

# RUBIACEAE

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Trees, shrubs, lianas or herbs. Leaves simple, crosswise opposite or sometimes whorled. Stipules often sheathing the stem. Inflorescence various. Flowers actinomorphic, 4—5-merous, epigynous, usually hermaphrodite. Sepals 4—6, free or fused, margin sometimes entire. Corolla sympetalous; petals 4—6. Stamens as many as the corolla-lobes, inserted on the corolla-tube and alternating with the lobes. Ovary inferior, 1—10- but usually 2-locular; style filiform; stigma often bilobed. Epigynic disk mostly present. Ovules 1 to many in each locule. Fruit and seeds various. Endosperm nuclear.

About 6000 species in 500 genera of world-wide distribution, most abundant in the tropics.

Key to the genera:

1. Ovules few to many in each locule of the ovary..... 2  
Ovules solitary in each locule or 2 in a 1-locular ovary..... 7
2. Fruit a capsule..... 3  
Fruit a soft or leathery berry..... 5
3. Shrubs or trees..... 4  
Herbs; leaves up to 3 × 0.5 cm..... *Oldenlandia* (p. 381)
4. Shrub, epiphytic; branches often rooting; leaves up to 10 × 5.5 cm.....  
..... *Hillia* (p. 380)  
Shrub or small tree; leaves up to 7.5 × 3 cm; anthers and stigma exerted ...  
..... *Exostema* (p. 381)
5. Corolla-lobes valvate; leaves up to 16 × 4.5 cm..... *Gonzalagunia* (p. 382)  
Corolla-lobes contorted or imbricate..... 6
6. Spiny shrub or tree; corolla-lobes contorted; inflorescence axillary; leaves 0.5—6  
cm long; seeds immersed in pulp, large; fruit ± globose... *Randia* (p. 383)  
Shrub not spiny; corolla-lobes imbricate; leaves 3—13 cm long; seeds small ..  
..... *Hamelia* (p. 385)
7. Ovary 1-locular with 2 ovules; corolla-lobes 4, valvate; fruit globose with a per-  
sistent tubular calyx-limb; leaves up to 16 × 7 cm..... *Faramea* (p. 386)  
Ovary 2- or more-locular with one ovule in each locule..... 8

8. Ovules pendulous from the top of the locule; shrubs or trees..... 9  
 Ovules axile or basal; herbs, shrubs or trees..... 13
9. Stamens inserted at or near the throat of the corolla; corolla-lobes imbricate 10  
 Stamens inserted at the base of the corolla-tube; inflorescence mostly axillary 12
10. Inflorescence a terminal panicle; corolla-lobes about as long as the tube; calyx-lobes ovate or triangular, persistent; branches often with dark, slender, long spines..... *Machaonia* (p. 386)  
 Inflorescence axillary, the forked main branches with sessile or subsessile flowers along the upper side; calyx-limb tubular, truncate or irregularly short-toothed ..... 11
11. Calyx-limb persistent; fruit ovoid; leaves shiny and varnished-like at the upper surface..... *Antirhea* (p. 387)  
 Calyx-limb deciduous; fruit globose..... *Guettarda* (p. 388)
12. Shrub; ovary 5—22-locular; inflorescence paniculate; corolla-lobes much longer than the tube; fruit black, drupaceous; leaves up to 10 × 7 cm *Erithalis* (p. 390)  
 Trailing or twining shrubs; ovary 2-locular; inflorescence subracemose; corolla-lobes shorter than the tube; fruit white, compressed; leaves up to 8 × 4 cm ..  
 ..... *Chiococca* (p. 392)
13. Corolla-lobes contorted or imbricate..... 14  
 Corolla-lobes valvate.....:..... 15
14. Leaves mostly in whorls of 3, small and narrow, with revolute margins, 1—3 × 0.1—0.2 cm; stipules fringed, persistent; corolla pink; drupe white; in coastal areas..... *Strumpfia* (p. 393)  
 Leaves mostly opposite, large, flat; stipules entire, eventually deciduous; corolla white; berry red..... *Coffea* (p. 395)
15. Fruit a fleshy, compound berry derived from a tight head of flowers without an involucre; corolla and ripe fruit white; leaves 5—10 × 1—3 cm *Morinda* (p. 395)  
 Fruit not compound..... 16
16. Stipules various; fruits drupaceous..... 17  
 Stipules setose-toothed; fruits dry..... 18
17. Inflorescence corymbose, cymes or panicles; corolla-tube straight; ovary 2-locular..... *Psychotria* (p. 396)  
 Inflorescence of terminal panicles; corolla-tube more or less curved and swollen at the base; ovary 2—4-locular ..... *Palicourea* (p. 400)
18. Fruit indehiscent, a dry berry with 2 pyrenes; corolla-tube longer than the strongly revolute lobes, up to 10 mm long, greenish-white or tinged pink; leaves up to 4 × 1 cm; mainly coastal subshrubs..... *Ernodea* (p. 402)  
 Fruit dehiscent or separating into 2 cocci; corolla small, white or tinged pink or mauve..... 19
19. Fruit separating into 2 cocci; perennial herb, branched from the base .....  
 ..... *Diodia* (p. 403)  
 Fruit dehiscent; cocci not separating, erect or diffuse weedy herb..... 20

20. One valve of the fruit remaining closed..... *Spermacoce* (p. 404)  
Both valves of the fruit opening..... 21
21. Dehiscence of the fruit transverse; inflorescence of axillary and (often mostly) terminal clusters..... *Mitracarpus* (p. 408)  
Dehiscence of the fruit septicial at the apex; inflorescence of axillary and terminal sessile clusters..... *Borreria* (p. 405)

*Hillia* Jacquin, Enum. Plant. Carib. 3. 1760

Epiphytic shrubs, rooting from the branches, glabrous throughout. Leaves opposite, petiolate. Stipules membranaceous, deciduous. Flowers solitary or few together, terminal. Bracts and bracteoles present. Calyx-tube cylindric, lobes 2—4, caducous. Corolla hypocrateriform, with long and narrow tube, lobes 3—7, spreading. Stamens 4—5, included, inserted below the throat; filaments short; anthers linear. Ovary obovoid or cylindric, 2-locular; style filiform, with 2 short broad arms. Ovules numerous in each locule. Capsule cylindric or oblong. Seeds very small, with a tuft of hairs at the top, appendaged at the base.

Seven species, natives of tropical America.

***Hillia parasitica* Jacq.**

JACQUIN, Enum. Plant. Carib. 18. 1760; URBAN, Symb. Ant. 4: 583. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 373. 1913; URBAN, Symb. Ant. 8: 663. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 227. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 6. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 8, fig. 3. 1936; ALAIN, Fl. Cuba 5: 19. 1962; ADAMS, Flowering plants of Jamaica 702. 1972; FOURNET, Fl. Guadeloupe & Martinique 1161, fig. 568. 1978; — *Hillia longiflora* SWARTZ, Prodr. Veg. Ind. Occ. 58. 1788; GRISEBACH, Fl. Br. W. Ind. Isl. 325. 1861 [1864]; DUSS, Fl. phan. Ant. franç. 334. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 187. 1909.

Straggling epiphytic shrub; branches often rooting, somewhat fleshy. Leaves elliptic to elliptic-obovate, acuminate at the apex, acute to cuneate at the base, 3.5—10 × 2—5.5 cm; petiole 12 mm long or shorter. Stipules ovate to linear-lanceolate, white, rounded at the apex, margin entire, 1.5—2.5 × 0.8—1.4 cm. Bracteoles broadly ovate, cuspidulate, 4 mm long. Calyx-lobes 6, elliptic to lanceolate, 5—8 mm long, deciduous. Corolla white, its tube 6—12 cm long, slender; lobes 6, lanceolate, 2—5 cm long, obtuse. Capsule 6—13 cm long, cylindric, brown. Seeds 2—3 mm long, tuft of hairs brown to yellowish, 8—12 mm.

West Indies from Cuba to Grenada, also in Mexico.

Epiphytic, in rainforest and elfin woodland.

SABA: top of The Mountain (Arnoldo 3302, fr. Dec.); Mountain, 800 m (Boldingh 2198, fr. July; 2192, July).

ST. EUSTATIUS: top of The Quill, 400 m (Boldingh 247, st. June).

**Exostema** L. C. Richard ex Humboldt & Bonpland, Pl. Aequin. 1: 131. 1807 ['1808']

Shrubs or trees. Leaves petiolate or sessile. Stipules deciduous. Inflorescence consisting of panicles or flowers solitary, axillary. Flowers white or red. Calyx 5-dentate or 5-lobed. Corolla hypocrateriform, the tube cylindric, the limb with 5 long lobes. Stamens 5, inserted at the base of the corolla-tube; filaments filiform; anthers linear, exserted. Ovary 2-locular; style exserted. Ovules many in each locule. Fruit a 2-valved capsule. Seeds many, winged.

Thirty or more species, natives of tropical America.

**Exostema caribaeum** R. & S.

ROEMER & SCHULTES, Syst. 5: 18. 1819; GRISEBACH, Fl. Br. W. Ind. Isl. 324. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 333. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 188. 1909; URBAN, Symb. Ant. 4: 584. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 373. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 409. 1920; URBAN, Symb. Ant. 8: 664. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 228. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 11, fig. 4. 1936; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 8. 1928; QUESTEL, Fl. Isl. St. Bartholomew 188. 1941; ALAIN, Fl. Cuba 5: 22, fig. 2. 1962; ADAMS, Flowering plants of Jamaica 703. 1972; FOURNET, Fl. Guadeloupe & Martinique 1164, fig. 569. 1978.

Shrub or small tree; branches slender, lenticellate. Leaves elliptic, ovate or oblong, acute to acuminate at the apex, acute at the base, 3—7.5 × 1—3 cm, glabrous, margin entire, midrib impressed above and prominent beneath; petiole 10 mm or shorter. Stipules deltoid, cordate, 2.5—5 mm long. Flowers solitary; pedicels 7 mm long. Bracts narrow-oblong to linear, margin ciliate. Calyx 5-dentate, 1—1.5 mm long, the margin ciliate. Corolla white, the tube glabrous without, pubescent within, 3—4 cm long; the lobes spreading or bowed, glabrous, 3—4.5 cm long. Stamens with filaments fused at the base, 5—5.5 cm long, pubescent below; anthers 2 cm long. Ovary obovate, oblong, 4.5 mm long, glabrous; style 6.5—7.5 cm long. Capsule elliptic-oblong, 1—2 cm long. Seeds elliptic, thin, brown, bordered by a narrow wing, 4—5 mm long.

Southern Florida, Mexico and Costa Rica, West Indies from the Bahamas and Cuba to Grenada.

Rather common, especially in calcareous areas.

ST. MARTIN: Low Lands (Arnoldo 3217, fl.); Simson Bay, point (Arnoldo 1285, fr.); near Mullet Pond (Boldingh 2783, fl. Aug.); Cole Bay (Boldingh 2500, fl. & fr. Aug.); Naked Boy Hill, 200—265 m (Boldingh 2726, fl. Aug.); from Belvedere to Oyster Pond (Boldingh 3045, fl. & fr. Aug.); mountain between Mont des Accords and Sentry Hill, 200—300 m (Boldingh 2891, fl. Aug.).

