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Novelties in *Stigmaphyllon* (Malpighiaceae)

CHRISTIANE ANDERSON

University of Michigan Herbarium, North University Building,
Ann Arbor, Michigan 48109-1057

ABSTRACT. Four new species are described in the neotropical genus *Stigmaphyllon* (Malpighiaceae): **S. adenophorum** from Costa Rica and **S. aberrans**, **S. florosum**, and **S. singulare** from South America. A new combination, **S. floribundum**, is made to provide a correct name in *Stigmaphyllon* for the West Indian species known by the illegitimate name *S. tomentosum* (Desf. ex DC) Nied. All species are illustrated.

Stigmaphyllon is a genus of ca. 100 species, most of which are vines with long-petiolate, cordate or deltate leaves. The yellow flowers are grouped into umbels or corymbs, which may be solitary but more commonly are arranged into dichasia, thyrses, or pseudoracemes (sensu Cuatrecasas 1958). In most species the androecium is heteromorphic. The stamens opposite the styles are usually the largest. Those opposite the lateral sepals commonly bear an enlarged connective and reduced locules; in a few species they are sterile. The genus is named for the flaps of tissue (the folioles) that are borne apically by the styles of the majority of the species. The posterior styles, which are always equal, each have one lateral foliole that curves around the anther of the juxtaposed stamen. The anterior style bears two lateral folioles, which are symmetrical. In species which lack folioles the stylar apices may be slightly expanded or drawn out into a spur or hook. The stigmas are always internal. The fruit is a schizocarp that splits into three samaras, each of which has a large dorsal wing. The nut may also bear small, lateral winglets or only spurs or ridges; sometimes it is smooth. While the nut is usually spheroid or ovoid, it is laterally flattened in some species.

During my study of this genus I have noted the four new species described here as well as the need to provide a new name for a West Indian species. All five species have some characteristics rarely or not at all encountered in other species of *Stigmaphyllon*. The most surprising species is *S. singulare* whose sepals are deciduous. This condition has not been previously reported in the Malpighiaceae.

Stigmaphyllon adenophorum C. Anderson, sp. nov. (fig. 1).—TYPE: Costa Rica, Puntarenas, Telecommunication Hill above the town of Golfito, ca. 500 m, 16 Jul 1977, *Wilbur et al. 22761* (holotype: MICH!; isotype: DUKE!).

Liana. Stipulae glandulosae. Laminae 8.5–12 cm longae, 4–4.7 cm latae, triangulares vel ovatae, supra glabratae vel glabrae, subtus pilos T-formes ferentes, margine eglandulosae. Inflorescentia thyrsiformis vel dichasialis constata ex corymbis congestis, floribus in quoque corymbo 16–25. Pedunculi 4–8 mm longi; pedicelli 5.2–7.5 mm longi. Bracteae 1.2–1.6 mm longae, triangulares; bracteolae 1.2–1.5 mm longae, ovatae, biglandulosae. Petala obovata, marginibus erosis. Stamina heteromorpha; antherae omnes fertiles, glabrae. Stylus anticus ca. 3.7 mm longus, erectus vel parum recurvatus, teres, apice 1.8 mm longo, utroque foliolo ca. 1.5 mm longo, ca. 0.8 mm lato, oblongo; styli postici ca. 4.2 mm longi, teretes, lyrati, apice ca. 2.5 mm longo, foliolo ca. 2.5 mm longo, ca. 2 mm lato, late elliptico.

Vine. Stems and inflorescence axes sericeous, glabrous in age. Each stipule forming a prominent gland, ca. 0.8 mm in diameter, with a minute membranous acute apex, deciduous. Stem leaves with petioles 2–4.3 cm long, sericeous to sparsely so, with a pair of prominent glands (each 1–1.5 mm in diameter) at the apex; laminas 8.5–12 cm long, 4–4.7 cm wide, triangular to ovate, apex acuminate (-aristate), base truncate or sometimes subattenuate, sericeous when young but soon glabrate to glabrous above, beset with T-shaped hairs below, margin eglandular. Inflorescence a small thyrse or dichasium of congested corymbs of 16–25 flowers each, leaves at the more proximal nodes like the stem leaves but smaller, at the more distal nodes much reduced. Peduncles 4–8 mm long,

terete; pedicels 5.2–7.5 mm long; peduncles subequal or equal to the pedicels, both sericeous. Bracts 1.2–1.6 mm long, 0.9–1.2 mm wide, triangular, apex obtuse, sericeous abaxially, eglandular, persistent; bracteoles 1.2–1.5 mm long, 0.9–1.1 mm wide, ovate, apex acute, densely sericeous abaxially, each bracteole bearing two prominent glands (each 0.6–0.8 mm in diameter), persistent. Sepals ca. 2 mm long, ca. 1.8 mm wide, apex obtuse to subacute; glands 2.4–2.8 mm long, 1.2–1.3 mm wide. Petals obovate, glabrous, margins erose, eglandular; claw of the anterior-lateral petals 2.2–2.5 mm long, limb ca. 11.5 mm long, ca. 10 mm wide, truncate at the base; claw of the posterior-lateral petals ca. 1.5 mm long, limb ca. 8–9 mm long, ca. 6–7 mm wide, attenuate at the base; claw of the posterior petal 2.5–3 mm long, constricted at the apex, limb ca. 7.5 mm long, ca. 6 mm wide. Stamens heteromorphic; anthers all fertile, glabrous. Stamen opposite anterior sepal: filament ca. 2.5 mm long, connective and locules equal, ca. 1.5 mm long, connective ca. 1 mm wide; stamens opposite anterior-lateral petals: filaments ca. 2 mm long, connectives and locules equal, 1.1–1.3 mm long, connective ca. 0.9 mm wide; stamens opposite anterior-lateral sepals: filaments ca. 3.5 mm long, connectives ca. 1 mm long and wide, locules 0.4–0.5 mm long; stamens opposite posterior-lateral petals: filaments ca. 4.5 mm long, connectives and locules equal, ca. 1.3 mm long, connectives ca. 1 mm wide; stamens opposite posterior-lateral sepals: filaments ca. 3 mm long, connectives and locules equal, ca. 1 mm long, or the connective up to 0.2 mm longer, connectives ca. 0.5 mm wide; stamen opposite posterior petal: filament ca. 2.5 mm long, connective and locules equal, ca. 1 mm long, connective ca. 0.6 mm wide. Anterior style ca. 3.7 mm long, shorter than the posterior two, terete, erect or slightly recurved, apex ca. 1.8 mm long, each foliole ca. 1.5 mm long, ca. 0.8 mm wide, oblong; posterior styles ca. 4.2 mm long, terete, lyrate, each style curved around the opposing stamen, apex ca. 2.5 mm long, folioles ca. 2.5 mm long, ca. 2 mm wide, broadly elliptical. Samara not seen.

