near the top, there collapsing and compressed when dried, only towards the base woody, periderm crustaceous, most surfaces green and smooth in vivo, fuscous and discontinuously striate after drying, indument persisting to lower nodes, rufous, shaggy-villous or at times with hairs cohering and appressed. *Leaves* cauline and opposed; blades dry-coriaceous to pergamentaceous, oblanceolate (or elliptic), 44.5–63.0 × 11–18.5cm, apices gradually acuminate, margins entire, base attenuate, at the petiole minutely retuse or notched; adaxial surfaces broadly bullate between secondary veins, opaque, dark green, abaxially light green, bichromatic after drying: turning olivaceous above and reddish brown beneath; glabrous on the upper side, undersurfaces with a reddish brown indument of appressedly furfuraceous hairs ± crowded along the veins, elsewhere with hairs lax; venation pinnate, inconstantly camptodromous, the secondaries in 27–31 equispaced pairs, usually straight-diverging 55–70° at the centre of the leaf, costae and secondary veins plane on the upper side, at most slightly raised, on undersurfaces manifestly prominent and discolorous with the lamina, tertiary nerves irregularly scalariform, abaxially developed into coarse areolations, otherwise invisible; petiole 16–40 × 4–5mm, densely villous, flat or deeply channelled above, convex beneath; stipules axillary, paired, persisting, free and gradually tapered to the apex, 38–61 × 7–14mm, at first foliaceous, later disintegrating to a scarious residue, on both sides reddish brown hairy whether patent or not, eventually glabrate, the inner face also provided with thickened black colleters especially along the base. *Inflorescence* axillary, contractedly paniculiform, head-like, hemispherical-spheroidal, to 6–7cm diam. and 4cm pedunculate, rachis short, with c.1cm long branches bearing many flowers on the ultimate axes; bracts acute, subtending each flower, crowded, involute, persisting, fimbriate, c.1(–2)mm long; pedicels slender, green and concolorous with calyces, laxly pilosulous or glabrate, from c.3mm long

on the submature flower accrescent to nearly 20mm on the fruit. *Flowers*: calyx synsepalous, persisting, divided nearly to the base, lobes (4–)5(–6), linear-acuminate, 5–6 × 1.0–1.5mm, often fringed; corolla salverform, consistently pentamerous, white, in bud obtuse and valvate, lobes oblong, somewhat thickened, c.3 × 1mm, tube cylindrical, 8.0–8.5 × 1.0–1.5mm, glabrous on all exterior surfaces, inside with a woolly hair ring starting at the filament insertion and continuing downwards for 3mm; stamens 5, adnate c.1mm below corolline sinuses, anthers basifixed, oblongoid, the apex barely exserted, filaments short, glabrous; disk fleshy, glabrous, annulate, parted in the centre by a linear fissure; ovary 2-celled with one ovule per cell; style simple, glabrous, c.5.5mm long, at the top bifurcately split into 2mm oblongish lobes, stigma presented immediately below the anthers, heterostyly not seen in dissected material. *Fruits* obovoid, 7.0–8.5 × 4–5mm, sulcate, dull green when immature. *Pyrenes* 2, equal, crustaceous, dorsally with 2 or 3 acute ridges; albumen farinaceous, homogeneous, white.

Distribution and habitat. Psychotria pseudomaschalodesme occurs throughout the Josephstaal project area of the Nature Conservancy (TNC) and has also been collected from other localities within PNG's Mamose region. The species was usually seen in reduced-light understoreys; as widely scattered individuals on alluvial flats and particularly on lower slopes of foothill forest to at least the 300m level. Although *P. pseudomaschalodesme* is sometimes found in forest edge situations, the plants wither quickly when subjected to dry conditions and are probably sensitive to forest disturbance.

Etymology. The epithet reflects the superficial resemblance to *Maschalodesme*.

Other specimens examined. PAPUA NEW GUINEA. West Sepik District, Amanab Sub-District, Imonda Patrol Post, lowland rain forest, flats near creek, 3°20′S, 141°10′E, 300m, 25 xi 1971 (fl.), *H. Streimann & N. Martin LAE* 52895 (L, LAE); West Sepik Province, Vanimo Sub-Province, Black Water Creek logging area 10km SE of Vanimo, logged over lowland rain forest on limestone, 2°45′S, 141°21′E, 70m, 11 ix 1982 (fl.), *J. Wiakabu et al. LAE* 50084 (BRI, CANB, L, LAE).