**Oldenlandia** Linnaeus, Spec. Plant. 119. 1753

Herbs. Leaves opposite. Stipules entire. Flowers small, usually in axillary cymes or panicles. Calyx-tube obovoid or subglobose; limb 4(—5)-toothed or -lobed. Corolla rotate, infundibuliform or hypocrateriform, 4(—5)-lobed, valvate in bud. Stamens 4 (or 5), inserted on the throat of the corolla; anthers oblong, dorsifixed, exserted or included.

Ovary 2-locular; style slender, 2-lobed. Ovules many in each locule. Capsule small, loculicidally dehiscent at the top. Seeds angular. Endosperm fleshy.

About 200 species, mostly in the tropics.

***Oldenlandia corymbosa* L.**

LINNAEUS, Spec. Plant. 119. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 330. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 335. 1897; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 224, 563. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 12. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 32, fig. 9. 1936; QUESTEL, Fl. Isl. St. Bartholomew 190. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 119. 1954; Gekw. en nutt. pl. Ned. Ant. 188. 1971; ADAMS, Flowering plants of Jamaica 730. 1972; FOURNET, Fl. Guadeloupe & Martinique 1160, fig. 566. 1978; — *Oldenlandia herbacea* DE-CANDOLLE, Prodr. 4: 425. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 330. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 335. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 187. 1909; Fl. Ned. W. Ind. Eil. 373. 1913.

Annual herb, up to 40 cm tall, more or less decumbent; stems tetragonal, glabrate. Leaves sessile to subsessile, linear or linear-lanceolate, acute at the apex, narrowed at the base, 10—30 × 1.5—4.5 mm, glabrate above, scabrous beneath; margin ciliolate; midvein impressed above and slightly prominent beneath. Stipular sheath 1.5 mm long, the bristles as long or shorter. Inflorescence consisting of axillary corymbs of 2—5 flowers, sometimes flowers solitary; peduncles filiform, 5—15 mm long. Calyx-lobes triangular, acute, about 0.8 mm long, margin ciliolate, midrib prominent and ciliolate without. Corolla white to light lilac, hypocrateriform, glabrous without, pubescent on the throat; tube about 0.6 mm long; lobes 4, spreading, oblong, about 0.9 mm long. Stamens 4, included, filaments minute, inserted at 0.3 mm from the base of the corolla-tube; anthers rounded-oblong, 0.2 mm long; thecae fused. Ovary subglobose, about 0.8 mm long; style included, 0.3 mm long. Capsule with the persistent calyx 2 mm in diam. Seeds brown.

Continental tropical America, West Indies, and Old World tropics.

Weed.

CURAÇAO: St. Thomas College (Arnoldo 2135, fl. & fr. Sept.); cultivated.

ST. MARTIN: from Philipsburg to Belvedere (Boldingh 2580, fl. & fr. Aug.); along roads from Grande Case to Marigot (Boldingh 3104, fl. & fr. Sept.); Kanaal Rolandus (Arnoldo 1243, fl. & fr. March).

***Gonzalagunia* Ruiz & Pavon, Prodr. 12. 1792**

Shrubs or small trees, more or less pubescent, branches slender and terete. Leaves opposite, petiolate or subsessile. Stipules entire. Inflorescence terminal, elongate and spike-like. Flowers solitary or clustered, sessile or shortly pedicellate, heterostylous. Bracts and bracteoles small. Calyx campanulate, 4-lobed, persistent. Corolla hypocrateriform, pubescent without, the tube narrow; lobes 4, valvate or imbricate. Stamens inserted in the tube, included or partly exerted; anthers dorsifixed. Ovary 2—4-locular; style filiform; stigma 2- or 4-lobed, included or exerted. Ovules many in each locule. Fruit a drupe, globose. Seeds subglobose.

About 36 species in West Indies and tropical America.

**Gonzalagunia spicata** (Lam.) Gomez de la Maza

GOMEZ DE LA MAZA, Ann. Soc. Esp. Hist. Nat. 23: 289. 1894; URBAN, Symb. Ant. 4: 584. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 374. 1913; URBAN, Symb. Ant. 8: 667. 1921; GOODING *et al.*, Fl. Barbados 404. 1965; — *Gonzalea spicata* (LAMARCK) DE CANDOLLE, Prodr. 4: 437. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 321. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 332. 1897; — *Gonzalagunia hirsuta* (JACQUIN) SCHUMANN, in MARTIUS, Fl. Bras. 6: 291. 1889; FOURNET, Fl. Guadeloupe & Martinique 1167. 1978; — *Duggena hirsuta* (JACQUIN) BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 229. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 14. 1928.

Shrub, up to 3.5 m high, stems densely stiffy-adpressed pubescent. Leaves ovate-lanceolate, 5–16 × 1.5–4.5 cm, acuminate at the apex, acute to attenuate at the base, margin entire, ciliate, upper surface with short stiffy hairs, lower surface pubescent, densely on the veins; petiole short. Stipules triangular, pubescent, 5–8 mm long, apex acuminate, aristate. Inflorescence consisting of bending racemes, 5–21 cm long, flowers in the lower part clustered and towards the end solitary. Bracts filiform, 2–5 mm long. Flowers short-pedicellate. Calyx pubescent, lobes linear, 2–4 mm long. Corolla white, throat villous, its tube 7–11 mm long, the lobes rounded-oblong, 2–5 × 2–3 mm. Stamens 4; filaments short; anthers 2 mm long. Stamens inserted at 8–10 mm from the base of the corolla-tube, partly exerted and the style included, 6–8 mm long or stamens inserted at 4–5 mm from the base of the corolla-tube, included and the style exerted and 8–12 mm long. Ovary densely pubescent, 1–2 mm long, 2-locular. Drupe slightly pubescent, 2.5 mm in diam.

West Indies and tropical continental America.

In secondary rainforest and elfin woodland; rare in dry vegetations.

SABA: road to the Mountain (Arnoldo 777, fl. Aug.); Mountain near Hellsgate (Boldingh 2284, flb. July); between The Bottom and Mary's Point, 350 m (Boldingh 1493, fl. & fr. July; Boldingh 1552, fl. July); slope of The Mountain above Rendez Vous, 600–800 m (Stoffers 3120, flb. & fr. Apr.); slope of The Mountain, 'under the Cliff', 680 m (Stoffers 3269, fl. & fr. May); gut near The Saddle, 300 m (Stoffers 4132, st. Aug.); top of The Mountain, 800–835 m (Stoffers 4232, fl. Aug.); between The Bottom and Saddle, 300–400 m (Stoffers 3107, fl. & fr. Apr.); Bottom Hill, 300–350 m (Stoffers 3147, fl. May); Castle Hill, sea-side, 300–350 m (Stoffers 4189, fl. Aug.); Booby Hill, 400 m (Stoffers 4275, fl. Aug.); slope of The Mountain near Rendez Vous, 550 m (Stoffers 4267, fl. Aug.); near the Saddle, 350–400 m (Stoffers 4121, fl. Aug.).

St. EUSTATIUS(?): Without loc. (Boldingh 1020, fl. June).

**Randia** Linnaeus, Spec. Plant. 1192. 1753

Shrubs or trees with or without spines. Leaves opposite or clustered, sessile or petiolate, membranaceous to coriaceous. Stipules persistent, interpetiolar, imbricate. Flowers small or large, solitary, clustered or corymbose, axillary or lateral. Calyx tubular or campanulate, truncate, dentate or lobed. Corolla hypocrateriform or infundibuliform to campanulate, throat glabrous or villous within; lobes 5, contorted in bud. Stamens usually 5, inserted on the throat or in the upper part of the corolla-tube; anthers dorsifixed. Ovary obovate to ovate; style clavate, entire or 2-parted. Ovules many in each

locule. Fruit a berry, usually 2-locular, with coriaceous pericarp, usually many-seeded. Seeds embedded in pulp, compressed.

About 300 species in the tropics, mainly in the Old World.

**Randia aculeata L.**

LINNAEUS, Spec. Plant. 1192. 1753; DUSS, Fl. phan. Ant. franç. 330, 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 188. 1909; URBAN, Symb. Ant. 4: 586. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 374. 1913; Fl. D.W. Ind. Isl. 2: 102. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 410. 1920; URBAN, Symb. Ant. 8: 668. 1921; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 23. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 53. 1936; ARNOLDO, Zakflora 50, fig. 7. 1954; ALAIN, Fl. Cuba 5: 65, fig. 5. 1962; ARNOLDO, Zakflora 188, fig. 7. 1964; GOODING *et al.*, Fl. Barbados 408. 1965; FOURNET, Fl. Guadeloupe & Martinique 1172, fig. 575. 1978; — *Randia mitis* LINNAEUS, Spec. Plant. 1192. 1753; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 231. 1925; QUESTEL, Fl. Isl. St. Bartholomew 190. 1941; — *Randia aculeata* L. var. *mitis* (L.) GRISEBACH, Fl. Br. W. Ind. Isl. 318. 1864; — *Randia aculeata* L. var. *aculeata*; ADAMS, Flowering plants of Jamaica 713. 1972.

Shrub or tree up to 4 m tall; branches spiny, puberulous at the nodes; spines 0.5—2 cm long. Leaves obovate or obovate-oblong or roundish, 0.5—6 × 0.5—3 cm, acute, obtuse or rounded at the apex, rounded to attenuate at the base, coriaceous, glabrous, margin entire; petiole (0—)2—8 mm long. Stipules sheathing, apex acuminate, aristate; base 1 mm long, point 1 mm long, sheath villous at the base and the covered stem within. Flowers lateral, sessile or subsessile. Calyx 2—3 mm long, ovary included, glabrous, lobes acute, sparsely ciliate. Corolla white, hypocrateriform, tube broad and villous in the throat, 4—7 mm long, lobes ovate, acute, reflexed, about 5 × 3 mm. Stamens 5, inserted in the throat; anthers linear, subsessile, 3 mm long, partly exserted. Style 7 mm long, exserted; stigma 2-lobed. Berry globose or ovoid, 6—12-seeded, 7—12 mm in diam. Seeds rounded.

Florida, Bermuda, Bahamas, Mexico to Venezuela, and Antilles.

Common species in various types of vegetation.

Vernacular names: lele, palo(e) di lele, rabo(e) di cabai, wakura (Leeward Group).

BONAIRE: Rincón (Boldingh 7165, fr. Feb.); hills near Rincón (Boldingh 7034, st. Feb.); Washington plantation (Stoffers 669, fr. Nov.); Hobau (Stoffers 1039, fr. Dec.); Seroe Caracao (Stoffers 1056, st. Dec.); Montagne (Stoffers 888, st. Dec.); along road from Kralendijk to Rincón (Stoffers 843, st. Dec.); Colombia plantation (Stoffers 735, st. Nov.).

CURAÇAO: Wacao to Playa Grande (Britton & Shafer 3043, fr. March); Knip plantation (Arnoldo 1091, st. Sept.); road to Blein (Boldingh 4752, st. Oct.); hills near Klein Santa Marta (Boldingh 4870, fr. Dec.).

SABA: Windwardside (Arnoldo 708, st. Aug.); between The Bottom and Mary's Point (Boldingh 1519, fr. July); Saddle (Boldingh 1658, st. July); along road from The Bottom to Crispine, 220—300 m (Stoffers 2944a, fl. April).

ST. EUSTATIUS: between Oranjestad and Fort de Windt, on the top of the cliff, 40 m (Boldingh 790, fl. June); slope of the lower part of Signal Hill (Boldingh 100, st. May); slope of The Quill, western side, 250—300 m (Stoffers 4720, st. Aug.); near White Wall, 200 m (Stoffers 4748, st. Aug.); Solitude (Stoffers 3720, fr. July); between Schotsenhoek and

Little Mountains (Stoffers 3544, fr. July); western slope of The Quill, 250—300 m (Stoffers 4736, fl. Aug.)

ST. MARTIN: near Fort Willem (Boldingh 2798, st. Aug.); top of the hill on the northern side of Cul de Sac, 200—300 m (Boldingh 2991, fl. Aug.); Milldrum Hill, 300—400 m (Boldingh 3140, st. Sept.); from Philipsburg to Guana Bay (Boldingh 2416, st. Aug.); Prince's Quarter (George s.n. sub Boldingh 2474, fr. Aug.); between Philipsburg and Oyster Pond (Stoffers 2287, fr. March); hills along northern side of Cul de Sac, 75—100 m (Stoffers 2638, fr. March); hills along eastern side of Cul de Sac (Stoffers 2648, st. Apr.).

**Hamelia Jacquin, Enum. Plant. Carib. 2. 1760**

Shrubs or trees. Leaves opposite or verticillate. Stipules interpetiolar. Inflorescence consisting of terminal, di- to tri-chotomously branched subscorpioid cymes. Bracts and bracteoles present. Calyx ovoid or hemispherical, lobes 5, persistent. Corolla tubular or narrowly bell-shaped, 5-angled at least in bud, throat glabrous; limb of 5 short and broad lobes, spreading or erect. Stamens 5, inserted near the base of the corolla; anthers basifixed, usually included. Disk prominent. Ovary 5-locular; style filiform; stigma narrow, entire. Ovules many in each locule on axile placentas. Berry ovoid or oblong, 5-lobed, 5-locular. Seeds minute, flattened, round or polygonal, tuberculate.

About 40 species, natives of America from Florida to Paraguay; few species in the West Indies.

**Hamelia axillaris Sw.**

SWARTZ, in Upfostr.-Sälsk. Tidn. 1785 (19): 148. 1785; Prodr. 46. 1788; URBAN, Symb. Ant. 4: 588. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 374. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 233. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago: 2: 18. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 45. 1936; ALAIN, Fl. Cuba 5: 67. 1962; ADAMS, Flowering plants of Jamaica 719. 1972; FOURNET, Fl. Guadeloupe & Martinique 1170. 1978; — *Hamelia lutea* ROHR ex SMITH, in REES, Cyclop. 17, no. 4. 1819; GRISEBACH, Fl. Br. W. Ind. Isl. 320. 1861 ['1864']; URBAN, Symb. Ant. 8: 670. 1921; — *Psychotria uliginosa* sensu BOLDINGH, Fl. D.W. Ind. Isl. 1: 192. 1909.

Shrub, up to 2.5 m tall; branches quadrangular, glabrous; young twigs finely puberulous. Leaves all opposite, ovate to ovate-lanceolate, acuminate with an acute tip at the apex, narrowed at the base into a slender petiole, 3—13 × 1.5—5 cm, glabrous; petiole 0.5—2.5 cm long. Stipules subulate, 3 mm long. Inflorescence consisting of open cymes at the forking of the patent branches, short-paniculate. Flowers sessile to subsessile. Calyx-tube glabrous, fleshy, oblong-ovoid, 2 mm long, acute. Corolla yellow, 8—10 mm long, tube narrowly funnel-shaped from a short, narrow base; lobes rounded, 1.5 mm long. Stamens inserted 2 mm from the base of the corolla-tube; filaments 1.5 mm long; anthers c. 6 mm long. Ovary oblong to ovoid, 2 mm long, glabrous; style clavate, c. 10 mm long. Berry ellipsoid to subglobose, black, c. 8 mm long.

Continental tropical America, Greater Antilles, Saba, St. Kitts, and Trinidad.

SABA: The Bottom, 200 m (Boldingh 1448, flb. July); along roads between The Bottom and Windwardside, 200—450 m (Boldingh 1306a, flb. & fr. July; 1365, flb. & fr. July); road to The Mountain (Arnoldo 871, flb. & fr. Aug.).

ST. EUSTATIUS: bottom of The Quill, 300 m (Boldingh 899, flb. June).



**Faramea Aublet, Hist. Pl. Guiane 102. 1775**

Shrubs or small trees, glabrous. Leaves opposite. Stipules interpetiolar, sometimes sheathing the stem, caudate, setaceous. Inflorescence consisting of terminal or axillary corymbs or umbels. Calyx-tube globose or ovoid, cupshaped to tubular, subtruncate, 4-toothed or -lobed, persistent on the fruit. Corolla hypocrateriform, 4-lobed, patent or recurved, throat glabrous. Stamens 4, inserted in the throat or tube of the corolla; anthers included or exerted, dorsifixed. Ovary 1-locular; style filiform, usually with 2 arms. Fruit a berry with leathery pericarp, 1-locular. Seed 1, globose.

About 120 species in tropical America.

**Faramea occidentalis (L.) A. Rich.**

A. RICHARD, Mém. Soc. Hist. Nat. Paris 5: 176. 1834; URBAN, Symb. Ant. 4: 604. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 378. 1913; URBAN, Symb. Ant. 8: 685. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 252. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 30. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 79, fig. 29. 1936; ALAIN, Fl. Cuba 5: 129, fig. 10. 1962; GOODING *et al.*, Fl. Barbados 403. 1965; ADAMS, Flowering plants of Jamaica 720. 1972; FOURNET, Fl. Guadeloupe & Martinique 1190, fig. 586. 1978; — *Faramea odoratissima* DECANOLLE, Prodr. 4: 496. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 338. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 341. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 193. 1909.

Shrub, up to 2.5 m tall. Leaves elliptic or oblong, acuminate at the apex, acute to cuneate at the base, 5—16 × 2.5—7 cm, margin entire; petiole 5—10 mm long. Stipular sheath 2—3 mm long, bristles 2—3 mm long. Inflorescence consisting of terminal and lateral corymbs with few to several flowers. Calyx cup-shaped with 4 minute teeth, 2.5 mm long. Corolla white, tube narrow, up to 10—20 mm long, lobes widely spread, lanceolate, up to 12 mm long. Stamens inserted at 12 mm from the corolla-base; filaments 2 mm long or shorter; anthers 5.5 mm long, linear, thecae fused. Ovary more or less globose; style c. 2 mm long; stigma 2-lobed, exerted. Fruit globose, about 7 mm in diam.

From Jamaica and Cuba to Trinidad and Tobago; also from Central Mexico through Central America to tropical South America.

SABA: from the Bottom to Mary's Point, 300 m (Boldingh 2071, flb. July).

St. EUSTATIUS: bottom of The Quill, 250 m (Stoffers 3610, st. July; 3612, st. July; 3626, fr. July; 3615, st. July; 3618, fr. July; 3634, st. July).

**Machaonia Humboldt & Bonpland, Pl. Aequin. 1: 101. 1806 ['1808']**

Shrubs or trees, glabrous or pubescent; branches often slender-spined. Leaves opposite, entire. Inflorescence consisting of terminal corymbose panicles. Flowers white, small. Calyx 4—5-lobed, persistent. Corolla infundibuliform, villous in the throat, the limb 4- or 5-lobed. Stamens inserted in the throat of the corolla; anthers basifixed. Ovary 2- (or rarely 3-)locular; style filiform; stigma 2-lobed. Ovules solitary in each locule, pendulous. Fruit obovate to oblong, dry, splitting at length into 2 segments. Seeds cylindrical.

About 20 species, natives of tropical America.

**Machaonia ottonis** Urb.

URBAN, Symb. Ant. 5: 511. 1908; BOLDINGH, Fl. Ned. W. Ind. Eil. 375. 1913; Fl. D.W. Ind. Isl. 2: 103. 1914; ARNOLDO, Zakflora 48, 67, fig. 146. 1954; Zakflora 188, fig. 146. 1964.

Shrub or shrubby tree up to 4 m tall; branches often spiny by slender, dark, long spines, lenticellate; younger twigs velvety pubescent. Leafblades ovate to broadly ovate or elliptic, acute to acuminate at the apex, acute or attenuate at the base, 1—8 × 0.5—4 cm, midvein prominent beneath, margin entire; petiole up to c. 7 mm long, puberulous above. Stipules ovate or narrowly deltoid, subulate or caudate at the apex. Inflorescence consisting of many- and densely-flowered corymbose panicles at the end of the branches; peduncles velvety pubescent. Bracts spatulate, subulate or linear-lanceolate, acuminate, 1.5—6 × 0.5—0.8 mm, puberulous to glabrescent, margin ciliate. Calyx small, its lobes ovate, obtuse. Corolla glabrous without, about 8 mm long, widening near the apex, lobes ovate to oblong, c. 2 mm long. Stamen-filaments very short; anthers oblong, 0.5 mm long. Ovary obovoid to oblong, pilose, 3 mm long; style 4—4.5 mm long. Fruit 6 mm long, splitting in 2 parts.

Bonaire, Curaçao, Venezuela, and Colombia.

Frequent in wooded areas.

Vernacular name: paloe di heroe (Leeward Group).

BONAIRE: Hobau (Stoffers 1019, fl. & fr. Dec; 1021, fl. Dec.); Slagbaai Plantation (Stoffers 602, fl. Nov.); calcareous hills near Rincón (Boldingh 7076, fr. Feb.); calcareous plateau Soebi Rincón (Boldingh 7282, fl. Feb.; 7275, st. Feb.); Seroe Dos Pos (Arnoldo 439, fr. Feb.).

CURAÇAO: Siberië (Boldingh 4024, st. Nov.); hills near Westpunt (Boldingh 4932, fl. & fr. Nov.); Ronde Klip (Boldingh 5406, st. Nov.; Arnoldo 1097, fl. Sept.); calcareous hills near Malpais (Boldingh 4879, fr. Jan.); Seroe Christoffel, 200 m (Burgers 36, fl. & fr. Dec.; Stoffers 220, fl. Oct.); Santa Barbara Plantation (Stoffers 414, fl. Oct.); diabase hill near Jan Thiel (Stoffers 5024, fl. Nov.); Caracas Baai (Britton & Shafer s.n., fr. March); Ronde Klip (Boldingh 5410, fl. & fr. Nov.); Rif (Boldingh 4646, fl. & fr. Dec.).

**Antirhea** Commerson ex A. L. Jussieu, Gen. 204. 1789

Trees or shrubs, usually glabrous. Leaves opposite, mostly coriaceous and shiny. Stipules deciduous or persistent. Flowers axillary, sessile or subsessile. Calyx unequally lobed, persistent. Corolla-tube cylindric, its limb 4—5-lobed, obtuse, imbricate. Stamens 4—5, inserted in the corolla-throat; filaments short; anthers linear-oblong, dorsifixed. Ovary 2—10-locular; stigma capitate or 2—3-lobed. Ovules solitary, pendulous. Fruit a drupe. Seed cylindric.

About 40 species in tropical America, tropical Asia, and Madagascar.

**Antirhea acutata** (DC.) Urb.

URBAN, Symb. Ant. 1: 439. 1899; URBAN, Symb. Ant. 4: 522. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 375. 1913; Fl. D.W. Ind. Isl. 2: 102. 1914; ARNOLDO, Zakflora 66. 1954; Zakflora 186. 1964; FOURNET, Fl. Guadeloupe & Martinique 1197, fig. 590. 1978; — *Stenostomum acutatum* DECAN-

DOLLE, Prodr. 4: 460. 1830; DUSS, Fl. phan. Ant. franç. 337. 1897; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 238. 1925; QUESTEL, Fl. Isl. St. Bartholomew 189. 1941; — *Stenostomum viscosum* GRISEBACH, Fl. Br. W. Ind. Isl. 334. 1861 ['1864'].

Shrub, up to 2 m high; only younger twigs with leaves. Leaves very approximate, oblong to oblong-lanceolate, acute or obtuse at the apex, acute or obtuse at the base, 2—4.5 × 0.5—1 cm, glabrous and shiny on the upper surface, coriaceous, margin slightly revolute, midrib prominent beneath and puberulous; petioles short, puberulous. Stipules broad-deltoid, subulate to caudate at the apex, setaceous, puberulous, sometimes persistent. Calyx cylindrical to tubular, puberulous without, 2 mm long; teeth c. 1 mm long. Corolla white, tubular to narrow-infundibuliform, glabrous without, puberulous within, 5-lobed; tube 8—9 mm long, the lobes ovate, 2—3 mm long. Stamens included; filaments inserted c. 7 mm from the base of the corolla-tube; thecae fused. Ovary 5—7-locular; style 3—4 mm long. Drupe ovoid, black, 4—6 mm long. Seeds oblong, 3 mm long, 1 mm thick.

Puerto Rico, Lesser Antilles from Anguilla to Guadeloupe, Aruba, Bonaire, and Curaçao.

Common shrub on limestone.

Vernacular names: placa chiquitu, stanibari, cuchara (Leeward Group).

ARUBA: Boca Grandi (Stoffers 1383, fl. Jan.); limestone rocks Fontein (Arnoldo 252, fl. & fr. Dec.; 1383, fl. Jan.); Palo Marca (Stoffers 1952, fl. & fr. Jan.); Rooi Prins (Stoffers 2152, fl. Feb.); hills near Fontein (Boldingh 6467, fl. Jan.); Fontein Plantation (Stoffers 1699, fl. & fr. Jan.); coast near Fontein (Stoffers 1378, fl. Jan.); hills near Fontein (Boldingh 6475, fl. & fr. Jan.).

BONAIRE: Lima Plantation (Stoffers 488, fl. & fr. Nov.); coast near Santa Barbara (Stoffers 793, fl. Nov.); coast of Karpata (Stoffers 612, fl. Nov.); east of Pos Calbas (Stoffers s.n., fl. Nov.); airfield (Stoffers 777, fl. & fr. Nov.); calcareous hills near Rincón (Boldingh 7061, fl. Feb.).

CURAÇAO: calcareous hills near Siberië (Boldingh 5243, fl. & fr. Nov.; 5202, fl. & fr. Nov.); Seroe Chiquito (Arnoldo 1099, fl. & fr. Aug.); Grote Berg (Stoffers 350, fl. & fr. Oct.); limestone plateau near San Pedro (Britton & Shafer 3081, fl. & fr. March); Ronde Klip (Stoffers 1255, fl. Nov.).

ST. MARTIN: near Simson Bay (Le Gallo 854, fl. July; 884, fl. July); Tintamarre (Le Gallo 1015, fl. & fr. Aug.).

*Guettarda* Linnaeus, Spec. Plant. 991. 1753

Trees or shrubs. Leaves opposite or rarely whorled, sessile or petiolate. Stipules deciduous. Inflorescence consisting of axillary cymes. Flowers sessile. Calyx tubular, truncate or slightly lobed, deciduous. Corolla hypocrateriform, puberulous without; lobes 4—9, oblong, obtuse. Stamens inserted below the throat of the corolla; anthers basifixed, included. Style included; stigma capitate. Drupe globose.

Species 60 or more, mostly of tropical America.

Key to the species:

1. Leaves 3—20 cm long, tomentose beneath..... *G. scabra*  
Leaves 0.5—3 cm long, glabrous beneath except for the principal veins.....  
..... *G. parviflora*

*Guettarda scabra* (L.) Lam.

LAMARCK, Tab. Encycl. 2: 218. 1793; GRISEBACH, Fl. Br. W. Ind. Isl. 332. 1861 [1864]; DUSS, Fl. phan. Ant. franç. 337. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 189. 1909; URBAN, Symb. Ant. 4: 589. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 375. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 412. 1920; URBAN, Symb. Ant. 8: 671. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 234. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 25. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 58. 1936; QUESTEL, Fl. Isl. St. Bartholomew 189. 1941; ALAIN, Fl. Cuba 5: 74. 1962; GOODING *et al.*, Fl. Barbados 405. 1965; ADAMS, Flowering plants of Jamaica 718. 1972; FOURNET, Fl. Guadeloupe & Martinique 1191, fig. 588. 1978; — *Matthiola scabra* LINNAEUS, Spec. Plant. 1192. 1753.

Shrub or tree, up to 7 m tall; stems glabrous, younger stems pubescent. Leaves oblong, elliptic, obovate or nearly roundish, obtuse, acute or short-acuminate at the apex, rounded to slightly cordate or acute at the base, 3—20 × 2—11 cm, veins impressed above, prominent beneath, margin entire, scabrous with short hispid hairs above, tomentose beneath; petiole 0.5—4 cm long, tomentose. Stipules deltoid-acuminate to linear, 3—5 mm long, puberulous. Cymes densely flowered; peduncles 3—10 cm long, tomentose. Calyx tomentose without, 3—3.5 mm long; lobes obtuse, 1 mm long. Corolla white; lobes 6, 3—3.5 × 2 mm; tube (10—)15(—20) mm long. Stamen-filaments very short; anthers oblong, 2—2.5 mm long. Ovary about 1 mm long, pubescent; style 9—11 mm long. Drupe tomentulose; pericarp fleshy; endocarp hard, 6—8 mm in diam., wrinkled when dry. Seeds 3—6.

Southern Florida, West Indies from Bahamas and Cuba to Trinidad and Tobago, Marguerita and the other islands off the Venezuelan coast.

In forests.

Vernacular names: candle wood, wild guave (Windward Group).

SABA: along road from The Bottom to Mary's Point (Boldingh 1463, st. July); Castle Hill near The Bottom (Arnoldo 558, fl. Aug.); id., seaside, 300—350 m (Stoffers 4173, st. Aug.; 4181, fr. Aug.).

ST. EUSTATIUS: slope of The Quill near Bengalen, 170 m (Stoffers 3764, fl. July); top of The Quill, 380 m (Boldingh 255, fr. June); Little Mountains, 90—120 m (Stoffers 3755, fl. July); from Little Mountains to Venus Bay (Boldingh 993, fl. June); top of The Quill, 400 m (Boldingh 319, st. June; Stoffers 1413, fl. July); id., near Glass Bottle (Stoffers 3598, fl. July; 3605, st. July); between Glass Bottle and White Wall, 100—200 m (Stoffers 4092, st. Aug.; 4098, fl. Aug.; 4107, st. Aug.); northern slope of The Quill (Stoffers 4013, fl. July); western slope of The Quill, 250—300 m (Stoffers 4739, fl. Aug.; 4705, fl. Aug.; 4703, fl. Aug.).

ST. MARTIN: Mount Paradise, 300—400 m (Boldingh 3551, fr. Sept.).

***Guettarda parviflora* Vahl**

VAHL, *Eclog. Am.* 2: 26. 1798; URBAN, *Symb. Ant.* 4: 590. 1911; BOLDINGH, *Fl. Ned. W. Ind. Eil.* 375. 1913; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 6: 236. 1925; WILLIAMS & CHEESMAN, *Fl. Trinidad & Tobago* 2: 25. 1928; QUESTEL, *Fl. Isl. St. Bartholomew* 189. 1941; FOURNET, *Fl. Guadeloupe & Martinique* 1191, fig. 587. 1978; — *Guettarda parvifolia* SWARTZ, *Fl. Ind. Occ.* 3: 1958. 1806; GRISEBACH, *Fl. Br. W. Ind. Isl.* 333. 1861 ['1864']; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 189. 1909.

Shrub or small tree, up to 5 m tall. Branches lenticellate, puberulous at the tip. Leaves elliptic or elliptic-oblong, obtuse to acute at the apex, obtuse to acute at the base, 0.5—3 × 0.4—1.5 cm, glabrate above, pubescent on the principal veins beneath; petiole up to 0.5 cm long, puberulous. Stipules narrow-deltoid to acuminate, puberulous. Cymes densely flowered; peduncle short. Calyx-limb truncate or lacerate, puberulous without, 2 mm long. Corolla white, its limb 6-lobed, oblong to spatulate, undulate, 3 × 2 mm; tube 6 mm long. Stamen-filaments very short; anthers oblong, 2—2.5 mm long. Ovary about 1 mm long, puberulous; style clavate, 0.5 cm long, puberulous. Drupe globose, velvety, 4—5 mm in diam. Seeds 5.

Lesser Antilles from St. Croix, Antigua, Saba, St. Martin and St. Eustatius to Venezuela.

In dry vegetations.

Vernacular name: wild cherry (Windward Group).

SABA: road to Mary's Point (Arnoldo 842, fl. Aug.); Spring Bay Gut (Boldingh 2079, flb. July); between The Bottom and Mary's Point, 100—200 m (Boldingh 1464, fl. July).

ST. EUSTATIUS: from Little Mountains to Venus Bay (Boldingh 961, flb. June).

ST. MARTIN: near Guana Bay (Le Gallo 925, fl. July); hills along the eastern side of Cul de Sac (Boldingh 3438, flb. Sept.); lower part of the hills between Mont Chambord and Mont Vernon (Boldingh 2950, fl. Aug.); mountain between Mont des Accords and Sentry Hill, 200—300 m (Boldingh 2887, fl. Aug.); Naked Boy Hill, 280 m (Boldingh 2737, fl. Aug.); from Philipsburg to Belvedere (Boldingh 2571, fl. Aug.); Milldrum Hill, 200—300 m (Boldingh 3122, fr. Sept.); Guana Bay (Le Gallo 856, fr. July).

***Erithalis P.* Browne, *Civ. Nat. Hist. Jam.* 165, t. 17, fig. 3. 1756**

Glabrous shrubs. Leaves opposite, coriaceous, shiny above. Stipules broad, sheathing, subulate or caudate, persistent. Inflorescence consisting of axillary panicles. Flowers white. Calyx-lobes truncate or 5—10-toothed, persistent. Corolla hypocrateriform, 5—10-lobed. Stamens inserted at the base of the corolla; filaments filiform; anthers included or exserted, basifixed. Ovary 5—10-locular, globose or ovoid; stigma 5—10-lobed. Ovules one in each locule. Fruit a drupe with coriaceous pericarp.

About 10 species in the south-western part of North America, in Central America, and the West Indies.

***Erithalis fruticosa* L.**

LINNAEUS, *Syst. Nat.* ed. 10. 930. 1759; GRISEBACH, *Fl. Br. W. Ind. Isl.* 336. 1861 ['1864']; DUSS, *Fl. phan. Ant. franç.* 338. 1897; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 190. 1909; URBAN, *Symb. Ant.*

4: 593. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 376. 1913; Fl. D.W. Ind. Isl. 2: 103. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 415. 1920; URBAN, Symb. Ant. 8: 673. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 239. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 65, fig. 23. 1936; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 28. 1928; QUESTEL, Fl. Isl. St. Bartholomew 189. 1941; ARNOLDO, Zakflora 67, fig. 42. 1954; ALAIN, Fl. Cuba 5: 90. 1962; ARNOLDO, Zakflora 187, fig. 42. 1964; GOODING *et al.*, Fl. Barbados 402. 1965; ADAMS, Flowering plants of Jamaica 715. 1972; FOURNET, Fl. Guadeloupe & Martinique 1202, fig. 595. 1978.

Shrub, up to 1.75 m high. Leaves elliptic to nearly roundish or broad-obovate, rounded, obtuse or acute to acuminate at the apex, rounded or attenuate at the base, 2—10 × 1.5—7 cm, margin entire, slightly revolute; midrib prominent at both sides, especially near the base, lateral veins embedded in the blade; petiole short, up to 1 cm long. Stipular sheath with scars in age, 2—2.5 mm long; margin entire. Inflorescence consisting of axillary panicles. Bracts deltoid, minute. Calyx 1—1.5 mm long, its lobes 0.5—1 mm long. Corolla-lobes 5, lanceolate, 5—6 × 1—1.2 mm, obtuse, the tube 1 mm long. Stamens inserted at 0.5 mm from the base of the corolla-tube; filaments pubescent below, fused near the base; anthers exerted, oblong, 3—4 mm long. Ovary 1—1.5 mm long; style 6 mm long; stigma 5-lobed, agglutinated. Fruit 4 mm in diam., globose, furrowed.

Florida, Central America, and West Indies.

Common on limestone.

Vernacular name: lumbra blancu (Leeward Group).

**ARUBA:** calcareous top of Canashito (Boldingh 6376, fr. Dec.); sandy shore near Manshebo (Boldingh 6288, fr. Dec.); Manshebo (Boldingh 6291, fl. & fr. Dec.); Spaans Lagoen, near Santa Cruz (Kruyt 2, fl. & fr. Dec.); *id.*, in aloë field (Stoffers 1456, fl. & fr. Dec.); Pova Beach (Stoffers 1416, fl. & fr. Jan.); Dakota (Arnoldo 283, fl. & fr. Dec.); near Hadikoerari (Stoffers 1770, fl. & fr. Jan.).

**BONAIRE:** calcareous plateau near Fontein (Boldingh 7341, fl. & fr. Feb.); coast of Karpata (Stoffers 608, fl. & fr. Nov.); seashore near Lagoen (Boldingh 7469, fl. & fr. Feb.); Karpata, south of debouchment of Goto-meer (Stoffers 1075, fl. & fr. Dec.); Soebi Rincón (Boldingh 7270, st. Feb.).

**CURAÇAO:** coral beach near Willemstad (Heldring-Talma s.n., st.; Britton & Shafer 2940, fl. & fr. March); hills near Savonet (Arnoldo 1192, fl. & fr. Oct.); Seroe Christoffel, S.W. slope, 150 m (de Wilde 144a, fl. & fr. Jan.); Ronde Klip (Stoffers 1250, fl. & fr. Dec.); Vee-rijs Berg (Boldingh 4733, fl. & fr. Oct.); calcareous hills near Malpais (Boldingh 4890, fl. & fr. Oct.); Hato (Arnoldo 1726, fr. Oct.); near Piscadera Baai (de Wilde 146a, fl. & fr. Jan.); Rif (Boldingh 4646, fl. & fr. Oct.); near saltpans of St. Willibrordus (Stoffers 370, fl. & fr. Oct.); Nassau Berg (Went s.n., fl. Nov.); hofje of Barber (Boldingh 5241, fl. & fr. Nov.); Seroe Chiquito (Arnoldo 1098, fl. & fr. Aug.).

**ST. EUSTATIUS:** top of Signal Hill, 225 m (Boldingh 1032, fl. & fr. June); from Little Mountains to Venus Bay (Boldingh 973, fl. & fr. June); along road from Oranjestad to Fort de Windt (Stoffers 3525, fl. & fr. July).

**ST. MARTIN:** Cole Bay (George, sub Boldingh 2499, fl. & fr. Aug.); from Belvedere to Oyster Pond (Boldingh 3047, fl. & fr. Aug.); near Mullet Pond (Boldingh 2752, fl. & fr. Aug.); Tintamare (Boldingh 3390, fl. & fr. Sept.).

**Chiococca** P. Browne, Civ. Nat. Hist. Jamaica 164. 1756

Vines or shrubs. Leaves broad, subcoriaceous or chartaceous. Stipules broad. Inflorescence consisting of axillary, simple or compound racemes. Flowers white or yellow. Calyx persistent, 4—6-toothed. Corolla infundibuliform or narrowly campanulate, lobes 5, valvate, reflexed or spreading. Stamens inserted at the base of the corolla tube; filaments mostly pubescent, united at the base; anthers linear, basifixed, included. Ovary 2- or rarely 3-locular; style filiform; stigma clavate. Ovules one in each locule. Drupe white, coriaceous, flattened. Seedcoat membranous.

About 10 species in Florida, Bermuda, and tropical America.

Key to the species:

1. Leaves oblong to broadly ovate, up to 8 cm long; stipular sheath 1—3 mm long; corolla-tube 5 mm long; stamen-filaments up to 1.5 mm long. . . . . *C. alba*  
Leaves ovate to lanceolate, up to 5.5 mm long; stipular sheath 1—1.5 mm long, long-pointed; corolla-tube more than 5 mm long; stamen-filaments more than 1.5 mm long. . . . . *C. parvifolia*

**Chiococca alba** (L.) Hitchc.

HITCHCOCK, Rep. Miss. Bot. Gard. 4: 94. 1893; URBAN, Symb. Ant. 4: 593. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 376. 1913; BRITTON & MILLSAUGH, Bahama Fl. 416. 1920; URBAN, Symb. Ant. 8: 674. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 240. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 29. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 69, fig. 24. 1936; QUESTEL, Fl. Isl. St. Bartholomew 191. 1941; ALAIN, Fl. Cuba 5: 93, fig. 8. 1962; GOODING *et al.*, Fl. Barbados 402. 1965; ADAMS, Flowering plants of Jamaica 716. 1972; FOURNET, Fl. Guadeloupe & Martinique 1199, fig. 594. 1978; — *Chiococca racemosa* LINNAEUS, Syst. Nat. ed. 10. 917. 1759.

Trailing and twining shrub climbing up to 5 m high; stems cylindrical, glabrous. Leaves ovate, oblong or broadly ovate, acuminate at the apex, acute to attenuate at the base, 2.5—8 × 1—4 cm, veins prominent, margin entire; petiole up to 1 cm long, slightly canalliculate above. Stipular sheath persistent, subulate to caudate at the apex. Calyx 1.2 mm long, teeth 5—6, 1 mm long, acute. Corolla white, narrowly campanulate, lobes 4—6, spreading, oblong, 4 × 1.5 mm. Stamens fused for nearly 1 mm at the base; anthers 3 mm long. Ovary 1—1.5 mm long, globose to slightly obovate, flattened; style 8 mm long. Drupe orbicular, 5 mm in diam.

Florida, Bahamas, Mexico, Central America, and West Indies.

In dry vegetations.

Vernacular name: buckroot (Windward Group).

SABA: Spring Bay Gut (Boldingh 2082, fl. & fr. July; 2081, fl. July); road to Mary's Point (Arnoldo 830, flb. & fr. Aug.); Booby Hill, 300 m (Boldingh 1574, flb. July).

ST. EUSTATIUS: from Little Mountains to Venus Bay (Boldingh 972, st. June; Stoffers 4026, flb. July); without loc. (Boldingh 754, fl. July).

ST. MARTIN: from Belvedere to Oyster Pond (Boldingh 3060, fl. Aug.); Mount Paradise (Boldingh 3225, fr. Sept.); id. 100—200 m (Boldingh 3298, fr. Sept.); Milldrum Hill (Boldingh 3153, fl. Sept.; 3123, fr. Sept.); gut from Bethlehem to Cul de Sac, 200 m (Boldingh 3429, fl. & fr. Sept.); Sentry Hill (Stoffers 4531, fl. Aug.); Marigot Hill, 0—200 m (Boldingh 2637, fl. & fr. Aug.); mountain between Mont des Accords and Sentry Hill, 200—300 m (Boldingh 2879, fl. Aug.); top of the hill on the northern side of Cul de Sac, 200—300 m (Boldingh 3009, fl. & fr. Aug.).

**Chiococca parvifolia** Wullschl.

WULLSCHLEGELE ex GRIEBACH, Fl. Br. W. Ind. Isl. 337. 1861 ['1864']; FAWCETT & RENDLE, Fl. Jamaica 7: 71. 1936; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 29. 1928; ALAIN, Fl. Cuba 5: 94. 1962; ADAMS, Flowering plants of Jamaica 716. 1972; — *Chiococca alba* (L.) HITCHCOCK var. *parvifolia* (GRIEBACH) URBAN, Symb. Ant. 8: 675. 1921; — *Chiococca alba* (L.) HITCHCOCK ssp. *parvifolia* (GRIEBACH) STEYERMARK, Acta bot. Ven. 6: 138. 1971.

Climbing shrub; stems glabrous to puberulous. Leaves ovate to elliptic, acute to blunt-acuminate at the apex, acute to attenuate at the base, midrib slightly puberulous near the base; petiole up to 1 cm long. Stipular sheath persistent, subulate to caudate, the tip 1.5—2 mm long. Calyx 1 mm long; teeth 4—6 (—7), thick, 0.5 mm long, deltoid to slightly ovate, scabrous without, bluntish to acute at the apex. Corolla white to creamish, 2—3 mm long; base of the tube 1.5—2 mm wide. Stamens with filaments 2—2.2 mm long, fused at the base for 1 mm, pubescent; anthers 2—2.5 mm long, apex exserted. Ovary globular to oblong, flattened, 1.5 mm long; style 7—8 mm long. Fruit compressed, 4—5 mm wide.

Florida, Bahamas, and from Cuba to Trinidad & Tobago.

Mostly in dry vegetations.

SABA: between The Bottom and Mary's Point, 350 m (Boldingh 1497, fl. July); along roads between The Bottom and Windwardside, 200 m (Boldingh 1355, fl. July); between Hellsgate and Mary's Point (Boldingh 2038, fl. July); Windwardside (Arnoldo 600, fl. Aug.); hill near The Bottom (Arnoldo 618, fl. Aug.); Booby Hill, 400 m (Stoffers 4325, fl. Aug.); in dry evergreen woodland on Castle Hill, seaside, 300—350 m (Stoffers fl. Aug.).

ST. EUSTATIUS: between Venus and Little Mountains (Stoffers 4026, fl. July); between Glass Bottle and White Wall, 270 m (Stoffers 4048, st. Aug.); id. 100—200 m (Stoffers 4085, fl. Aug.); slope of The Quill on the side of White Wall, 200 m (Boldingh 1170, fl. June); top of The Quill, 400 m (Boldingh 199, st. June; 336, st. June); id. 450 m (Boldingh 400, st. June); slope of The Quill near Bengalen, 200 m (Boldingh 688, fl. June); Great Hill, 400 m (Boldingh 1385, st.).

**Strumpfia** Jacquin, Enum. Plant. Carib. 28. 1760

Strongly branched shrub of coastal regions. Leaves in whorls of three, rigidly coriaceous. Stipules sheathing, persistent. Flowers very small, in short axillary racemes. Calyx 5-lobed. Corolla deeply 5-parted; its tube very short, the lobes lanceolate to oblong-lanceolate, slightly imbricate. Stamens 5, inserted in the corolla-tube; filaments short; anthers linear-oblong, subsessile, fused by their connectives to form a column. Ovary



2-locular; style glabrous, surrounded by a ring of hairs at the base. Ovules one in each locule. Drupe globose, 1—2-locular. Seeds oblong with a fleshy endosperm.

Only one species, native of Florida, Antilles, Yucatán, and the Bahamas.

*Strumpfia maritima* Jacq.

JACQUIN, Enum. Plant. Carib. 28. 1760; GRISEBACH, Fl. Br. W. Ind. Isl. 336. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 338. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 191. 1909; URBAN, Symb. Ant. 4: 596. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 372. 1913; Fl. D.W. Ind. Isl. 2: 103. 1914; BRITTON & MILLSAUGH, Bahama Fl. 418. 1920; URBAN, Symb. Ant. 8: 676. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 243. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 76, fig. 27. 1936; QUESTEL, Fl. Isl. St. Bartholomew 190. 1941; ARNOLDO, Zakflora 63. 1954; ALAIN, Fl. Cuba 5: 101, fig. 9. 1963; GOODING *et al.*, Fl. Barbados 410. 1965; ARNOLDO, Zakflora 189. 1964; ADAMS, Flowering plants of Jamaica 714. 1972; FOURNET, Fl. Guadeloupe & Martinique 1215, fig. 601. 1978.

Mostly a small shrub; branches long and stiff, covered by persisting stipules; the younger stems densely tomentose; internodes very short. Leaves sessile, linear, 10—30 × 1—2 mm, acute at the apex, margin strongly revolute, pubescent to glabrate on the lower side. Stipules subdeltoid, acute, 1.5 mm long, the margin denticulate. Racemes shorter than the leaves, few-flowered; peduncles 3—9 mm long, tomentose; pedicels 1 mm long. Calyx puberulous, lobes triangular, 0.5 mm long, 2 mm long, ovary included. Corolla white to pinkish; tube 0.5—1 mm long, the lobes obtuse, pubescent, 3—3.5 × 1 mm. Staminal column 2 mm long. Ovary globose, 1 mm long. Drupe whitish, with the persistent calyx, about 3.5 mm in diam.

Florida, Antilles, Yucatán, and Bahamas.

In coastal regions.

Vernacular name: bai no bolbe (Leeward Group).

ARUBA: Fontein (Suringar s.n., fr. Feb. [L]); without loc. (Boldingh, st.).

BONAIRE: calcareous hills near Rooi Samboe (Boldingh 7428, st. Feb.; 7433, st. Feb.); calcareous plateau Seroe Montagne (Boldingh 7426, st. Feb.); coastal region of Santa Barbara (Stoffers 792, fl. Nov.); beach of Barcadera (Stoffers 535, fl. & fr. Nov.).

CURAÇAO: Santa Cruz (Britton & Shafer 3030, st. March); coastal limestone plateaus (Rutten-Pekelharing s.n., fr. July); calcareous hill and seashore near Savonet (Boldingh 5043, fr. Nov.); calcareous part of Ronde Klip (Boldingh 5403, fr. Nov.); Oostpunt, Punt Kanon (de Wilde 85a, fl. & fr. March); Fuik Plantation (Suringar s.n., fl. & fr. Feb. [L]); beach near salt pans of St. Willibrordus (Stoffers 359, fl. & fr. Oct.); Groot Santa Marta (Stoffers 114, fl. & fr. Sept.); Westpunt (Suringar s.n., fr. Feb. [L]).

ST. EUSTATIUS: near White Wall (Boldingh 1264, fr. July); White Wall (Boldingh 813, st. June; Stoffers 4774, fl. & fr. Aug.; Stoffers 4773, fl. & fr. Aug.); without location (Boldingh, st.).

ST. MARTIN: Cole Bay (George s.n. sub Boldingh 2519, st. Aug.); Point Simson Bay (Arnoldo 1282, fl. & fr. March); Low Lands (Stoffers 2682, fl. & fr. Sept.).

**Coffea** Linnaeus, Spec. Plant 172. 1753

Shrubs or trees, usually glabrous. Leaves opposite, elliptic, oblong, ovate or obovate, coriaceous to chartaceous, petiolate. Stipules acuminate, persistent. Inflorescence consisting of axillary clusters. Flowers white, sessile or short-pedicellate. Calyx tube subcylindric, oblong or turbinate, the limb truncate, dentate or lobed, persistent. Corolla spread or with reflexed lobes, obtuse or acute. Stamens exerted, inserted in the throat of the corolla; filaments very short; anthers linear, versatile. Ovary 2-locular. Ovules one per locule. Fruit a drupe, oblong or globose. Seeds dorsally convex.

About 20 species, natives of the Old World.

**Coffea arabica** L.

LINNAEUS, Spec. Plant. 172. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 338. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 341. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 191. 1909; URBAN, Symb. Ant. 4: 595. 1911; Symb. Ant. 8: 676. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 242. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 75. 1936; QUESTEL, Fl. Isl. St. Bartholomew 190. 1941; ARNOLDO, Gekw. en nutt. plant. Ned. Ant. 49. 1954; ALAIN, Fl. Cuba 5: 99. 1962; GOODING *et al.*, Fl. Barbados 410. 1965; ARNOLDO, Gekw. en nutt. plant. Ned. Ant. 225. 1971; ADAMS, Flowering plants of Jamaica 714. 1972; FOURNET, Fl. Guadeloupe & Martinique 1215. 1978.

Glabrous shrub or tree, up to 7 m tall. Leaves oblong, elliptic or lanceolate-elliptic, acuminate at the apex, acute at the base, 7—17 × 3—6 cm, margin entire; petiole 1 cm long or shorter. Stipules 3—5 mm long. Inflorescence consisting of clusters of several flowers, subsessile. Calyx denticulate. Corolla 1.5—2 cm long, 5-lobed, widely spread or reflexed. Drupe red or yellow, 15 mm in diam. Seeds semi-elliptic, 8—12 mm.

Originally from the Old World tropics; cultivated and locally naturalized.

Vernacular name: coffee (Windward Group).

SABA: Windwardside (Boldingh 1935, fr. July).

St. EUSTATIUS: inner slope of The Quill, 350 m (Boldingh 1220, fr. June); without loc. (van Groll-Meyer 215, fr.; 101. st.).

**Morinda** Linnaeus, Spec. Plant. 176. 1753

Shrubs or trees, usually glabrous. Leaves opposite, rarely ternate. Stipules sheathing the stem. Inflorescence consisting of axillary or terminal, sometimes umbellate flower-clusters, stalked or subsessile. Calyx-tube obovoid or hemispherical; limb short, truncate or minutely toothed, persistent on the fruit. Corolla hypocrateriform, 3—7- but usually 5-lobed, valvate in bud. Stamens as many as corolla-lobes, inserted on the corolla-throat or tube; anthers dorsifixed, included or exerted. Ovary 2—4-locular; style included or exerted; stigma 2-lobed. Ovule one in each locule. Fruit a fleshy compound berry. Seeds obovoid or kidney-shaped, with fleshy endosperm.

Species about 70—80, mainly in India and Malaya; few in Africa and tropical America.

**Morinda royoc L.**

LINNAEUS, Spec. Plant. 176. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 347. 1861. ['1864']; BOLDINGH, Fl. Ned. W. Ind. Eil. 378. 1913; Fl. D. W. Ind. Isl. 2: 104. 1914; BRITTON & MILLSAUGH, Bahama Fl. 419. 1920; URBAN, Symb. Ant. 8: 685. 1921; FAWCETT & RENDLE, Fl. Jamaica 7: 77, fig. 28. 1936; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 252. 1925; ARNOLDO, Zakflora 55, 66. 1954; ALAIN, Fl. Cuba 5: 130, fig. 11. 1962; ARNOLDO, Zakflora 188. 1964; ADAMS, Flowering plants of Jamaica 720. 1972.

Shrubs, up to 1.50 m tall, usually glabrous; branches rather slender, terete, pale. Leaves petiolate; blade linear-lanceolate, lanceolate to oblong or narrow-obovate, acute or acuminate at the apex, narrowed at the base, 5—10 × 1—3 cm, margin entire, midrib puberulous beneath, more densely at the base of the lateral veins; petiole 3—8 mm long. Stipules persistent, deltoid, 1—2 mm long; apex cuspidate to caudate, base fused with the petiole. Calyx-limb truncate, ciliolate, puberulous without, 0.3—0.5 m long. Corolla white, puberulous without; tube 5 mm long, villous within except for the lower part at the base; lobes 5, oblong-lanceolate, 3—4 × 1 mm, apex obtuse. Stamens inserted at 3 mm from the base of the corolla-tube beneath the throat; filaments 2 mm long; anthers exerted, 2.5 mm long, linear, thecae fused. Ovary puberulous, 1—1.5 mm long; style filiform, 5—5.5 mm long, exerted. Fruit globose to ovoid, up to 2 cm in diam., pyrenes about 5 mm long.

From Florida through Central America to Venezuela, Greater Antilles to Hispaniola, also on Aruba, Bonaire and Curaçao.

Vernacular names: pan di diabel, batata geel, lo(u)mbracho(u), palo(u) zapatero (Leeward Group).

ARUBA: calcareous hills near Fontein (Boldingh 6482, st. Jan); calcareous hill Seroe Blanco (Boldingh 6505, fl. & fr. Jan.); Paloe Marca (Stoffers 1955, fl. & fr. Jan.).

BONAIRE: Fontein (Arnoldo 498, fl. & fr. Apr.); calcareous soil near Playa Grandi (Boldingh 7276, fl.buds. Feb.); calcareous plateau of Bolivia (Boldingh 7365, fl. & fr. Feb.); Fontein (Stoffers 560, fr. Nov.).

CURAÇAO: Veeris Berg, (de Wilde 71a, fl. & fr. March); hofje near Weis Afo (Nagelkerken 162, fl. & fr. March); coral sea beach near Willemstad (Heldring-Talma, fl. & fr.; Britton & Shafer, fr. & fl.buds. March); Gasparito (Arnoldo 827, fl. & fr. Jan.); hills near Blein (Boldingh 4761, fl. & fr. Oct.); hofje of Santa Barbara Plantation (Stoffers 392, fl. & fr. Oct.); Brakkeput Mei Mei (Stoffers 206, fl. & fr. Oct.); Klein Santa Marta (Stoffers 91, fl. & fr. Sept.); hofje Klein St. Michiel (Stoffers 5046, fr. & fl.); Choloma (Stoffers 3, fl. & fr. Sept.); Hato (Stoffers 56, fl. & fr. Sept.); Groot St. Joris (Went 1334, fr. Dec.); Cas Cora (Burgers 82, fl. & fr. Jan.).

**Psychotria** Linnaeus, Syst. Nat. ed. 10. 929, 1364. 1759. nom. cons.

Erect or climbing shrubs or small trees. Leaves opposite or rarely 3—4-whorled. Stipules free or more or less connate. Inflorescence consisting of corymbs, cymes or panicles. Bracts present or wanting. Calyx-tube more or less ovoid; limb 5-toothed. Corolla-tube cylindrical or funnel-shaped, straight, glabrous or hairy inside; lobes 4—6 usually 5, valvate in bud. Stamens 5 (4—6) inserted on the throat or mouth of the corolla; anthers dorsifixed; exerted or included. Ovary 2-locular; style with 2 distinct arms. Ovules soli-

tary in each locule, erect from the base. Fruit a berry or drupe of 2 pyrenes, or cocci often dehiscent longitudinally on the ventral side. Seeds convex and smooth or dorsally ribbed, flat or concave ventrally; endosperm fleshy or horny, uniform or furrowed between the ribs and sometimes also on the commissural side. Flowers often dimorphic, having included or exerted stamens and styles correspondingly exerted or included.

Nearly 1200 species in the tropics.

Key to the species:

1. Lianas or climbers rooting on trunks or stones; leaves leathery... *P. pendula*  
Shrubs, trees or rarely herbs; leaves not fleshy..... 2
2. Stipules deeply divided, lobes twice as long as the basal part; flowers hypocrateriform..... *P. berteriana*  
Stipules entire or if lobed the lobes less than half as long as the basal part; flowers campanulate..... 3
3. Panicles sessile..... *P. nervosa*  
Panicles distinctly pedunculate..... *P. microdon*

#### *Psychotria nervosa* Sw.

SWARTZ, Nov. Gen. & Spec. 43. 1788; FAWCETT & RENDLE, Fl. Jamaica 7: 95, fig. 30. 1936; GOODING *et al.*. Fl. Barbados 407. 1965; ADAMS, Flowering plants of Jamaica 726. 1972; — *Psychotria rufescens* KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 3: 364. 1818; GRISEBACH, Fl. Br. W. Ind. Isl. 342. 1861 ['1864']; BOLDINGH, Fl. D.W. Ind. Isl. 1: 192. 1909; — *Psychotria undata* JACQUIN, Hort. Schoenbr. 3: 5. 1798; GRISEBACH, Fl. Br.; W. Ind. Isl. 342. 1861 ['1864']; URBAN, Symb. Ant. 4: 598. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 378. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 419. 1920; URBAN, Symb. Ant. 8: 678. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 245. 1925; ALAIN, Fl. Cuba 5: 118. 1963.

Shrub or tree up to 4.5 m tall, branches glabrous. Leaves elliptic-ovate to oblong to elliptic-obovate, acuminate at the apex, acute to attenuate at the base, glabrous, 4—13 × 1.3—5 cm; margin entire, midrib prominent beneath, lateral veins less prominent; petiole 0.5—1.5 cm long. Stipules terminal, cupular, covering the buds and splitting unequally and irregularly when developing, deciduous with age, about 8 mm long, glabrous, at the base puberulous within. Inflorescence consisting of terminal panicles, several- to many-flowered, sessile or pedicellate. Calyx (ovary included) 1.5—2 mm long, glabrous, slightly campanulate; limb truncate to slightly sinuate to obtusely dentate. Corolla white, hypocrateriform, glabrous without and densely villous below the throat; tube 3—3.5 mm long, lobes 5 or 6, spreading, oblong-lanceolate, 1.9—2.1 mm long, apex acute, sparsely puberulous at the upper-surface, the apex incurved. Stamens as many as the corolla-lobes, exerted; filaments 1 mm long, inserted just below the throat at 2.5—3 mm from the base of the corolla-tube; anthers oblong, 1 mm long. Ovary 2-locular, 0.8—1 mm long; style included, 2.5 mm long. Fruit oblong-ovoid, 5 mm long, 10-ribbed, glabrous.

From Mexico to the northern part of South-America; Antilles.

In forests and woodlands.

Vernacular name: bastard canckerberry (Windward Group).

SABA: Windwardside (Arnoldo 592, fl. Aug.); Crispine, 400 m (Boldingh 1762, fl. July); along roads between The Bottom and Windwardside, 200 m (Boldingh 1353, fl. July; Stoffers 4617, fl. March); The Bottom, 200 m (Boldingh 1456, fl. July); Bottom Hill, 300—350 m (Stoffers 3311, fl. May); slope of The Mountain near Windwardside, 400—475 m (Stoffers 3327, fl. May); between The Bottom and The Saddle, 220—400 m (Stoffers 3402, fl. May; 3105, fl. Apr.; 3093, fl. Apr.); Spring Bay Gut, 125 m (Stoffers 3283, fl. May); Booby Hill, 400 m (Stoffers 4274, fr. & fl. Aug.).

ST. EUSTATIUS: top of The Quill, 400—450 m (Boldingh 500, fl. June; 174, fl. June; 403, fl. June); top of The Quill at the side of Glass Bottle, 380—400 m (Stoffers 3588, fl. July); top of The Quill, 340—450 m (Stoffers 3913, fl. & fr. July); slope of The Quill near Bengalen, 170 m (Stoffers 3758, fl. July); slope of The Quill between Glass Bottle and White Wall, 270 m (Stoffers 4074, st. Aug.); western slope of The Quill, 250—300 m (Stoffers 4710, fl. Aug.); without loc. (v. Groll-Meyer s.n., fl.; van Groll 213, fr.).

ST. MARTIN: hills along northern side of Cul de Sac, 75—100 m (Stoffers 2623, st. March); Colombier (le Gallo 863, fl. July).

### *Psychotria microdon* (DC.) Urb.

URBAN, *Symb. Ant.* 9: 539. 1928; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 564. 1930; ALAIN, *Fl. Cuba* 5: 121. 1962; GOODING *et al.*, *Fl. Barbados* 407. 1965; FOURNET, *Fl. Guadeloupe & Martinique* 1208. 1978; — *Rondeletia microdon* DE CANDOLLE, *Prodr.* 4: 408. 1830; — *Psychotria horizontalis* sensu MAYCOCK, *Fl. Barbados* 92. 1830; GRISEBACH, *Fl. Br. W. Ind. Isl.* 344. 1861 ['1864']; DUSS, *Fl. phan. Ant. franç.* 344. 1897; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 191. 1909; JOHNSTON, *Proc. Bost. Soc. Nat. Hist.* 34(7): 263. 1909; — *Psychotria pinnularis* SÉSSÉ & MOÇINO, *Fl. Mexico ed.* 2. 57. 1894; URBAN, *Symb. Ant.* 4: 597. 1911; BOLDINGH, *Fl. Ned. W. Ind. Eil.* 378. 1913; URBAN, *Symb. Ant.* 8: 677. 1921; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 6: 245. 1925; WILLIAMS & CHEESMAN, *Fl. Trinidad & Tobago* 2: 34. 1928.

Shrub up to 1.5 m tall; branches glabrous. Leaves opposite, petiolate, ovate to elliptic to obovate or oblong-ovate to oblong-obovate, acute to acuminate at the apex, acute to attenuate at the base, 3—9 × 1.5—4 cm; glabrous, margin entire, midrib impressed to slightly canaliculate above and prominent beneath, lateral veins less prominent beneath and pubescent at the base; petiole 0.5—2 cm long. Stipules sheathing, broadly deltoid, acute to acuminate, 1.5—2.5 mm long, persistent, glabrous to puberulous, villous, margin ciliate when young, glabrous splitting with age. Inflorescence consisting of terminal panicles, peduncled. Flowers pedicellate. Calyx-limb subcampanulate, truncate to slightly dentate and ciliate, 2—3.5 mm long (ovary included). Corolla white, hypocrateriform, glabrous; tube 5—7 mm long with a swollen ring on the throat; lobes 5 or 6, ovate to oblong, apex acute with incurved tip, 2.5—3.5 mm long. Stamens 5—6, included; filaments about 1 mm long, inserted at 2 mm from the base of the corolla-tube; anthers linear, 1.5 mm long. Ovary 0.5—1 mm long; style filiform, 0.5 cm long; stigma 2-lobed, included. Fruit oblong-ovate, 7—8 mm long and 5—6 mm in diam. Pyrenes convexed, ventrally flattend.

Antilles and from Mexico and Ecuador to Surinam.

SABA: Spring Bay Gut (Boldingh 2123, fl. July); near Devilshand (Boldingh 2076, fr. & fl. July).

ST. EUSTATIUS: slope of The Quill near Bengalen, 50—200 m (Boldingh 657, st. June); slope of The Quill above White Wall (Boldingh 1191a, fl. June); without loc. (v. Groll 281, fl. & fr.).

ST. MARTIN: Mount Paradise, 100—200 m (Boldingh 3300, fl. Sept.); mountain between Mont des Accords and Sentry Hill, 200—300 m (Boldingh 2883, fl. Aug.); Naked Boy Hill, 50—200 m (Boldingh 2689, fl. Aug.); from Belvedere to Oyster Pond (Boldingh 3063, fl. & fr. Aug.); along roads in Cul de Sac (Boldingh 2968, fl. Aug.); from Philipsburg to Belvedere (Boldingh 2575, fl. Aug.); lower part of Milldrum Hill (Boldingh 3161, fl. & fr. Sept.); from Philipsburg to Belvedere (Boldingh 2586, fl. & fr. Aug.); Sentry Hill (Stoffers 4528, fl. Aug.; Stoffers 4527, st. Aug.); along road from Cole Bay to Simson Bay (Boldingh 3252, fr. Sept.).

### ***Psychotria guadalupensis* (DC.) Howard**

HOWARD, Journ. Arn. Arb. 47: 139. 1966; FOURNET, Fl. Guadeloupe & Martinique 1207. 1978; — *Loranthus guadalupensis* DECANOLLE, Prodr. 4: 294. 1830; — *Psychotria pendula* (JACQ.) URBAN, Symb. Ant. 1: 445. 1899 non Hooker; BOLDINGH, Fl. D.W. Ind. Isl. 1: 192. 1909; Fl. Ned. W. Ind. Eil. 377. 1913; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 31. 1928; ALAIN, Fl. Cuba 5: 124. 1963; — *Viscoides pendulum* JACQUIN, Select. stirp. amer. hist. 73, t. 51, f.1. 1763; — *Psychotria parasitica* SWARTZ, Prodr. 44. 1788; DUSS, Fl. phan. Ant. franç. 344. 1897.

Shrubby, woody plant, epiphitic or growing on organic material; stems glabrous. Leaves opposite, coriaceous, broadly ovate to elliptic, acute to acuminate at the apex, obtuse to rounded at the base, margin entire, 2—4.2 × 1.5—3 cm, coriaceous; petiole 1.5—6 mm long. Stipules sheathing, truncate, 1.5—3 mm long, trichotome; peduncle 2—3 cm long. Flowers pedicellate. Calyx 1.5—3 mm long, the ovary included, 5-lobed, glabrous; lobes deltoid, acute, 0.5—0.9 mm long. Corolla white, glabrous without, villous within the 2.8—3 mm long tube; lobes 5, lanceolate, 3—3.5 mm long, apex acute, incurved. Stamens 5; filaments 1 mm long, inserted halfway the tube; anthers lanceolate-linear, 1.8 mm long. Style filiform, included, 2.5 mm long; stigma 2-lobed.

Antilles.

In elfin woodland.

SABA: top of The Mountain (Arnoldo 938, fl. aug.).

### ***Psychotria berteriana* DC.**

DECANOLLE, Prodr. 4: 515. 1830; URBAN, Symb. Ant. 4: 600. 1911; Symb. Ant. 8: 681. 1921; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 33. 1928; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 248. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 100. 1936; ALAIN, Fl. Cuba 5: 106. 1962; ADAMS, Flowering plants of Jamaica 725. 1972; FOURNET, Fl. Guadeloupe & Martinique 1210, fig. 599. 1978.

Shrub or tree, 4—6 m tall, twigs glabrous to puberulous. Leaves petiolate, elliptic to obovate-elliptic or ovate-oblong to obovate-oblong, acuminate at the apex, acute to at-

tenuate at the base, 10—20 × 4—6 cm, margin entire, glabrous above, midrib and lateral veins slightly impressed above and more or less prominent beneath, midrib slightly puberulous beneath; petiole 0.5—3 cm long. Stipules bi-lobed, persistent, sheathed at the base, 1—2.5 mm long, consisting of terminal panicles, pedunculate, pubescent, many-flowered. Flowers short-pedicellate or sessile, supported by the bracts. Calyx slightly puberulous, 5-lobed, 1.2 mm long (ovary included), lobes acute, 0.2—0.5 mm long. Corolla white, hypocrateriform to campanulate, deeply 5-lobed, oblong, obtuse; tube villous within. Stamens 5, included; filaments minute, inserted halfway the tube; anthers linear, 1—1.5 mm long. Fruit subglobose crowned by the persistent calyx, glabrous, 3—4 mm long.

Antilles and South America.

In rainforest.

SABA: in gut between Sandy Cruz and Hellsgate (Stoffers 3441, fl. & fr. May).

*Palicourea* Aublet, Hist. Pl. Guiane 1: 172. 1775

Shrubs or trees. Leaves opposite or verticillate, petiolate or sessile. Stipules sheathing, interpetiolar, mostly 2-lobed or 2-parted, persistent or deciduous. Inflorescence consisting of terminal panicles. Flowers sessile or short-pedicellate. Calyx-limb 5-toothed or sometimes entire. Corolla hypocrateriform, often swollen at the base, lobes 4—5, valvate, the throat often villous. Stamens 4—5; anthers mostly linear; thecae fused except for the base. Ovary 2—3- or 4-locular; stigma 2—3- or 4-lobed. Ovules one in each locule. Fruit a small drupe with 2 or 4 angled pyrenes.

125 species or more, natives of tropical America.

Key to the species:

1. Flowers pedicellate; corolla yellow..... *P. crocea*  
Flowers sessile or subsessile in groups of three at the end of the panicle-branches;  
corolla white..... *P. domingensis*

*Palicourea domingensis* (Jacq.) DC.

DECANDOLLE, Prodr. 4: 529. 1830; URBAN, Symb. Ant. 4: 601. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 378. 1913; URBAN, Symb. Ant. 8: 682. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 249. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 110. 1936; ALAIN, Fl. Cuba 5: 125. 1962; GOODING *et al.*, Fl. Barbados 410. 1965; ADAMS, Flowering plants of Jamaica 729. 1972; FOURNET, Fl. Guadeloupe & Martinique 1214. 1978; — *Palicourea pavetta* DECANDOLLE, Prodr. 4: 525. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 346. 1861 [‘1864’]; DUSS, Fl. phan. Ant. franç. 345. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 192. 1909; — *Psychotria domingensis* JACQUIN, Enum. Plant. Carib. 16. 1760.

Shrub, up to 1—3 m tall, glabrous; branches tetragonal, erect. Leaves elliptic to oblong to lanceolate, glabrous, 5—19 × 2—7 cm, obtusely acuminate to acuminate at the apex, narrowed at the base, margin entire; midvein prominent beneath; petiole up to 2 cm long. Stipules 2-parted, segments 1—2 mm long, linear-triangular, acute. Inflorescence

consisting of corymbose panicles. Flowers sessile or subsessile in groups of three. Calyx (ovary included) about 2 mm long, glabrous; limb 5-toothed, campanulate, teeth 0.5 mm long. Corolla hypocrateriform, white, glabrous, lobes 5, oblong to oblong-lanceolate, 4—5 × 1—2 mm, apex acute; tube slightly curved, 1—1.2 mm long. Stamens 5, inserted below the throat at 9 mm from the base of the corolla-tube; filaments 1 mm long, the top slightly exerted. Ovary cylindrical, 1 mm long, 2-locular; style filiform, 1.7 cm long, exerted; stigma 2-lobed. Drupe with the persistent calyx, 5—6 mm in diam.

From Cuba to Guadeloupe.

SABA: The Mountain, 400 m (Boldingh 1755a, fl. July); along roads from The Bottom to Windwardside (Boldingh 1313, fl. & fr. July; Boldingh 1364, fl. & fr.); Windwardside (Arnoldo 654, fr. Aug.).

ST. EUSTATIUS: inner slope of The Quill, 350 m (Bolding 1224, flb. June; Bolding 1216, fl. & fr. June); bottom of The Quill (Stoffers 3607, fl. July).

*Palicourea crocea* (Sw.) R. & S.

ROEMER & SCHULTES, Syst. Veg. 5: 193. 1819; GRISEBACH, Fl. Br. W. Ind. Isl. 345. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 345. 1897; URBAN, Symb. Ant. 4: 602. 1911; Symb. Ant. 8: 683. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 250. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 38. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 106. 1936; ALAIN, Fl. Cuba 5: 125. 1962; ADAMS, Flowering plants of Jamaica 729. 1972; FOURNET, Fl. Guadeloupe & Martinique 1213. 1978; — *Psychotria crocea* SWARTZ, Prodr. Veg. Ind. Occ. 44. 1788; — *Palicourea cocinea* DECANDOLLE, Prodr. 4: 529. 1830.

Glabrous shrub up to (1—)5 m tall; branches tetragonal. Leaves glabrous to puberulent, 12—20 × 4—7 cm, broadly ovate-oblong; apex acuminate, base narrowed, margin slightly ciliolate or entire; midrib impressed to canalliculate above and prominent beneath, lateral veins slightly prominent beneath; midrib and lateral veins puberulent beneath; petiole up to 3 cm long. Stipules 2-lobed, sheath 2—3 mm long, lobes narrowly triangular, acute, 2 mm long, margin ciliolate. Inflorescence in terminal panicles; pedicels and peduncles puberulous. Flowers pedicellate. Calyx (ovary included) about 2.5 mm long, glabrous to puberulous, lobes 5, ovate-oblong, about 1 mm long, apex obtusely acute, margin ciliolate. Corolla hypocrateriform, yellow or orange, glabrous to puberulous without, lobes 5, ovate to triangular-ovate, 1—2 × 3—4 mm, apex obtuse to acutish; tube cylindrical, slightly curved, swollen at the base and pubescent near it within, 6—12 mm long. Stamens 5, included, inserted in the middle of the tube, filaments 1.5 mm long; anthers 4 mm long, the top slightly exerted. Ovary cylindrical, 1 mm long, 2-locular; style filiform, 1.5 cm long, exerted. Fruit globose-ovate crowned by the persistent calyx, 4—10 mm long and 3.4—8 mm in diam., 8-ribbed, glabrous.

From Cuba to Trinidad, and continental tropical South-America.

SABA: between Hellsgate and Sandy Cruz, 550 m (Stoffers 3441, fr. May).



**Ernodea** Swartz, Prodr. Veg. Ind. Occ. 29. 1788

Glabrous shrubs; stems tetragonal. Leaves linear to lanceolate, nearly sessile. Stipules sheathing. Flowers solitary, axillary, sessile. Calyx-lobes 4—6, triangular to linear, persistent. Corolla white or pink, hypocrateriform; lobes 4—6, linear, revolute, valvate. Stamen-filaments filiform; anthers basifixed, exerted. Ovary 2-locular; style filiform; stigma subcapitate. Ovules solitary in each locule. Drupe fleshy, globose, furrowed.

Perhaps only one species in Florida, Central America and West Indies.

**Ernodea littoralis** Sw.

SWARTZ, Prodr. Veg. Ind. Occ. 29. 1788; GRISEBACH, Fl. Br. W. Ind. Isl. 347. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 347. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 193. 1909; URBAN, Symb. Ant. 4: 686. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 379. 1913; Fl. D.W. Ind. Isl. 2: 104. 1914; BRITTON & MILLSAUGH, Bahama Fl. 420. 1920; URBAN, Symb. Ant. 8: 686. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 253, 564. 1925; FAWCETT & RENDLE, Fl. Jamaica 7: 114, fig. 34. 1936; QUESTEL, Fl. Isl. St. Bartholomew 190. 1941; ARNOLDO, Zakflora 63. 1954; ALAIN, Fl. Cuba 5: 132. 1962; ARNOLDO, Zakflora 197. 1964; ADAMS, Flowering plants of Jamaica 731. 1972; FOURNET, Fl. Guadeloupe & Martinique 1205, fig. 598. 1978.

Mexico, Honduras, West Indies south to Guadeloupe and Bonaire.

Especially in limestone areas under saltspray influence.

Shrub up to 2 m high; branches densely leafy. Leaves linear to lanceolate, acuminate to mucronate at the apex, attenuate at the base, 1.5—4 × 0.5—1 cm, coriaceous, margin entire. Stipular sheath 2—3 mm long, 3—4 bristles as long or shorter. Calyx 4—5 mm, lobes 4, linear-lanceolate, acuminate, 4—5 × 1 mm, slightly hispid between the lobes. Corolla white, tube 10—12 mm long, the lobes 8—9 mm. Stamens inserted at the base of the corolla-lobes; filaments 8 mm long; anthers oblong, 2.5 mm long. Ovary oblong, 1 mm; style 2.3 cm long. Drupe 4—5 mm in diam., black.

Mexico, Honduras, West Indies south to Guadeloupe and Bonaire.

Especially in limestone areas under saltspray conditions.

BONAIRE: Pos San Dominico (Arnoldo 474, fl. & fr. March); Karpata, south of debouchement of Goto-meer (Stoffers s.n., fl. Dec.); calcareous hills of Rooi Samboe (Boldingh 7434, fr. Feb.; 7429, fl. & fr. Feb.); calcareous plateau of Montagne (Boldingh 7393, st. Feb.); calcareous plateau Karpata, near the coast (Stoffers 606, fl. & fr. Nov.).

SABA: from Hellsgate to Mary's Point (Boldingh 2037, fr. July).

ST. EUSTATIUS: near White Wall (Stoffers 4753, st. Aug.; Boldingh 1263, fr. July; 806, fr. June).

ST. MARTIN: Low Lands (Boldingh 2279, st. Sept.); near Orient Bay (Boldingh 3357, st. Sept.).

**Diodia** Linnaeus, Spec. Plant 104. 1753

Annual or perennial herbs or vines; stems cylindrical or tetragonal. Leaves opposite, mostly sessile, margin entire. Stipules sheathing. Inflorescence consisting of axillary,

sessile clusters. Flowers white, pink or lavender. Calyx obconic or obovoid, 2—4-lobed. Corolla infundibuliform to hypocrateriform, glabrous or puberulous within, mostly 4-lobed. Stamens usually 4, inserted in the throat of the corolla. Anthers dorsifixed, oblong-linear, exserted. Ovary 2-locular; style filiform; stigma 2-lobed. Ovules 1 in each locule. Fruit 2-locular, finally separating into 2 indehiscent carpels. Seeds oblong, dorsally convex.

About 25 species, mostly natives of America.

***Diodia apiculata* (Willd.) Schum.**

SCHUMANN, in ENGLER, Bot. Jahrb. 10: 313. 1889; — *Spermacoce apiculata* WILLDENOW ex ROEMER & SCHULTES, Syst. Veg. 3: 531. 1818; — *Diodia rigida* (KUNTH) CHAMISSE & SCHLECHTENDAL, Linnaea 3: 341. 1828; GRISEBACH, Fl. Br. W. Ind. Isl. 348. 1861 [‘1864’]; BOLDINGH, Fl. D.W. Ind. Isl. 1: 193. 1909; URBAN, Symb. