

**Studies on the flora of the Guianas. 21****Mabea species (Euphorbiaceae) of the Guianas – a precursor**

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**ABSTRACT**

The nine species of *Mabea*, some with subspecies, recognized for the Guianas are keyed out and listed with their synonyms and distributions. Several of these species are lectotypified. One new species is described: *M. angularis* den Hollander, while four new combinations are made: *M. montana* Müller-Argoviensis subsp. *biglandulosa* (Müller-Argoviensis) den Hollander, *M. montana* Müller-Argoviensis subsp. *lucida* (Pax & K. Hoffmann) den Hollander, *M. setulosa* (Müller-Argoviensis) den Hollander, and *M. speciosa* Müller-Argoviensis subsp. *concolor* (Müller-Argoviensis) den Hollander.

This study was conducted in behalf of the *Flora of the Guianas*. Due to the complexity of the taxonomy and the nomenclature of some of the taxa, the study had to be extended outside the Guianan region. This led to lectotypifications and the creation of new combinations of species with distributions continuing outside the scope of the *Flora of the Guianas*.

**1. *Mabea angularis* den Hollander spec. nov. (Fig. I:1-3).**

Arbor ad c. 20 m alta. Petiolus c. 0.8–2 cm longus. Lamina oblonga, c. 8.5–25 cm longa et 3.5–8.5 cm lata, venis secundariis utrinque 13–16 e costa sub angulo c. 45°–60° exeuntibus. Fructus ad 3 cm in diametro. Flores ignoti.

Type: Brazil, Matto Grosso, Tabajara, Upper Machado River Region, *Krukoff 1502* (holotype U; isotype NY).

Tree up to ca. 20 m high and up to ca. 13 cm in diam.. Branchlets glabrous, sparsely lenticellate. Latex white. Ultimate branchlets ca. 2–5 mm in diam. Internodes up to ca. 4.5 cm long. Stipules caducous. Leaves alternate. Petiole