Monocaulous plants with axillary-capituliform inflorescences are ordinarily placed in *Maschalodesme*. However the valvate, pentamerous corollas, and drupes with two pyrenes are otherwise indicative of *Psychotria*. Among Papuasian congeners, large leaves, axillary inflorescences, and compacted panicles (as in *P. pseudomaschalodesme*) are seldom encountered. Although the genus remains difficult to define, it has a generally recognizable centre around which peripheral species like *P. pseudomaschalodesme* can be assembled.

In overall aspect the new plant approaches the inadequately known *P. condensata* Val., except that the heads are borne in lower axils and lack involucral bracts.

Psychotria pseudomaschalodesme can be added to the current conspectus by insertion of the following couplet at fork 108 (Sohmer, 1988: 26):

Stipules axillary; inflorescence congested and capituliform _____ **P. pseudomaschalodesme**
Stipules interpetiolar; inflorescence paniculiform _____ to the existing couplet 108

Psychotria wiakabui W. Takeuchi, **sp. nov. Fig. 2.**
Species haec ab *P. kamialii* W. Takeuchi differt in ramulis dense patenti-pilosis, foliis subtus costa nervisque pubescentibus.
Type: Papua New Guinea, West Sepik Province, Amanab District, Block 5 of Green River TRP area, c.10km E of Guriaso Village, lowland rain forest dominated by *Vatica*, *Pometia*, and *Intsia*, on alluvial flat plains, 3°35′45″S, 141°35′20″E, 100m, 25 x 1999 (fl., fr.), *J. Wiakabu & J. Warimbangu LAE* 75799 (holo. LAE; iso. A, BRIT).

Monoaxial suffrutex, erect, 0.5–1.0m tall. *Stems* terete, densely pilose with hairs initially fulvous or ferruginous, later rufescent. *Leaves* cauline, somewhat fleshy; blades heteromorphous: orbicular, obovate, oblanceolate, or elliptic, but generally widest above the middle, 12–18.5 × 5.5–11cm, apex broadly rounded then 2–3mm acuminate (or strictly obtuse), base rounded to equally cuneate, rarely subattenuate; lamina surfaces bifacially ± concolorous in vivo, adaxially light green, abaxially pale whitish green, bichromatic with drying turning olivaceous above and brownish green beneath, leaves glabrate on the upper side, densely marked by linear cystoliths, undersides velutinous especially following veins; venation regularly pinnatiform, secondaries 11–14 per side, usually camptodromous, inframarginal veins present only near the leaf apex, basal pairs ± straight and obliquely ascending, at the centre spreading 60–75° from the midrib, distally more divergent and arcuate, crossing nerves sparingly branched, scalariform or not, the reticulum coarsely areolate and manifestly prominent on undersides, above with all venation plane or scarcely raised; domatia absent; petioles 12–26 × 2–3mm, adaxially channelled, convex beneath, indument like the stem; stipules valvate, persistent, foliaceous, venose, always broadest near the base, lanceolate or ovate, 15–21 × 9–15mm, medially thickened, apex cleft, the sinus 4–10mm deep, each lobe narrowly acuminate, sometimes prolonged to a subcuspidate tip but never clearly aristate, exterior surfaces densely shaggy, appressedly hairy within. *Inflorescence* strictly terminal, paniculiform, 60–70 × 25–30mm, ascending, all surfaces completely obscured by a tawny lanate indument, peduncle to 5cm, rachis 4-verticillate at the first ramification; inflorescence bracts acuminate, persisting, the largest ones paired at the first node, 5–6 × 1–3mm; major branches c.1cm long, each axis terminated by cymose glomerules not or only barely visible through the indument; floral bracts linear-lanceolate, to c.4 × 1mm, subappressedly hairy. *Flowers* sessile or nearly so, minute, crowded, coarsely hairy on exterior surfaces; corolla reportedly whitish green (ex label data) but not visible on the type; disk dome-shaped, glabrous, entire or weakly rugose. *Drupes* subsessile, obovoid, 5–7 × 4.5–5.5mm (immature), white, hirtellous, crowned by the persisting