Stigmaphyllon adenophorum is known only from the type collection. It is distinguished by its glandular stipules and by its biglandular bracteoles, an unusual condition in the genus. In other species of *Stigmaphyllon* the stipules are membranous, but in *S. adenophorum* they consist of a circular gland with a triangular membranous apex. The species with which *S. adenophorum* is most likely to be confused in Costa Rica and perhaps also in Panama is *S. lindenianum* Adr. Juss. The stipules and bracteoles of *S. lindenianum* are eglandular. Its leaves are sericeous below, while those of *S. adenophorum* are beset with T-shaped hairs.

Stigmaphyllon aberrans C. Anderson, sp. nov. (fig. 2).—TYPE: Peru, Junín, Yaupe, in a low forest, 1600 m, 26 Jun 1961, *Woytkowski 6335* (holotype: US!; isotypes: CAS!, F!, GH!, MO!, NY!, TEX!).

Liana. Laminae 8–15.5 cm longae, 7.3–16 cm latae, laminae majores cordatae vel reniformes, laminae minores ovatae vel ellipticae, supra glabrae, subtus pilos T-formes ferentes, marginibus glandulis capitatis munitae. Inflorescentia thyrsiformis vel dichasialis constata ex corymbis vel corymbo solitario, floribus in quoque corymbo 15–35. Pedunculi 12.6–19 mm longi; pedicelli 6.5–10 mm longi. Bracteae 1.2–1.8 mm longae, anguste triangulares; bracteolae 1–1.8 mm longae, anguste triangulares, una bracteola paribus uniglandulosa. Petala orbicularia, marginibus fimbriatis vel denticulatis. Stamina heteromorpha; antherae omnes fertiles, glabrae. Stylus anticus 2.4–2.8 mm longus, distaliter recurvatus, teres, apice pedaliformi, 1.2–1.3 mm longo, foliolis absentibus; styli postici 2.7–3 mm longi, distaliter expansi, incurvati, apice unco 1.3–1.4 mm longo, foliolis absentibus.

Vine. Stems and inflorescence axes beset with T-shaped hairs, stems glabrate to glabrous in age. Stipules 0.6–1 mm long, 0.5–0.7 mm wide, triangular, acuminate, glabrous. Stem leaves with petioles 3.5–11.2 cm long, beset with T-shaped hairs and/or sericeous, with a pair of prominent glands (each 1.2–2.2 mm in diameter) at or near the apex; laminas 8–15.5 cm long, 7.3–16 cm wide, the larger ones cordate to reniform, the smaller ones ovate to elliptical, apex mucronate or emarginate-mucronate, base cordate or sometimes subtruncate in smaller laminas, sparsely sericeous when young but soon glabrous above, beset with T-shaped hairs below, margin with scattered capitate glands. Inflorescence a small thyrse or dichasium of corymbs or a solitary corymb, each corymb of 15–35 flowers; leaves at the more proximal nodes

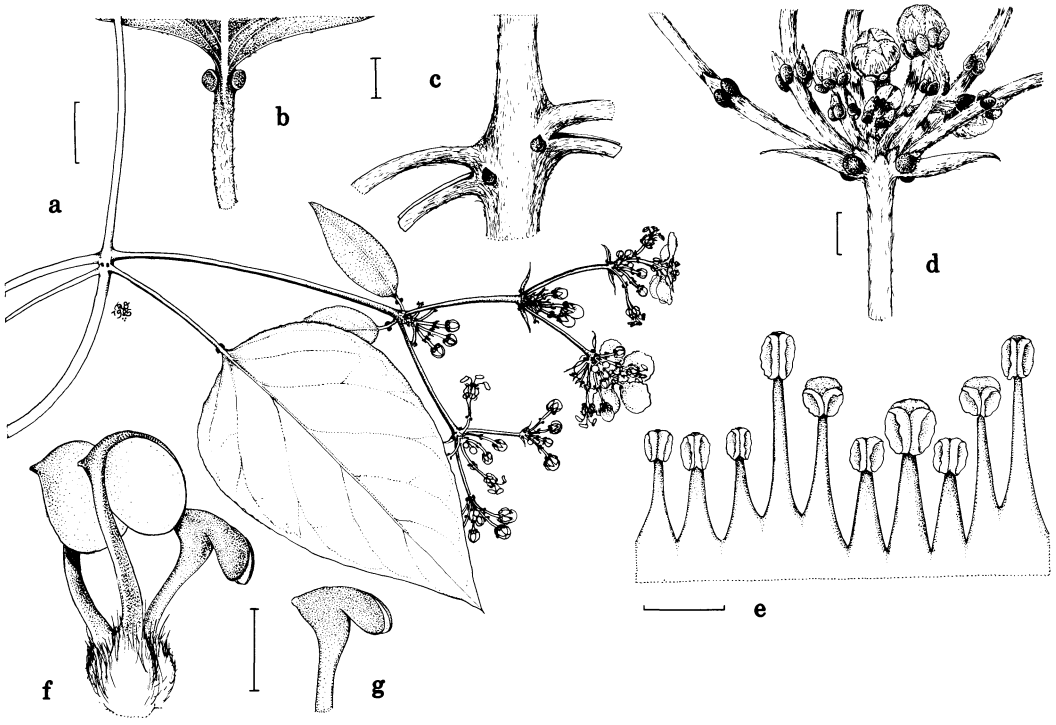

FIG. 1. *Stigmaphyllon adenophorum.* a. Flowering branch. b. Base of leaf. c. Section of stem with stipules. d. Base of umbel. e. Androecium. f. Gynoecium. g. Distal portion of anterior style. Scale: for a, bar = 1.5 cm; for b–g, bar = 2 mm. (Based on *Wilbur et al. 22761.*)