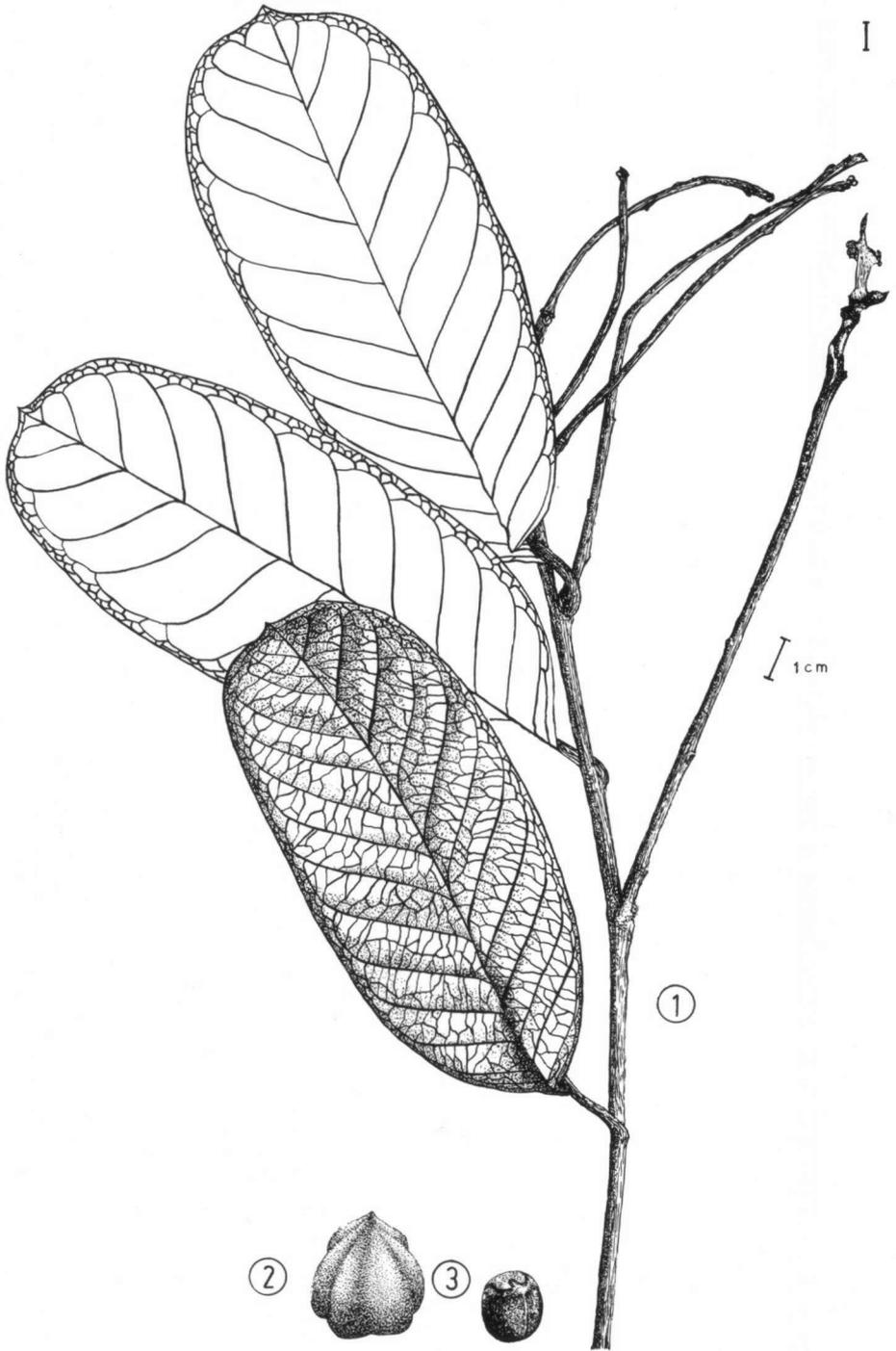


Fig. 1. *Mabea angularis* den Hollander. 1: Leafy twig after dehiscence of fruits. 2: Fruit. 3: Seed. (Krukoff 1502).

0.8–2 cm long, 0.2–0.4 cm thick. Blade coriaceous, oblong to narrowly oblong, ca. 8.5–25 × 3.5–8.5 cm. Margin entire, sometimes slightly undulate, sometimes slightly revolute. Marginal glands below few, mainly at apex and base; the basal ones larger. Apex short acuminate, base rounded to obtuse. Surface above shiny, glabrous; surface below dull, with short ramified, dark reddish hairs and mostly with a more or less distinct whitish arachnoid covering. Venation brochidodromous. Primary vein above prominent to impressed, below prominent. Secondary veins ca. 13–16 pair, less prominent on both sides, slightly bowed, forming an angle of ca. 45°–60° with the primary vein. Tertiary venation scalariform, weakly prominent on both sides.

Inflorescence and flowers unknown. Inflorescence-bearing branches starting with an annular scar, up to ca. 17 cm long, not or sparsely branched. Fruiting pedicel up to ca. 2.5 cm long. Fruit a woody, velutinous, mucronated, ellipsoid, schizocarp capsule, splitting into 3, ventrally-dehiscing cocci, each containing one carunculate, ovoid seed. Fruit ca. 2.5–3 × 1.8 cm. Seed ca. 1–1.5 × 0.7–1 cm.

Additional collections: Guyana, Mazaruni River, Isseneru Creek, *Fanshawe 2861* = *F.D. 6008* (K). Brazil, Amazonas, Alto Igarapé, Jandiutuba, *Fróes 23879* (U); São Paulo de Olivença, Basin of Creek Belem, *Krukoff 8785* (U); Rondônia, Porto Velho, *N.T. Silva 345* (U); Matto Grosso, Tabajara, Upper Machado River Region, *Krukoff 1367* (U).

2. ***Mabea montana*** Müller-Argoviensis in De Candolle, *Prod.* 15(2): 1151. 1866.

Lectotype here designated: Colombia, Santander, Piedecuesta, *Schlim 1132* (G).

a. subsp. ***montana***

Blade below without distinctly larger basilar glands. Glands in staminate part of inflorescence touching or very close to rachis. Pedicels of staminate flowers often partly fused; umbels 3–6-flowered.

Distribution: Panama; Venezuela (Zulia, Aragua, Tachira); Guyana; Colombia (Santander); Brazil (Amazonas).

b. subsp. ***biglandulosa*** (Müller-Argoviensis) den Hollander stat. et comb. nov.

Based on *Mabea biglandulosa* Müller-Argoviensis in De Candolle, *Prod.* 15(2): 1151. 1866.

Type: Guyana, Mt. Roraima, *Rob. Schomburgk 731* (P).

– *Mabea piriri* Aublet var. *laevigata* Müller-Argoviensis in De Candolle, *Prod.* 15(2): 1150. 1866.

Type: Guyana, Mt. Roraima, *Rich. Schomburgk 1109* (K).

– *Mabea occidentalis* Benth var. *laevigata* (Müller-Argoviensis)

Müller-Argoviensis in Martius, *Fl. Bras.* 11(2): 522. 1874.

Lectotype here designated: Guyana, Mt. Roraima, *Rich. Schomburgk 1109* (K).

Blade below usually with 2 elliptic basilaminar glands ca.  $0.25-3 \times 1.3-1.5$  mm, distinctly larger than the other laminar glands. Glands in staminate part of inflorescence closely appressed to rachis. Pedicels of staminate flowers free; umbels usually 3-flowered.

Distribution: Guyana; Brazil (Amazonas).

c. subsp. **lucida** (Pax & Hoffmann) den Hollander stat. et comb nov.

Based on *Mabea lucida* Pax & Hoffmann in Engler, Pflanzenreich IV.147.V: 36. 1912.

Lectotype here designated: Venezuela, Tacarigua Valley, *Karsten s.n.* (W).  
– *Mabea costata* Pax & Hoffmann in Engler, Pflanzenreich IV. 147. VII: 419. 1914.

Type: Guyana, without locality, *Jenman 7545(K)*.

Blade below without distinctly larger basilaminar glands. Glands in staminate part of inflorescence appressed to rachis. Pedicels of staminate flowers free; umbels usually 3-flowered.

Distribution: Colombia; Venezuela (Zulia, Carabobo, Sucre, Bolivar); Guyana.

3. **Mabea nitida** Benthham in Hooker's J. Bot. Kew Gard. Misc. 6: 367. 1854.

Lectotype here designated: Brazil, Amazonas, Manaus, *Spruce 1118 (M)*.

– *Mabea muricata* Jablonski in Mem. New York Bot. Gard. 17(1): 169. 1967.

Type: Venezuela, Amazonas, Serrania Yutaje, occasional on banks of Cano Atabapure, Rios Manapiare and Ventuari, *Maguire et al. 35010 (NY)*.

Distribution: Colombia (Vichada, Meta, Vaupés, Amazonas); Venezuela (Bolívar, Amazonas); Peru (Loreto); Brazil (Amazonas, Acre, Pará); Bolivia.

**Mabea occidentalis** Benthham in Hooker's J. Bot. Kew Gard. Misc. 6: 364. 1854.

Lectotype here designated: Mexico, Icapa, Hacienda del Azufre, *Linden 886 (G)*.

Distribution: Probably from Mexico to northern South America; further study of this species is necessary.

Lectotypification of *M. occidentalis* Benthham was necessary to stabilize the names of several other *Mabea* taxa within the area of the *Flora of the Guianas*.

4. **Mabea piriri** Aublet, Hist. Pl. Guiane 2: 867; 4: pl. 334, fig. 1. 1775.

Type: French Guiana without locality, *Aublet s.n.* (BM).

Distribution: Colombia (Meta); Venezuela (Delta Amacuro, Bolivar); Guyana; Suriname; French Guiana; Brazil (Pará, Maranhão).

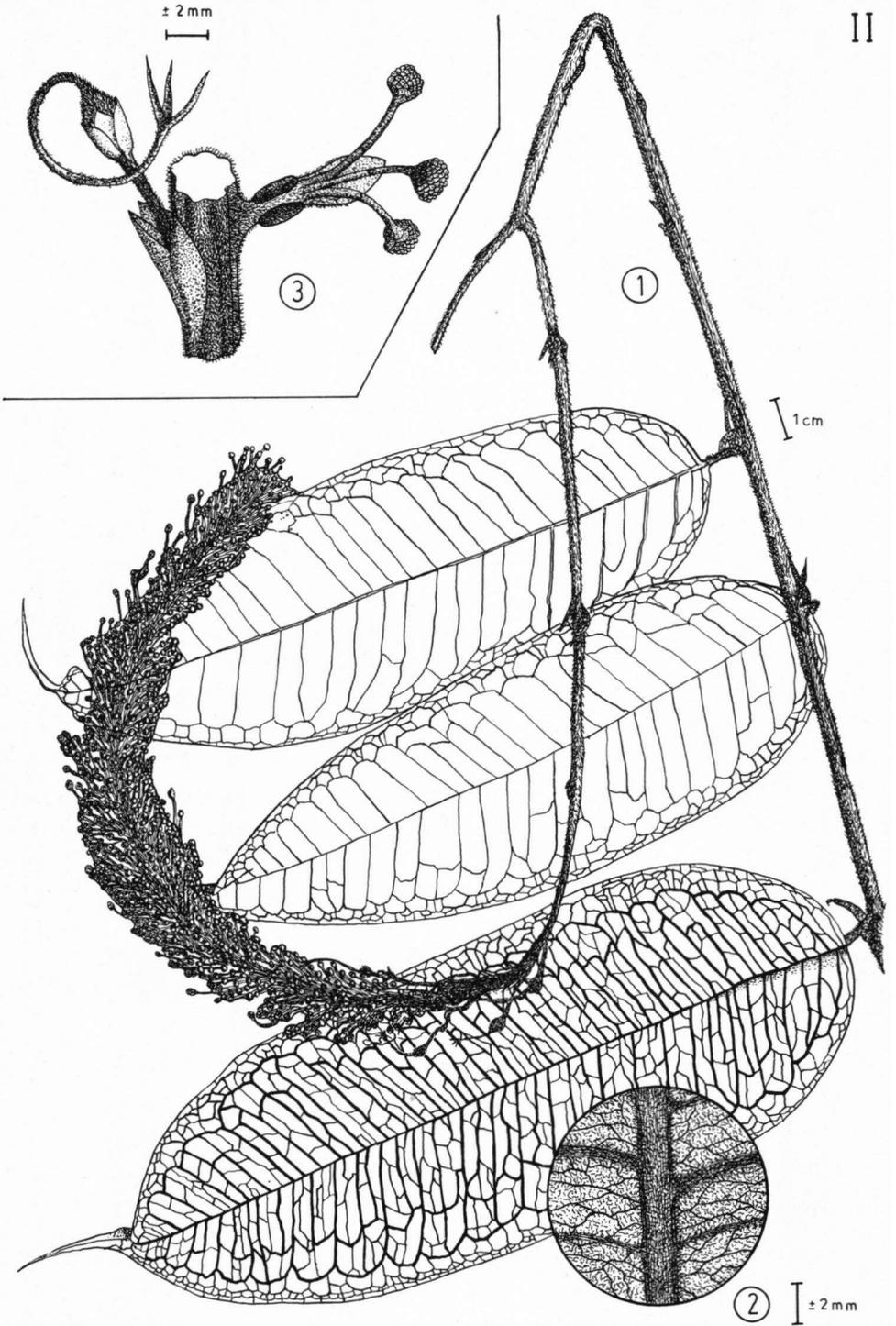


Fig. II. *Mabea setulosa* (Müller-Argoviensis) den Hollander. 1: Leafy twig with inflorescence. 2: Detail pistillate and young staminate inflorescence. 3: Detail blade. (Prance *et al.* 15697)