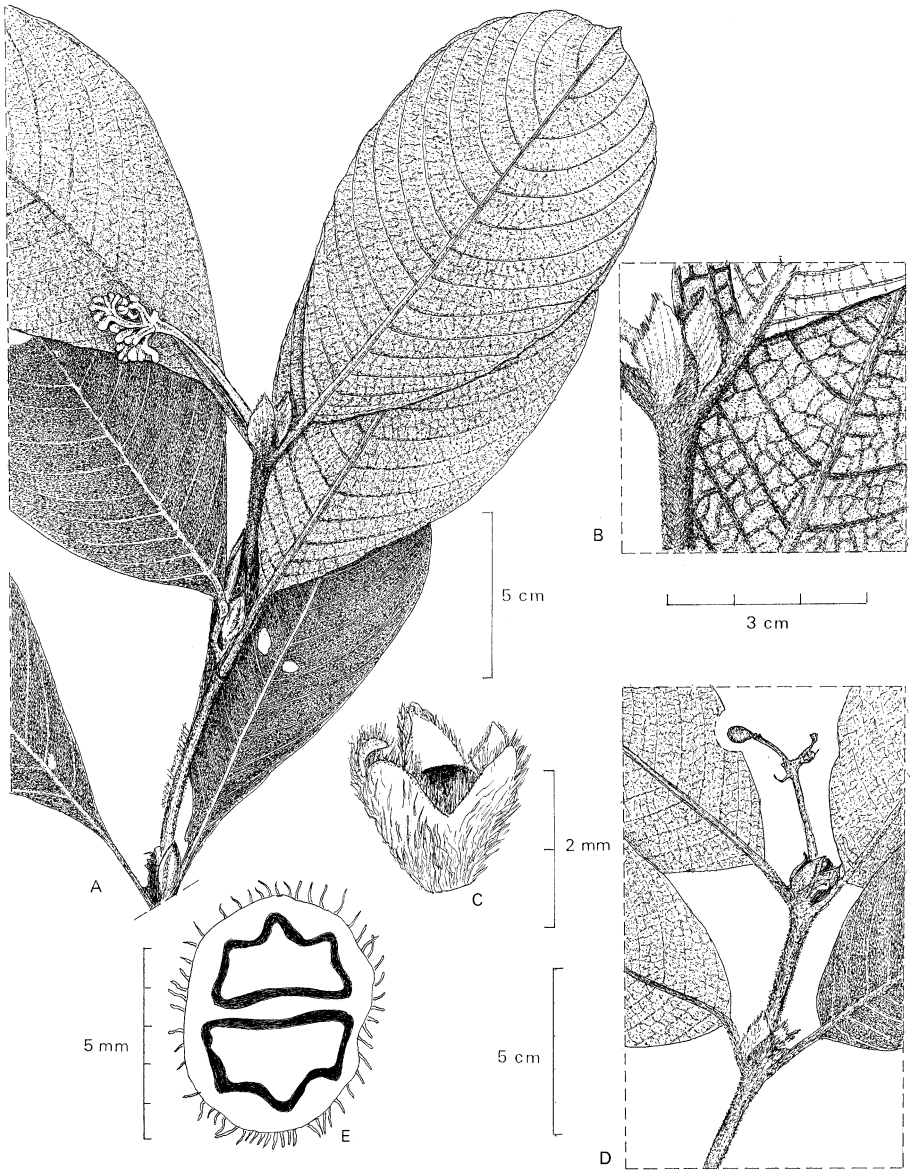

FIG. 2. *Psychotria wiakabui*. A, flowering habit; B, inset, detail of stipule and venation from underside of leaf; C, calyx and disk; D, fruiting habit; E, drupe in cross-section. Scale bars: A, 5cm; B, 3cm; C, 2mm; D, 5cm; E, 5mm. Drawn from *J. Wiakabu & J. Warimbangu LAE* 75799, by N. H. S. Howcroft.

calyx; fruiting sepals 5, lanceolate or deltate, c.1.5 × 1mm, fimbriate, densely hirtellous at the base, less hairy above, adaxially hirsute, tube obsolete. *Pyrenes* 2, equal, acutely 3-ridged on the back, endosperm homogeneous, farinaceous.

Distribution and habitat. Known only from alluvial flatland habitat at the type locality. Reported as favoring swampy areas (Wiakabu, personal communication).

Etymology. *Psychotria wiakabui* is named after my colleague Joseph Wiakabu, the discoverer of the new species and an accomplished botanist-forester with the Lae National Herbarium.

Leaves of *P. wiakabui* are so highly variable in shape as to be of little value in the plant's identification. However the thickly developed indument is very characteristic and provides a convenient criterion for separating the new species from the related *P. kamialii*.

Small monoaxial *Psychotria* are represented in PNG primarily by lowland endemics occurring south of the Central Range. This architectural habit is typically encountered in wet, oftentimes periodically flooded environments. The various single-stemmed taxa are apparently an ecologically induced convergence in form.

The new plant keys to fork 69 on Sohmer (1988: 21). It can be identified by insertion of the following couplet:

Stipules deeply cleft, medially thickened, the lobes acuminate but not aristate; plants densely pubescent _____ **P. wiakabui**
Stipules various, if deeply cleft then also aristate, plants glabrous or pubescent _____ to the existing couplet 69

Solanaceae

Solanum symonianum W. Takeuchi, **sp. nov. Fig. 3.**
Lycianthes primo adspectu maxime simile, sed in pedunculis c.1.5cm longis; pilis stellatis in ramis juvenalibus densis praeditis, et in foliis infra ± densioribus differt.
Type: Papua New Guinea, Morobe Province, Kamiali Wildlife Management Area, Alealer River W of Sachsen Bay, forest on ultrabasics, 7°19′S, 147°4′E, 150–200m, 15 vi 1998 (fl., fr.), *W. Takeuchi* 12027 (holo. LAE; iso. A, ADW, K).

Unarmed plants, procumbent or clambering. *Branchlets* terete, flexuous, pithy, slender, 3–4mm diam., surfaces green, mealy to the naked eye, indument appressed, stellate, persisting, hairs ± dense and interlocking, usually 7–9 subulately rayed, not or scarcely exceeding 0.5mm diam., arms coarse, radiate, pallescent or somewhat hyaline. *Leaves* geminate, subdistichous, herbaceous; lamina elliptic, the largest ones usually 9.0–13.5 × 3.5–5.7cm, at the apex gradually prolonged to an acumen curved to one side or not, margins entire, base cuneate to subattenuate, (equal or) obliquely contracting into the petiole; the smaller blades isomorphous, usually 0.5–0.7x the larger member, concolorously medium green; foliar indument sparser on adaxial surfaces, hairs closely appressed, exclusively stellate, 0.50–0.75(–1.0)mm diam., arms 4–8, equal, straight-filiform, evenly radiate from a punctiform centre, on midribs with the arms parallel and bidirectional, abaxially also with smaller hairs to 0.2mm diam. intermixed among the bidirectional ones; venation pinnate, camptodromous