like the stem leaves but smaller with the glands borne usually at the middle to the base of the petiole, at the more distal nodes much reduced. Peduncles 12.6–19 mm long, terete; pedicels 6.5–10 mm long; peduncles (1½–)2–3 times as long as the pedicels, both beset with T-shaped hairs. Bracts 1.2–1.8 mm long, 0.5–0.7 mm wide, narrowly triangular, apex acute, densely sericeous abaxially, eglandular, persistent; bracteoles 1–1.8 mm long, 0.6–0.8 mm wide, narrowly triangular, apex acute, densely sericeous abaxially, with one prominent gland (0.5–0.6 mm in diameter) borne by one bracteole of each pair, persistent. Sepals ca. 2 mm long, 1.9–2.3 mm wide; glands 1.8–2 mm long, 0.9–1 mm wide. Petals orbicular, glabrous, margins fimbriate or fimbriate-dentate, fimbriae up to 0.3 mm long, eglandular; claw of the anterior-lateral petals 2.3–2.6 mm long, limb ca. 10–11 mm long and wide, cordate at the base; claw of the posterior-lateral petals 2–2.3 mm long, limb ca. 10–11 mm long and wide, attenuate to cordate at the base; claw of the posterior petal 3–3.5 mm long, slightly constricted at the apex, limb ca. 7–8 mm long and wide. Stamens heteromorphic; anthers all fertile, glabrous. Stamen opposite anterior sepal: filament ca. 2.3 mm long, connective 1.1–1.2 mm long, ca. 0.8 mm wide, locules 0.9–1 mm long; stamens opposite anterior-lateral petals: filaments 1.5–2 mm long, connectives and locules equal, 0.7–0.8 mm long, connectives 0.5–0.6 mm wide; stamens opposite anterior-lateral sepals: filaments 3.1–3.5 mm long, connectives ca. 1 mm long and wide, locules 0.6–0.8 mm long; stamens opposite posterior-lateral petals: filaments 2.6–3 mm long, connectives and locules equal, 0.8–1.1 mm long, connectives ca. 0.9 mm wide; stamens opposite posterior-lateral sepals: filaments 2.7–3.2 mm long, connectives 0.8–0.9 mm long, 0.6–0.7 mm wide, locules 0.4–0.6 mm long; stamen opposite posterior petal: filament 2.1–2.3 mm long, connective and locules equal, 0.7–0.8 mm long, connective 0.5–0.6 mm wide. Anterior style 2.4–2.8 mm long, a little shorter than the posterior two, terete, the distal ½ curved toward the an-

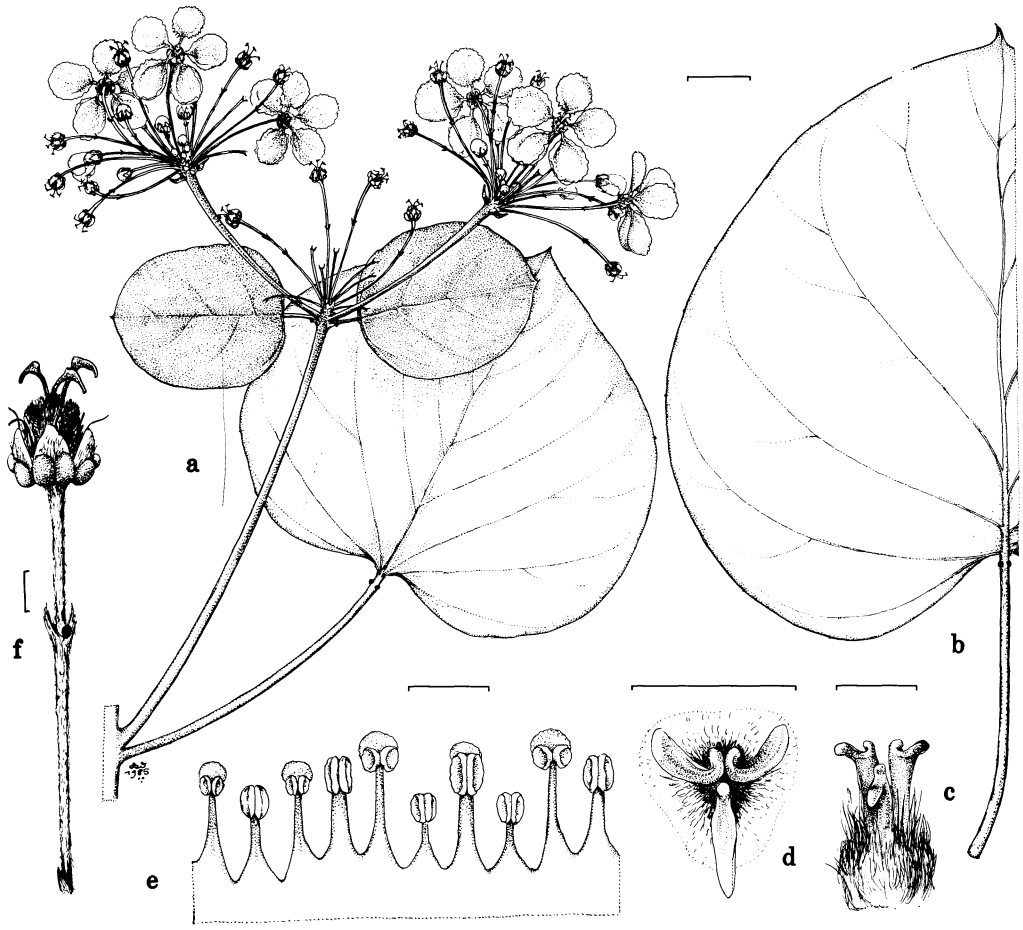

FIG. 2. *Stigmaphyllon aberrans.* a. Habit. b. Large leaf. c. Gynoecium, lateral view. d. Gynoecium, seen from above. e. Androecium. f. Old flower. Scale: for a, b, bar = 1.5 cm; for c–f, bar = 2 mm. (Based on: a, b, f—*Woytkowski 6335*; c, d, e—*Gentry et al. 40101.*)

terior sepal, apex pedaliform, 1.2–1.3 mm long, folioles absent; posterior styles 2.7–3 mm long, terete proximally, flared and incurved in the distal ½–¾, erect, apex a spur, 1.3–1.4 mm long, folioles absent. Mature samara not seen.

Additional specimen examined. PERU. **Pasco:** Oxapampa-San Ramón Road, ca. 15 km S of Oxapampa, 1900 m, 7 Feb 1983, *Gentry et al. 40101* (MICH, MO).

Stigmaphyllon aberrans is one of the species whose styles lack folioles. It differs from all other species in the genus by its unique posterior styles, which are flared toward the apex and incurved. One bracteole of each pair bears a single prominent gland, a highly unusual condition in *Stigmaphyllon* though common in diverse genera in the Malpighiaceae. Most species of *Stigmaphyllon* have eglandular bracteoles. *Stigmaphyllon aberrans* might be confused with *S. bogotense* Tr. & Pl. and *S. florosum*, which also have efoliolate styles; their bracteoles are eglandular. Also, the stamens of *S. bogotense* are uniform rather than heteromorphic.

Stigmaphyllon florosum C. Anderson, sp. nov. (fig. 3).—TYPE: Peru, Loreto, Prov. Coronel Portillo, 15 km W of Pucallpa on the road to Tingo María, roadside, 175 m, 24 Jul 1964, *Hutchison et al. 6032* (holotype: MICH!; isotypes: F!, GH!, M!, MO!, NY!).

Liana. Laminae 6–10 cm longae, 6–17 cm latae, cordatae vel orbiculares, supra glabratae,

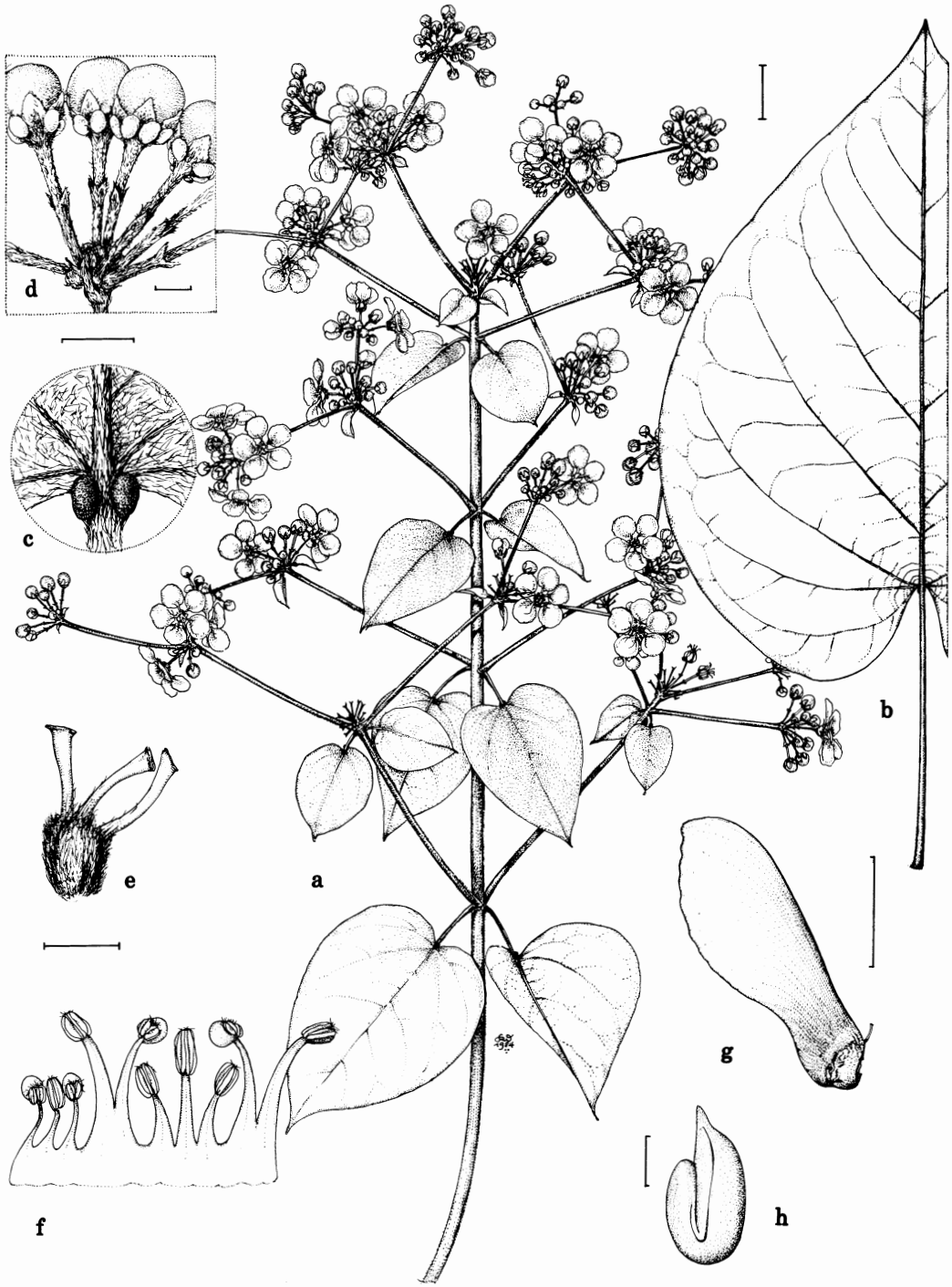

FIG. 3. *Stigmaphyllon florosum*. a. Habit. b. Large leaf. c. Base of leaf. d. Detail of umbel. e. Gynoecium. f. Androecium. g. Samara. h. Embryo. Scale: for a, b, g, bar = 1.5 cm; for c–f, h, bar = 2 mm. (Based on: a, d, e, f—*Hutchison et al. 6032*; b, c—*Cavalcante 3284*; g, h—*Woytkowski 5911*.)

subtus tomentosae vel pilos T-formes ferentes, margine glandulis filiformibus vel capitatis munitae. Inflorescentia forma thyrsi grandis vel interdum pseudoracemi constata ex umbellis vel corymbis vel pseudoracemis, floribus in quoque umbella (vel corymbo vel pseudoracemo) (16–)20–ca. 50. Pedunculi 3.3–12.5 mm longi; pedicelli 3.2–8.5 mm longi. Bracteae 1–1.9 mm longae, anguste triangulares; bracteolae 0.9–1.5 mm longae, oblongae; bracteae bracteolaeque eglandulosae. Petala orbicularia vel late obovata, marginibus fimbriatis vel denticulatis. Stamina heteromorpha; antherae omnes fertiles, pubescentes. Stylus anticus 2.2–2.7 mm longus, erectus, distaliter lateraliter complanatus, apice 0.9–1.2 mm longo, unco 0.2–0.3 mm longo, foliolis absentibus; styli postici 2.8–3.8 mm longi, recurvati, distaliter lateraliter complanati, apice 0.5–0.7 mm longo, foliolis absentibus, labio laterali 0.1–0.2 mm lato, unco 0.2–0.3 mm longo.

Vine. Stem and inflorescence axes finely hispidulous, sparsely so in age. Stipules 0.5–1.2 mm long, 0.6–1.1 mm wide, triangular, acuminate, glabrous adaxially, sparsely sericeous abaxially. Stem leaves with petioles 2.5–9 cm long, densely hispidulous, less so in older leaves, with a pair of prominent glands (each 1.6–3.2 mm in diameter) at the apex or in the distal ½; laminas 6–18 cm long, 6–17 cm wide, cordate to orbicular, apex acuminate, sericeous when young but soon glabrate above, beset with T-shaped hairs below, margin with filiform glands up to 1.5 mm long (especially near the apex) and with scattered capitate glands. Inflorescence a thyrse or sometimes a secondary pseudoraceme of umbels, congested corymbs, or pseudoracemes of (16–)20–ca. 50 flowers each; leaves at the more proximal nodes like the stem leaves but smaller, those at the more distal nodes much reduced and commonly with filiform glands at the apex and along the margin. Peduncles 3.3–12.5 mm long, terete; pedicels 3.2–8.5 mm long; peduncles up to 2½ times as long as or subequal to the pedicels, both beset with T-shaped hairs. Bracts 1–1.9 mm long, 0.6–1.2 mm wide, narrowly triangular, apex acute, sericeous and beset with T-shaped hairs abaxially, eglandular, deciduous; bracteoles 0.9–1.5 mm long, 0.5–1 mm wide, oblong, apex obtuse, sericeous and beset with T-shaped hairs, eglandular, persistent. Sepals 1.6–2.4 mm long, 1.5–2.1 mm wide, apex obtuse or subacute; glands 1.1–1.6 mm long, (0.6–)0.7–1.2 mm wide. Lateral petals orbicular to broadly obovate, posterior petal elliptical to broadly obovate to orbicular, margins fimbriate and/or denticulate, fimbriae and teeth up to 0.4 mm long, eglandular. Stamens heteromorphic; anthers all fertile, with scattered hairs at the apex and usually along the locules. Stamen opposite anterior sepal: filament 2.2–3 mm long, connectives and locules equal, 1.2–1.7 mm long, connective 0.8–1(–1.2) mm wide; stamens opposite anterior-lateral petals: filaments 1.5–2.1 mm long, connectives and locules equal, 0.8–1.2 mm long, connectives 0.6–0.8 mm wide; stamens opposite anterior-lateral sepals: filaments 3–3.6 mm long, connectives 1.2–1.3 mm long, 1–1.3 mm wide, locules 0.2–0.6(–1) mm long; stamens opposite posterior-lateral petals: filaments 2.5–3.2 mm long, connectives and locules equal, 0.8–1 mm long, connectives 0.7–0.9 mm wide; stamens opposite posterior-lateral sepals: filaments 1.8–2.8 mm long, connectives usually slightly but sometimes greatly exceeding the locules, 0.6–1 mm long and wide, locules commonly unequal or subequal, (0.2–)0.4–0.6(–0.8) mm long; stamen opposite posterior petal: filament 2–2.3 mm long, connective and locules equal, 0.7–1 mm long, connective 0.5–0.7 mm wide. Anterior style 2.2–2.7 mm long, shorter than the posterior two, terete proximally, laterally flattened in the distal ⅓, erect, apex 0.9–1.2 mm long, abaxially extended into a short spur (0.2–0.3 mm long), folioles absent; posterior styles 2.8–3.8 mm long, terete proximally, laterally flattened in the distal 1.2–1.3, recurved toward the posterior-lateral sepals, apex 0.5–0.7 mm long, laterally slightly recurved and forming a lip 0.1–0.2 mm wide, abaxially extended into a short spur (0.2–0.3 mm long), folioles absent. Samara with the dorsal wing ca. 4 cm long, ca. 1.5 mm wide, lateral wings absent but the nut bearing a ridge or also with 1–2 spurs or winglets projecting from the ridge, smaller spurs/winglets ca. 0.8 mm high, ca. 1.7 mm wide, larger winglets 2.5–4 mm high, 1.3–1.5 mm wide, entire or dentate; nut 6.7–7.5 mm high, 3.5–3.8 mm in diameter; areole 3–3.5 mm long, 2.2–2.7 mm wide, concave; carpophore 2.3–3 mm long; seed 6.8–7 mm long; embryo with the outer cotyledon ca. 9.5 mm long, 3–3.5 mm wide, the distal ⅖ folded over the inner

cotyledon, inner cotyledon 3.5–5.7 mm long, 2.5–3 mm wide, straight or folded at the distal ⅓.

Phenology. Collected in flower and fruit from July to September; one flowering collection from Ecuador in January.

Distribution. In forests, secondary growth, thickets, and along roadsides; from western Ecuador and eastern Peru to the Yungas region of Bolivia, and Acre and Rondônia, Brazil; 30 to 1120 m.

Representative specimens examined. BOLIVIA. **Beni:** prov. Vaca Diez, 18.4 km E of Riberalta, 11°05'S, 65°50'W, *Solomon 6099* (MO). **La Paz:** prov. S. Yungas, Basin of Río Bopi, San Bartolomé, near Calisaya, *Krukoff 10056* (F, G, MICH, MO, NY, S, U); Charopampe, *Williams 697* (NY, US).

BRAZIL. **Acre:** Hwy Abuña to Rio Branco, KM 242–246, vic. of Campinas, *Forero et al. 6401* (INPA, MG, MICH, NY). **Rondônia:** Porto Velho to Cuiabá hwy, 10 km S of Ariquemes, *Forero & Wrigley 7056* (INPA, MG, MICH, NY).

ECUADOR. **Napo:** Auca Oil Field, 60 km S of Coca, *Besse et al. 59* (QCA, SEL).

PERU. **Huánuco:** Prov. Huánuco, dist. Churubamba, Hacienda San Carlos, trail Exito to Derrepente, *Mexia 8123* (F, GH, MO, NY, S, U, US). **Junín:** Satipo, *Woytkowski 5918* (GH, MO, US). **Loreto:** Yurimaguas, lower Río Huallaga, *Killip & Smith 28054* (F, NY, US); Ucayali, Orellana, Río Ucayali, road to east, *McDaniel 14131* (F, MO, NY, RB). **San Martín:** Prov. Saposoa, Mishquiyaca, cerca a Saposoa, *Ferreyra 4632* (MICH).

Specimens of *S. florosum* are commonly identified as *S. bogotense*, another species with efoliolate styles. *Stigmaphyllon bogotense* is usually encountered at higher elevations, up to 2800 m, while *S. florosum* is a lowland species. They differ most strikingly in the structure of their androecia, posterior styles, and embryos. The stamens of *S. florosum* are heteromorphic and have pubescent anthers. In *S. bogotense* the anthers are glabrous; none of them has an enlarged connective. The posterior styles of *S. florosum* bear a narrow, lateral lip, a structure not found in *S. bogotense*. The embryos of *S. florosum* are of the type most common in the genus, i.e., ellipsoid-ovoid with a large outer cotyledon folded over a smaller, inner one (see fig. 3h). In *S. bogotense* the embryo is spheroid and its cotyledons are intricately folded and convoluted, so that the embryo has a brain-like appearance.

For separation from *S. aberrans*, with which *S. florosum* might also be confused, see that species.

Stigmaphyllon singulare C. Anderson, sp. nov. (fig. 4).—TYPE: Venezuela, Táchira, Near La Fría, secondary forest along small river, ca. 150 m, 22 Dec 1965, *Breteler 4923* (holotype: NY!; isotypes: MER!, MO!, U!, VEN!, WAG!).

Liana. Laminae 6.5–15 cm longae, 5.3–12.5 cm latae, cordatae, supra glabratae, subtus tomentosae vel pilos T-formes ferentes, margine glandulis capitatis munitae. Inflorescentia thyrsiformis vel dichasialis constata ex umbellis vel umbella solitaria, floribus quoque umbella (12–)16–21. Pedunculi 5–5.7 mm longi; pedicelli 4.2–6.5 mm longi. Bracteae 1.9–2.2 mm longae, anguste triangulares; bracteolae 1.3–1.7 mm longae, triangulares, biglandulosae. Petala lateralia orbiculares, petalum posticum late obovatum, omnes abaxialiter sericea, marginibus erosis. Stamina heteromorpha; antherae omnes fertiles, pubescentes. Stylus anticus ca. 3.2 mm longus, erectus, distaliter lateraliter complanatus, apice 1.8–2 mm longo, utroque foliola ca. 1 mm longo, 0.7–0.8 mm lato, elliptico vel parabolico; styli postici ca. 3.5 mm longi, parum lyrati, apice ca. 1.2 mm longo, foliolo ca. 1.5 mm longo, ca. 0.9 lato, oblongo.

Vine. Stems and inflorescence axes sericeous. Stipules 0.3–0.5 mm long, 0.4–0.6 mm wide, triangular, acuminate, glabrous. Stem leaves with petioles 2–6.5 cm long, densely sericeous, with a pair of prominent glands (each 1.6–2 mm in diameter) at the apex; laminas 6.5–15 cm long, 5.3–12.5 cm wide, cordate, apex acuminate, sericeous when young but soon glabrate above with the hairs restricted to the veins, beset with T-shaped hairs to tomentose below, margin with scattered capitate glands. Inflorescence a thyrse or dichasium of umbels or a solitary umbel, each umbel of (12–)16–21 flowers; leaves at the more proximal nodes like the stem leaves but smaller, at the more distal nodes much reduced, all with capitate glands along the margin of the proximal ⅔, with filiform glands up to 0.8 mm long along the distal ⅓. Peduncles 5–7.5 mm long; pedicels 4.2–6.5 mm long, inflated; peduncles subequal or equal to the pedicels, both densely sericeous. Bracts 1.9–2.2 mm long, 1–1.3 mm wide, narrowly triangular, apex acute,

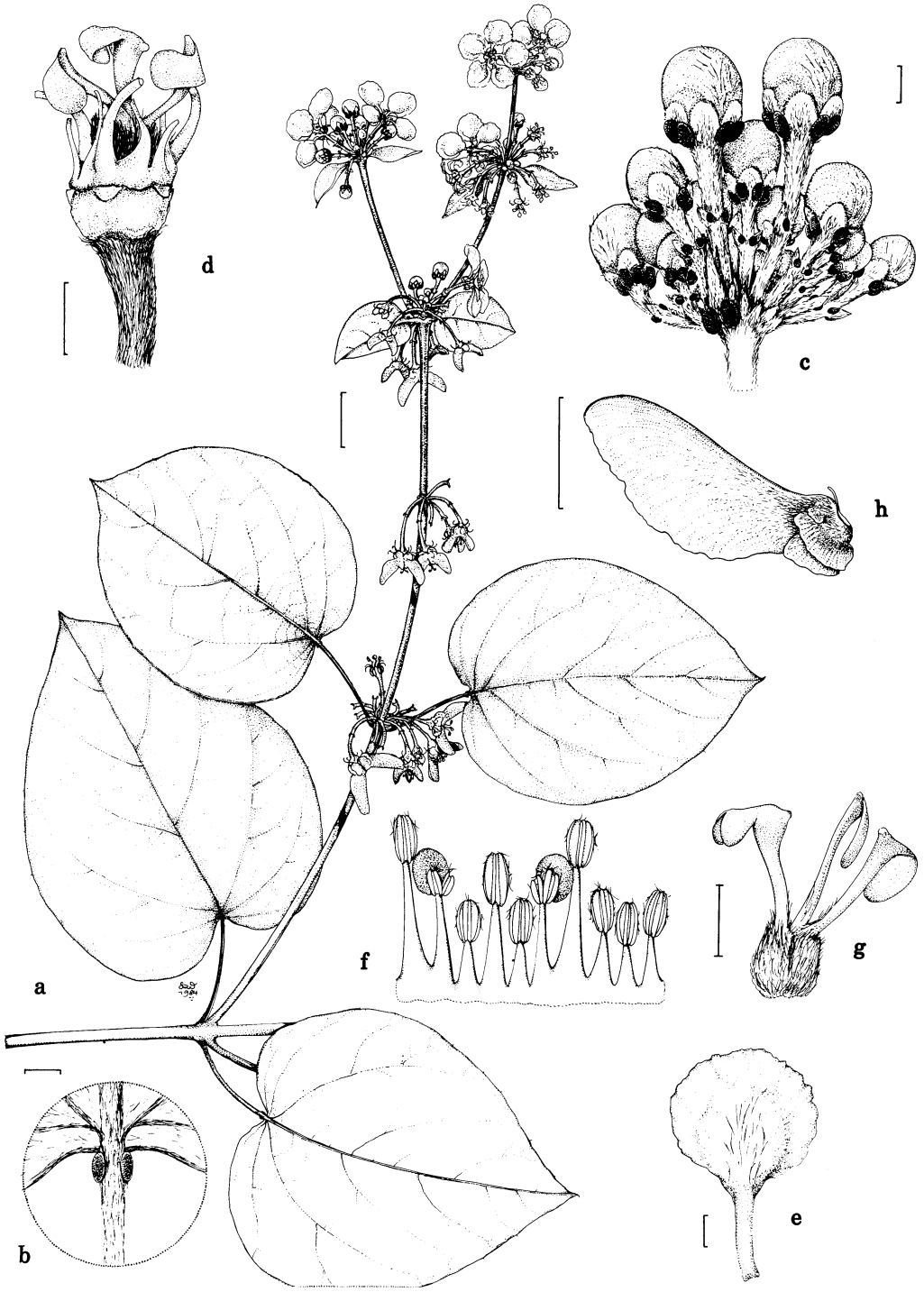

FIG. 4. *Stigmaphyllon singulare*. a. Habit. b. Base of leaf. c. Young umbel. d. Old flower. e. Petal. f. Androecium. g. Gynoecium. h. Samara. Scale: for a, h, bar = 1.5 cm; for b–g, bar = 2 mm. (Based on: a–g—*Breteler 4923*; h—*Bro. Ginés 69*.)

densely sericeous abaxially, eglandular, deciduous; bracteoles 1.3–1.7 mm long, 1–1.3 mm wide, triangular, apex acute, sericeous abaxially, each bracteole with a pair of prominent glands (each 0.5–0.6 mm in diameter), deciduous. Sepals ca. 2 mm long and wide, deciduous, apex acute to obtuse; glands 2.3–2.5 mm long, 0.8–1 mm wide. Petals orbicular or broadly obovate, glabrous adaxially, sericeous at the center and base abaxially, margins erose, eglandular; claw of the anterior-lateral petals ca. 2 mm long, limb ca. 10 mm long and wide, attenuate at the base; claw of the posterior-lateral petals ca. 1.8 mm long, limb ca. 9 mm long and wide, attenuate-decurrent at the base; claw of the posterior petal ca. 2.7 mm long, constricted at the apex, limb ca. 8.5–9 mm long and wide. Stamens heteromorphic; anthers all fertile, with scattered hairs at the apex and usually along the locules. Stamen opposite anterior sepal: filament ca. 3 mm long, connective ca. 1.5 mm long, ca. 0.8 mm wide, locules equal to or slightly exceeding connective; stamens opposite anterior-lateral petals: filaments ca. 2 mm long, connectives and locules equal, ca. 1 mm long, connectives ca. 0.5 mm wide; stamens opposite anterior-lateral sepals: filaments ca. 3.3 mm long, connectives 0.8–1 mm long and wide, locules ca. 0.7 mm long; stamens opposite posterior-lateral petals: filaments ca. 4 mm long, connective and locule equal, ca. 1.5 mm long, connective ca. 1 mm wide; stamens opposite posterior-lateral sepals: filaments ca. 2.4 mm long, connectives and locules equal, ca. 1.1 mm long, connectives ca. 0.6 mm wide; stamen opposite posterior petal: filament ca. 1.8 mm long, connectives and locules equal, ca. 1.1 mm long, connectives ca. 0.8 mm wide. Anterior style ca. 3.2 mm long, a little shorter than the posterior two, terete proximally, laterally flattened distally, erect, apex 1.8–2 mm long, each foliole ca. 1 mm long, 0.7–0.8 mm wide, elliptical to parabolic; posterior styles ca. 3.5 mm long, weakly lyrate each style curved around the opposing stamen, apex ca. 1.2 mm long, foliole ca. 1.5 mm long, 0.9 mm wide, oblong. Samara with the dorsal wing ca. 4 cm long, 1.4–1.6 mm wide, lateral wings 2–3 on each side, the most proximal the least dissected, the larger winglets 6.5–9 mm high, 2–2.5 mm wide, falcate, the smaller winglets 1.2–6.5 mm high, 1–3 mm wide, falcate, rectangular, square, or parabolic, erose; carpophore 3.5–4 mm long; mature seeds not seen.

Additional specimens examined. COLOMBIA. **Norte de Santander:** Ocaña, *Schlim 251* (BR, G, P).

VENEZUELA. **Zulia:** Along Río Negro, W of Machiques, at base of Sierra Perijá, *Bro. Ginés 69* (US).

Stigmaphyllon singulare differs from all other described species of Malpighiaceae in its deciduous sepals and from most species of *Stigmaphyllon* in its biglandular bracteoles, inflated pedicels, and pubescent petals. *Stigmaphyllon humboldtianum* (DC) Adr. Juss., with which *S. singulare* might be confused, has eglandular bracteoles, terete pedicels, glabrous petals, and, of course, persistent sepals.

Stigmaphyllon floribundum (DC) C. Anderson, comb. nov. (fig. 5).—*Banisteria floribunda* DC, Prodr. 1:589. 1824.—TYPE: Puerto Rico, *Bertero s.n.* (holotype: TO, photo: MICH!).

Banisteria tomentosa Desf. ex DC, Prodr. 1:589. 1824.—*Stigmaphyllon tomentosum* (Desf. ex DC) Nied., Ind. Lect. Lyc. Brunsberg, p. hiem. 1899–1900:5. 1899, non *Stigmaphyllon tomentosum* Adr. Juss., 1832.—TYPE: fragments taken from living plants at the Botanical Garden in Paris (holotype: G-DC, microfiche: MICH!).

DeCandolle (1824) described this species twice in the first volume of the *Prodromus*. On page 589 he described *Banisteria floribunda* (no. 15), based on a Bertero collection from Puerto Rico that he had seen in Balbis's herbarium (now at TO). On the same page he used the name *Banisteria tomentosa* (no. 17), which Desfontaines had given to plants growing at the Botanical Garden in Paris. The type of *B. tomentosa*, fragments taken from the living collections at Paris, is housed in the Prodromus herbarium (G-DC). In the first part of his monograph of *Stigmaphyllon*, Niedenzu (1899) pointed out that Cavanilles (1790), Desfontaines (1829), and Adr. de Jussieu (1840, 1843) had mixed this species with another West Indian endemic, *S. emarginatum* (Cav.) Adr. Juss. He made the combination *Stigmaphyllon tomentosum* but created an illegitimate name; *S. tomentosum* had already been used by Adr. de Jussieu in 1832 for a South American species. Niedenzu never saw the type of *B. floribunda*. In his treatment of *Banisteria* [=*Banisteriopsis* Rob. in Small] for *Pflanzenreich* (1928), he lists DeCandolle's brief description in the section