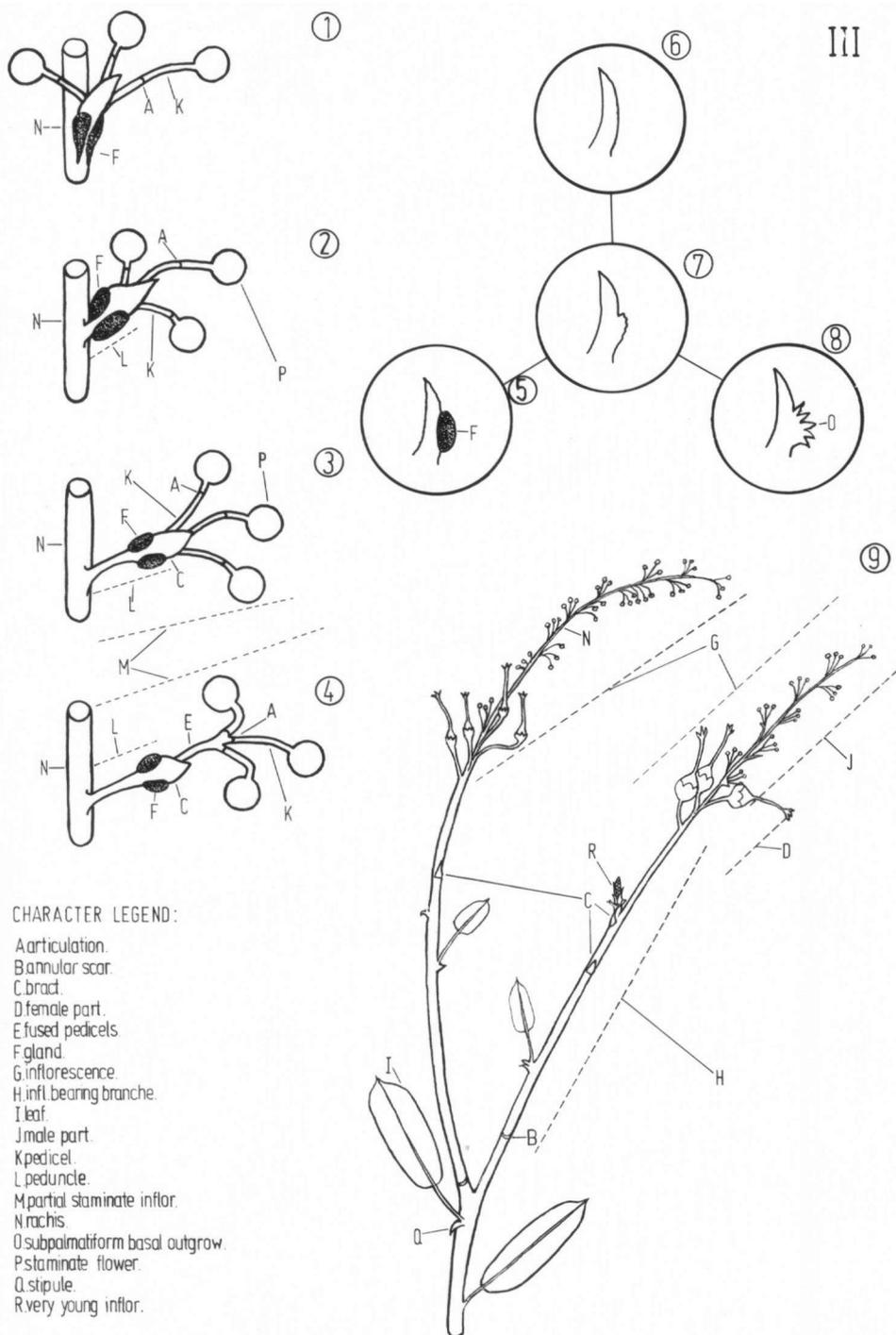


Fig. III:1-4. Schematic drawings of the position of glands in an umbel of staminate flowers. 1: appressed to the rachis; 2: touching the rachis; 3: clearly above the rachis; 4: fusion of the pedicels in an umbel of staminate flowers. Fig. III:5-8. Four types of stipules. Fig. III:9. Inflorescences and inflorescence-bearing branches.

5. *Mabea pulcherrima* Müller-Argoviensis, Flora 55: 44. 1872.

Lectotype here designated: French Guiana, without locality, *Leprieur s.n.* (or 111), (G-DC).

– *Mabea eximia* Ducke, Arch. Jard. Bot. RioJaneiro 4: 107. 1925.

Type: Brazil, Pará, Rio Tapajóz, Mangabal, *Ducke s.n.* (RB 17715), (isotype US).

Distribution: Venezuela (Bolívar); Guyana; French Guiana; Peru (Loreto); Brazil (Amapá, Amazonas, Pará).

6. *Mabea rubicunda* Jablonski in Mem. New York Bot. Gard. 17(1): 170. 1967.

Type: Guyana, Southern Pakaraima Mts., Kopinang Falls, *Maguire et al.* 46031-A, (NY, isotype US).

Distribution: Only known from the type-locality.

*Mabea setulosa* (Müller-Argoviensis) den Hollander stat. et comb. nov. (Fig. II:1–3).

Based on *Mabea occidentalis* Benth. var. *setulosa* Müller-Argoviensis in Martius, Fl. Bras. 11(2): 522. 1866.

Lectotype here designated: Brazil, Bahia, near Almada, *Martius s.n.* (G; isotype M).

Tree up to ca. 7 m high. Branchlets densely covered with unbranched, reddish hairs. Latex white. Ultimate branchlets ca. 2–5 mm in diam., terete. Internodes up to ca. 4 cm long. Stipules in young parts present, later caducous, up to ca. 18 mm long, hairy. Leaves alternate. Petiole ca. 5–13 mm long, hairy. Blade chartaceous, oblong to narrowly oblong, narrowly to broadly elliptic, ca. 6.5–25 × 3.5–7 cm. Margin entire to weakly serrate. Marginal glands below few, more concentrated in acumen of blade. Apex attenuate to abruptly acuminate. Acumen up to ca. 3 cm long. Base rounded. Surface above glabrous, below densely covered with unbranched, reddish hairs. Primary vein above prominent to impressed, below prominent, secondary and tertiary veins below less prominent.