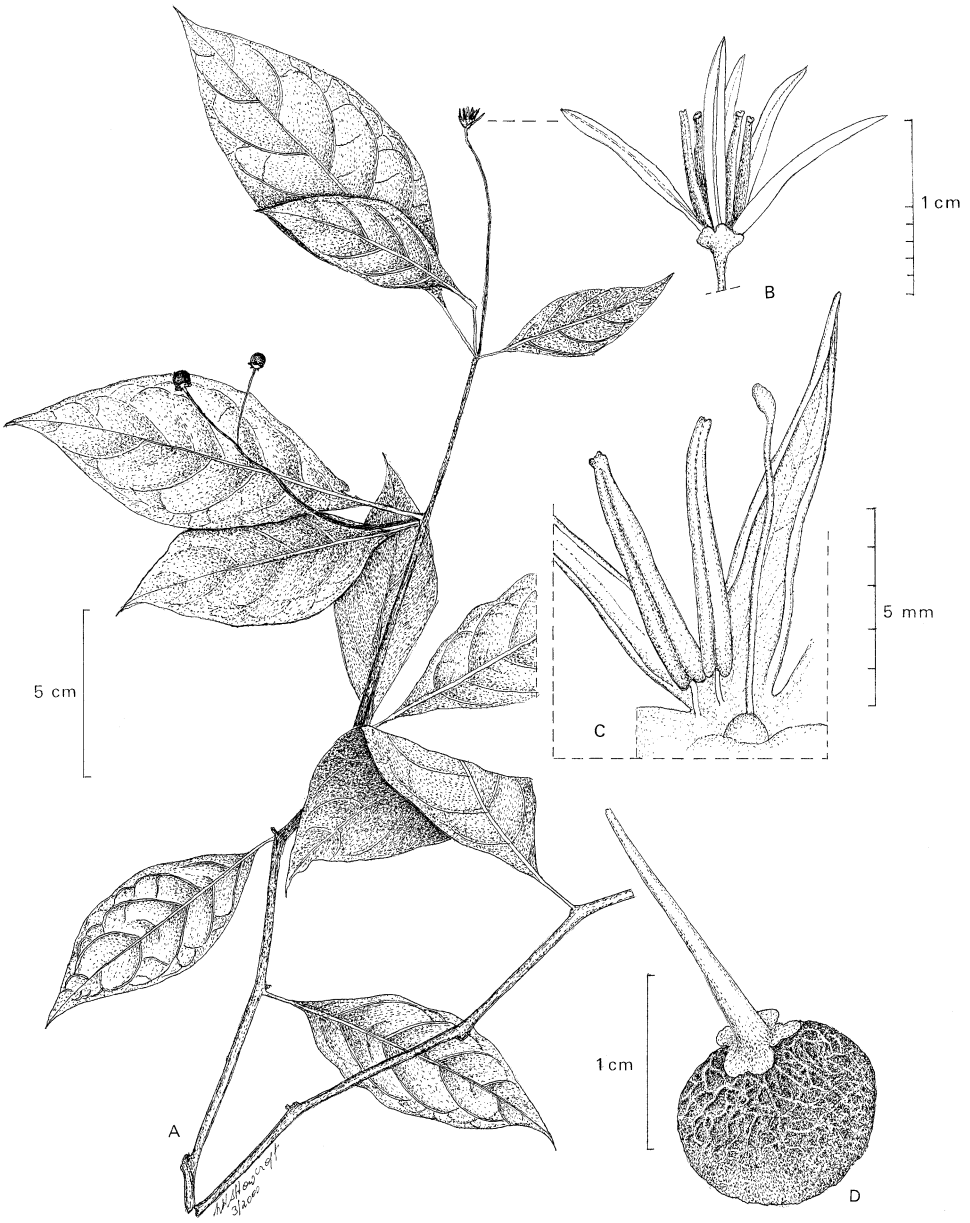

FIG. 3. *Solanum symonianum*. A, fertile habit; B, flower at anthesis; C, inset, detail of dissected flower, showing two stamens, gynoecium, and petals; D, fruit in oblique perspective. Scale bars: A, 5cm; B, 1cm (with five 1mm subdivisions); C, 5mm; D, 1cm. Drawn from the type by N. H. S. Howcroft.

(or inconstantly brochidodromous), secondaries 4–7, diverging 50–60° from the midrib, supramedially curving, reticulum prominulous on both surfaces, ±manifest, areolations lax, irregular; petioles 9–20mm, with indument like the stem, adaxially channelled, rounded beneath. *Inflorescence* axillary from leafy or defoliate nodes, pauciflorous, racemose or umbelliform, 2.0–7.5cm long, rachides laxly marked by patelliform abscission scars, flaccid, all surfaces densely clothed by hairs generally appressed-stellate and conform to the indument on branchlets, peduncles c.1.5cm long. *Flowers* 1–9 together, lax; pedicels 9–17mm at anthesis, filiform, accrescent in fruit to 49mm long; calyx turbinate-cupular, 1.5–2.0 × 2.0–3.0mm, glabrate on inner surfaces, hairy outside, margins truncate or (shallowly 5-lobulate), on fruits more clearly lobed; corolla obtuse in bud, 5-partite, divided nearly to the base or to 2mm connate, petals from linear-lanceolate to oblong-elliptic, 10–11 × 1.2–2.0mm, arching and spreading in the living state, pale blue, costate, densely pubescent without, glabrescent within; stamens 5, inserted below corolline sinuses, filaments to 1.0mm long, anthers connivent, encircling the style, individually linear-lanceolate in silhouette, c.5.0 × 0.75mm, yellow, apically biporose, basally retuse; ovary globose, surfaces sparsely papillate and also with isolated stellate hairs, otherwise glabrate with age; style simple, to 8mm long, weakly expanded at the summit, glabrous except for a few antrorsely directed simple hairs, at the base also with widely scattered papillae like the ovary. *Berry* globose, to 11mm diam., exocarp shiny red, glabrous, rugulose. *Seeds* relatively many, subreniform or fan-shaped, 4.5–5.0 × 4.0–4.5mm, the surface tawny, distinctly alveolate towards the margin, less so near the centre.

Distribution and habitat. Known only from the type locality; seen once in alluvial regrowth.

Etymology. The new binomial recognizes D. E. Symon, an authority on the *Solanaceae* and a principal contributor to our knowledge of its Australasian representatives.

Solanum symonianum combines features from *Solanum* and the former generic satellite *Lycianthes*. The resemblance to *Lycianthes* is reflected in the lianous and unarmed habit, entire leaves, and axillary inflorescences. However the well-developed stellate indument, long peduncle, and lobed calyces, are more characteristic of *Solanum*. Symon (1981, 1985) treats *Lycianthes* as a subgenus within an expanded *Solanum*.

In the current revision of New Guinea *Solanum* (Symon, 1985) the new species will key to couplet sequence 26–27 (loc. cit.: 22) and to a group consisting of *S. nolense* Symon, *S. dallmannianum* Warburg, and *S. turraeaefolium* S. Moore, but is not referable to those names. Superficially the novelty resembles *S. dallmannianum* in general form. If proceeding the other way at the outset, to subg. *Lycianthes*, the key will still lead to an impasse because of the peduncled and elongate inflorescence. *Solanum symonianum* can be added to the current treatment by replacing the lead for *S. dallmannianum* with the following couplet:

Unarmed liane; indument ± dense, on the undersides of leaves with hairs mostly >0.5mm diam. and filiform-rayed ——— **S. symonianum**
Armed shrub or liane; indument very sparse or absent, on the undersides of leaves with hairs <0.5mm diam. and coarsely-rayed ——— **S. dallmannianum**

Other Noteworthy Collections

Meliaceae

Aglaia puberulanthera C. DC., Nova Guinea 8: 1013 (1914).

Specimens examined. PAPUA NEW GUINEA. Morobe Province, NW of Waria River, Pao Creek near Yai Village, forest on alluvial terraces, 7°57′14″S, 147°35′55″E, 150m, 4 vi 1999 (fr.), *W. Takeuchi, R. Banka, B. Bau, J. Dobunaba, O. Gideon, R. Kiapranis, & M. Lovave* 13117 (L, LAE, NY); *ibid.*, 150–200m, 15 vi 1999 (fr., seedlings), *W. Takeuchi et al.* 13321 (A, BRIT, K, LAE); NW of Waria River, Wara Eya near Yai Village, alluvial forest, 7°57′S, 147°35′E, 150–200m, 15 vi 1999 (fr.), *W. Takeuchi et al.* 13370 (CANB, LAE).

The fruits were previously unknown (Pannell, 1992: 252–253) but are now described from the Waria River collections:

Infructescence from terminal or subapical axils, contracted, rachis (0–)4–25 × 1.5–3.0mm, inconspicuously bracteate, all axial surfaces stellately tomentulose; fruiting pedicel 1–5 × 1.5–2.5mm, distally articulated; calyx persisting, pentamerous, lobes c.1.0–1.5 × 1.5–2.5mm, obtuse, concave, hairy on exterior surfaces, glabrate within. *Fruits* indehiscent, globose to 23mm diam., or obovoid to 24 × 18mm, 1–4 per infructescence, pericarp thin-crustaceous when dried, fleshy in vivo, reddish brown to orange, completely covered by minutely stellate hair tufts, locules 1, monospermous. *Seed* filling the entire cavity, oblongoid, c.18 × 13mm (rehydrated), testa ± smooth, black; arillode entire, at first transparently tremelloid, later hyaline-orange when ripe.

Monimiaceae

Palmeria gracilis Perkins, Bot. Jahrb. Syst. 31: 745 (1902). **Fig. 4.**

Specimen examined. Papua New Guinea, Eastern Highlands Province, Crater Mt Wildlife Management Area, ridge above Hauneababo, natural growth premontane forest, 6°30′S, 145°03′E, 1600m, 22 vii 1998 (fr.), *W. Takeuchi 12431* (A, LAE).

A new description had been initially prepared from the Crater Mt specimen because the atypical appressed-hairy underleaves suggested an infraspecific novelty. But while striguliform hairs differ from the usual patent-setiform indument, this distinction in hair types is probably part of a continuum. Philipson (1986: 270) had noted earlier that *P. gracilis* is distinguished by curved bristles on the undersides of leaves. Populations with strigulose blades represent an extreme endpoint of the variation and appear to be concentrated in Eastern Highlands Province. Future study may justify formal status for indument varieties but for now such recognition is probably premature.

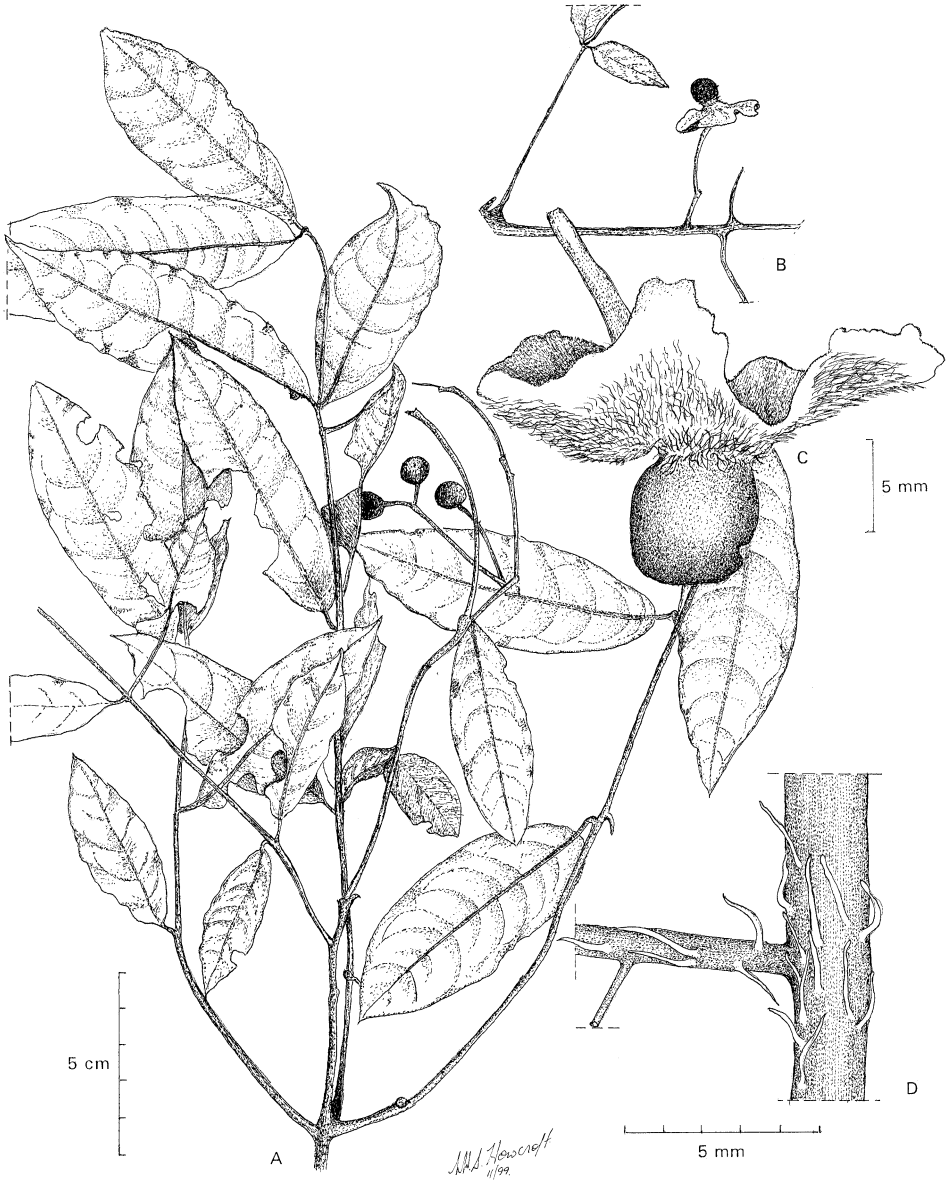

FIG. 4. *Palmeria gracilis*. A, fertile habit; B, infructescence; C, disintegrating fruit; D, strigose hairs on underside of leaf. Scale bars: A–B, 5cm; C, 5mm; D, 5mm. Drawn from *Takeuchi* 12431 by N. H. S. Howcroft.

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