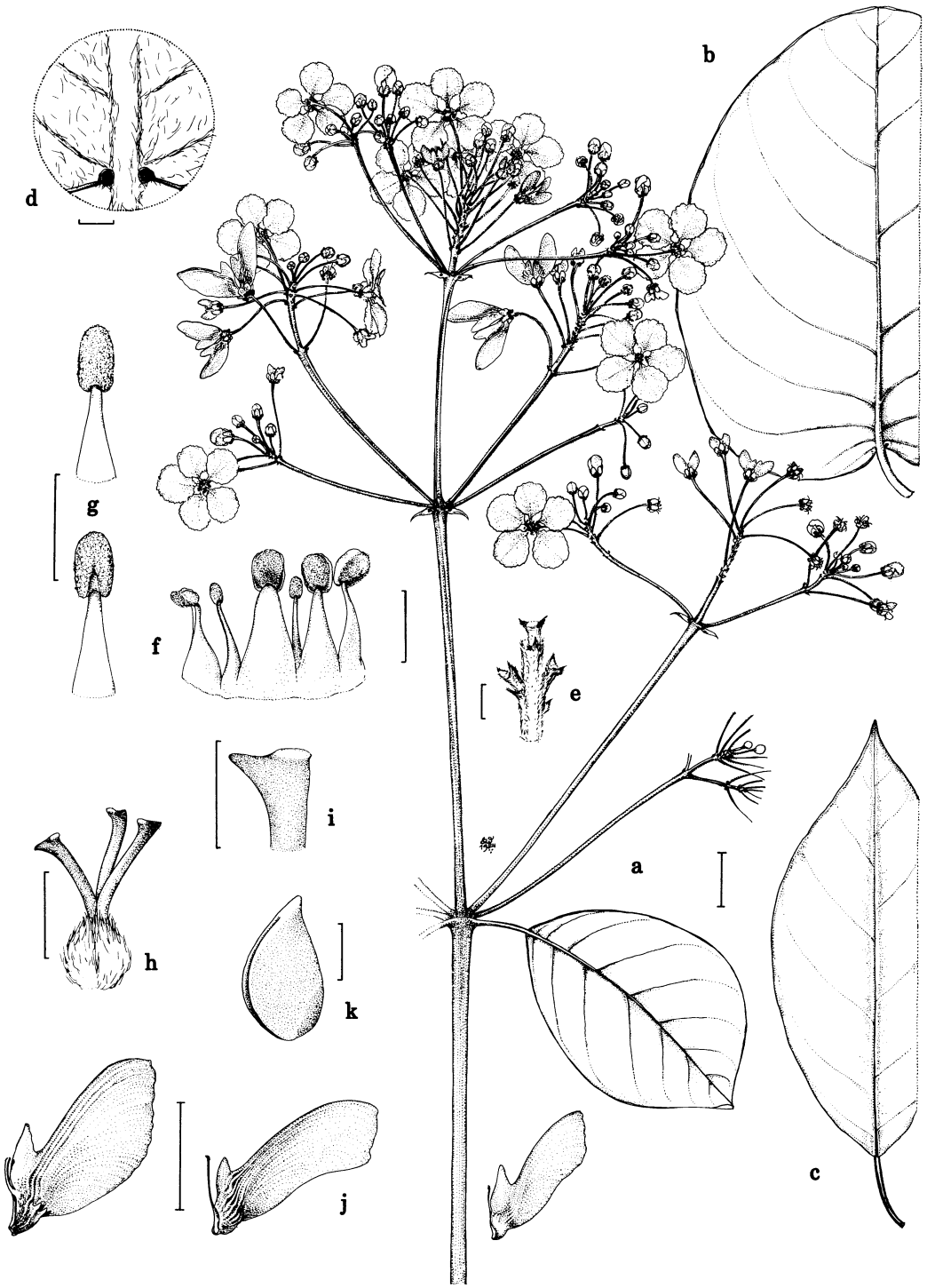

FIG. 5. *Stigmaphyllon floribundum*. a. Habit. b, c. Large leaves. d. Base of leaf. e. Section of inflorescence axis with peduncles. f. Androecium. g. (above) Abaxial and (below) adaxial view of posterior-lateral stamen. h. Gynoecium. i. Apex of anterior style. j. Samaras. k. Embryo. Scale: for a–c, j, bar = 1.5 cm; for d–f, h, k, bar = 2 mm, for g, i, bar = 1 mm. (Based on: a, e—*Colwell 577*; b, d—*Britton 9871*; c—*Toro 3*; f, g—*Liogier 33781*; h, i—*Tredwell 751*; j—*Richard s.n., Smith 10579, Sintensis 6716*; k—*Sintensis 6716*.)

"Species incertae mihi invisae." In response to my inquiries, Giuliana Forneris of the Istituto ed Orto Botanica, Università di Torino, very kindly provided photographs and information about the Bertero specimen in the Balbis herbarium. The type of *B. floribunda* belongs to this species, and thus DeCandolle's epithet must be taken up in *Stigmaphyllon*.

Stigmaphyllon floribundum is known only from Puerto Rico, Virgin Gorda, and St. Jan. It is characterized by large leaves and inflorescences. The laminas are up to ca. 20 cm long and ca. 15 cm wide, elliptical or oblong to sometimes orbicular or lanceolate, and are commonly golden sericeous-tomentose below. The indumentum detaches in patches, so that older leaves are often glabrate to glabrous. The flowers are usually arranged in thyrses composed of congested or interrupted pseudoracemes or corymbs or sometimes of umbels of (10–)20–25(–45) flowers each. The sympatric *S. emarginatum* also bears the flowers in pseudoracemes or umbels or rarely in corymbs, but these are usually solitary or sometimes grouped into dichasia. Its leaves, bewilderingly variable in shape, are not as large as those of *S. floribundum* and never tomentose; at maturity they are glabrous or sometimes sericeous below. The two species are readily separated by the following couplet:

Peduncles up to 1.5(–4) mm long, much less than ⅓ as long as the pedicels; stamens opposite the lateral petals sterile or rarely those opposite the anterior-lateral petals with 1 or 2 reduced locules; posterior styles terete proximally, flattened distally, the distal ½ curved toward the posterior-lateral sepals ..... *S. floribundum*

Peduncles 1.3–25 mm long, ⅓ as long as to equalling the pedicels; stamens all fertile, those opposite the lateral sepals with somewhat reduced locules; posterior styles canaliculate-complicate, the distal ½ usually slightly recurved ..... *S. emarginatum*

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