Inflorescence in outline narrowly oblong to linear, up to ca. 25 × 3 cm, raceme-like compound. Rachis covered with unbranched, dark-reddish hairs. Inflorescence-bearing branches starting with an annular scar, terminal or axillary, ca. 5–17 cm long. Bracts flanked by stipules, with the same size and shape as stipules. Flowers unisexual, actinomorphic. Tepals 4–7. Staminate flowers numerous, distal in inflorescence, grouped in 3-flowered, pedunculate umbels. Peduncle ca. 1–3 mm long, with terminal bract of ca. 1.5–4 mm long, flanked by 2 glands of ca. 1.5–3 × 0.8–1.5 mm. Glands touching to just above rachis. Pedicels up to ca. 1.5 cm long, articulate in basal third. Staminate flowers globose to ovoid, ca. 1.5–2.5 mm in diam., central one often larger than lateral ones. Tepals different in size and shape, up to ca. 1 mm long, for most of length fused; individual tepals not or hardly distinguishable. Stamens sessile, ca. 25–50; anthers extrorse, ca. 0.4–0.6 mm long. Pistillate flowers ca. 3–8, proximal in inflorescence, single in axils of bracts. Pedicels up to ca. 10 mm long.

Tepals imbricate, attenuate to acuminate, ca. 2–4 mm long. Ovary more or less globose, ca. 2–3 mm in diam., Style up to 28 mm long. Stigmas 3, up to ca. 5 mm long. Complete fruit unknown, coccus woody, ca. 2 cm long. Seed unknown.

Additional collections: Brazil, Amazonas, Rio Negro, Foz do Caiary, *Fróes 22145* (U); road from Camanaus to Uaupés, *Prance et al. 15697* (M;U).

Note: *M. setulosa* (Müller-Argoviensis) den Hollander is probably closely related to *M. speciosa* Müller-Argoviensis, but can be easily distinguished by its unbranched hairs.

7. *Mabea speciosa* Müller-Argoviensis in Martius, Fl. Bras. 11(2): 520. 1874.

Type: Brazil, Amazonas, Rio Negro, *Riedel 1583* (G-DEL).

a. subsp. *speciosa*

– *Mabea caudata* Pax & Hoffmann in Engler, Pflanzenreich 52: 282. 1912.

Type: Guyana, Conowaruk River, *Bartlett 8217* (K).

Blade below, when dry, usually paler and with hairs at least on the primary vein; pairs of secondary veins (10–)14–19(–25). Glands in staminate part of inflorescence not touching rachis. Tepals of *pistillate* flowers usually acuminate.

Distribution: Colombia; Venezuela (Apure, Amazonas); Guyana; Suriname; Peru; Brazil (Amapá, Pará, Bahia, Amazonas, Matto Grosso).

b. subsp. *concolor* (Müller-Argoviensis) den Hollander stat. et comb. nov. Based on *Mabea piriri* Aublet var. *concolor* Müller-Argoviensis in De Candolle, Prodr. 15(2): 1150. 1866.

Lectotype here designated: Brazil, Bahia, without locality, *Blanchet 2326* (G).

– *Mabea occidentalis* Benth. var. *concolor* (Müller-Argoviensis) Müller-Argoviensis in Martius, Fl. Bras. 11(2): 522. 1874.

– *Mabea piriri* Aublet var. *purpurascens* Müller-Argoviensis in De Candolle, Prodr. 15(2): 1150. 1866.

Type: French Guiana, without locality, *Anonymus s.n.* (G).

– *Mabea occidentalis* Benth. var. *purpurascens* (Müller-Argoviensis) Müller-Argoviensis in Martius, Fl. Bras. 11(2): 522. 1874.

– *Mabea piriri* Aublet var. *obovata* Müller-Argoviensis in De Candolle, Prodr. 15(2): 1150. 1866.

Type: French Guiana, without locality, *Anonymus s.n.* (G).

– *Mabea occidentalis* Benth. var. *obovata* (Müller-Argoviensis) Müller-Argoviensis in Martius, Fl. Bras. 11(2): 522. 1874.

– *Mabea caudata* Pax & Hoffmann var. *concolor* Lanjouw, The Euphorbiaceae of Suriname 39. 1931.

Type: Suriname, Brownsberg, *Gonggrijp s.n.* (U).

– *Mabea saramaccensis* Croizat, Bull. Torrey Bot. Club 75: 405. 1948.

Type: Suriname, Saramacca River, Pina Swamp, Krappa Camp, *Maguire 24123* (isotype U).

Blade above and below, when dry, with about the same color and glabrous; pairs of secondary veins (8–)11–14(–18). Glands in staminate part of the inflorescence touching or nearly touching rachis. Tepals of pistillate flowers usually attenuate.

Distribution: Costa Rica; Venezuela (Bolívar, Amazonas); Suriname; French Guiana; Brazil (Amapá, Amazonas, Bahia).

8. *Mabea subsessilis* Pax & Hoffman in Engler, *Planzenreich* 6: 419. 1914.

Type: Brazil, without locality, *Glaziou 10035* (P).

– *Mabea argutissima* Croizat, *Bull. Torrey Bot. Club* 67: 288. 1940.

Type: Venezuela, Mt. Roraima, near Arabupu, *Pinkus 275* (isotypes NY, US).

Distribution: Colombia (Vaupés); Venezuela (Bolivar, Amazonas); Guyana; Suriname; French Guiana; Peru (Loreto), Brazil (Amazonas, Pará).

9. *Mabea taquari* Aublet, *Hist. Pl. Guiane* 2: 870; 4: pl. 334, fig. 2. 1775.

Type: French Guiana, without locality, *Aublet s.n.* (BM).

– *Mabea taquari* Aublet var. *angustifolia* Müller-Argoviensis in De Candolle 15(2): 1150. 1866.

Lectotype here designated: Guyana, without locality, *Rich. Schomburgk 347* (isotype P).

– *Mabea schomburgkii* Bentham in Hooker's *J. Bot. Kew Gard. Misc.* 6: 365. 1854.

Lectotype here designated: Guyana, without locality, *Rob. Schomburgk 40* (K).

Distribution: Jamaica; Trinidad; Colombia; Venezuela (Bolívar); Guyana; Suriname; French Guiana; Brazil (Amapá, Pará).

KEY TO THE MABEA SPECIES OF THE GUIANAS

- 1.a. Lower blade surface hairy ..... 2
- 1.b. Lower blade surface glabrous or at most with some disperse hairs on primary vein, margin, and/or apex ..... 6
- 2.a. Most hairs on lower blade surface not much shorter to longer than the width of the secondary veins ..... 3
- 2.b. Most hairs on lower blade surface much shorter than width of secondary veins ..... 4
- 3.a. Stipules ca. 8–10 mm long, not immediately caducous, in young parts usually present. Most hairs on lower blade surface regularly distributed. Basal glands of umbels of staminate flowers closely against rachis (Fig. III:1) ..... 6. *M. rubicunda*
- 3.b. Stipules ca. 2–5 mm long, almost immediately caducous, only present in very young parts. Most hairs on lower blade surface concentrated on midvein and secondary veins. Basal glands of umbels of staminate flowers clearly above to touching rachis (Fig. III:3) ..... 9. *M. taquari*
- 4.a. Secondary veins slightly curved, basally forming an angle of ca. 45°–60° with primary vein. Tertiary venation scalariform ..... 1. *M. angularis*
- 4.b. Secondary veins straight or slightly curved, basally forming an angle of ca. 60°–80° with primary vein. Tertiary venation reticulate ..... 5

- 5.a. Umbels of staminate flowers without basal glands. Stamens filamentous. Inflorescence-bearing branches (Fig. III:9) strongly paniculate. . . . . 3. *M. nitida*
- 5.b. Umbels of staminate flowers with 2 basal glands. Stamens afilamentous. Inflorescence-bearing branches (Fig. III:9) not distinctly paniculate, not or at most sparsely branched . 13
- 6.a. Petioles of older leaves hairy . . . . . 7
- 6.b. Petioles of older leaves glabrous or subglabrous . . . . . 9
- 7.a. Blade margin finely serrate. Stipules not immediately caducous, in young parts usually present, sometimes with subpalmatifid glandular basal outgrowth (Fig. III:8). Blade up to ca. 8 cm long . . . . . 8. *M. sessilis*
- 7.b. Blade margin entire to weakly serrate. Stipules almost immediately caducous, only present in very young parts, linear. Blade 1–23 cm long . . . . . 8
- 8.a. Blade (4–)10–20(–23) cm long. Basal glands of umbels of staminate flowers clearly above rachis (Fig. III:3). Stamens ca. 30–90. Inflorescence ca. 3–5 cm wide. . . . . 7a. *M. speciosa subsp. speciosa*
- 8.b. Blade (1–)6–10(–12) cm long. Basal glands of the umbels of staminate flowers closely against, or almost touching rachis (Fig. III:1,2). Stamens ca. 15–40. Inflorescence ca. 1–2 cm wide . . . . . 17
- 9.a. Peduncle of umbel of staminate flowers without bract-glands. Stamens filamentous. Inflorescence-bearing branches strongly paniculate. Inflorescence up to ca. 1 cm wide . . . . . 3. *M. nitida*
- 9.b. Peduncle of umbel of staminate flowers, or partial staminate inflorescence, with 2 bract-glands (Fig. III:3). Stamens afilamentous. Inflorescence-bearing branches not distinctly paniculate, not or at most sparsely branched. Inflorescence 2–14 cm wide . . . . . 10
- 10.a. Pedicels of partial staminate inflorescence in the lower part fused, looking like an extension of peduncle beyond bract-glands (Fig. III:4). Inflorescence ca. 5–14 cm wide. Seeds ca. 10–12 mm in diam. . . . . 5. *M. pulcherrima*
- 10.b. Pedicels of umbels of staminate flowers free (Fig. III:1–3). Inflorescence ca. 1–5 cm wide. Seeds up to ca. 9 mm in diam. . . . . 11
- 11.a. At least young leaves above with some hairs on primary vein. . . . . 12
- 11.b. Young leaves above always glabrous on primary veins . . . . . 14
- 12.a. Basal glands of umbels of staminate flowers closely against to touching rachis (Fig. III:1,2) . . . . . 17
- 12.b. Basal glands of umbels of staminate flowers clearly above to, at most, touching the rachis (Fig. III:2,3) . . . . . 13
- 13.a. Blade usually abruptly acuminate, margins of acumen parallel for at least 0.5 cm. Blade (4–)10–20(–23) cm long. Fruit ca. 1.5–2 cm in diam.. Stamens ca. 30–90 . . . . . 7a. *M. speciosa subsp. speciosa*
- 13.b. Blade usually gradually acuminate, acumen triangular or margins of acumen parallel for less than 0.5 cm. Blade (1–)6–10(–14) cm long. Fruit ca. 0.8–1.2 cm in diam. Stamens ca. 15–40 . . . . . 9. *M. taquari*
- 14.a. Basal glands of umbels of staminate flowers clearly above rachis (Fig. III:3) . . . . . 15
- 14.b. Basal glands of umbels of staminate flowers touching to closely against rachis (Fig. III:1,2) . . . . . 16
- 15.a. Blade (4–)10–20(–23) × (2.5–)4–8(–9) cm, below usually with tiny hairs, on or near primary vein. Staminate flowers ca. 1.5–4 mm in diam. Stamens ca. 30–90. Inflorescence 3–5 cm wide. . . . . 7a. *M. speciosa subsp. speciosa*
- 15.b. Blade (3–)5–14(–15) × (1–)2–4.5(–5) cm, never with hairs. Staminate flowers ca. 1–2 mm in diam.. Stamens ca. 15–30. Inflorescence ca. 1.5–3.5 cm wide . . . . . 4. *M. piriri*
- 16.a. Pistillate flowers in anthesis with style and stigmas up to ca. 8 mm long. Stamens ca. 15–40. Staminate flowers ca. 0.5–2.5 mm in diam. . . . . 17
- 16.b. Pistillate flowers in anthesis with style up to 25 mm long and stigmas up to ca. 8 mm long. Stamens ca. 30–90. Staminate flowers ca. 1.5–4 mm in diam. . . . . 7b. *M. speciosa subsp. concolor*

- 17.a. Blade below with usually 2, basilaminar elliptic glands; these much larger than other, round, marginal glands ..... 2b. *M. montana* subsp. *biglandulosa*
- 17.b. Blade below without basilaminar glands or if present than round and same size and shape as other marginal glands ..... 18
- 18.a. Basal glands of umbels of staminate flowers closely against rachis. Umbels with usually 3, staminate flowers. Pedicels never fused ..... 2c. *M. montana* subsp. *lucida*
- 18.b. Basal glands of umbels of staminate flowers touching or close to rachis. Umbels with 3–6, staminate flowers. Pedicels often fused in lower part .....  
..... 2a. *M. monatana* subsp. *montana*

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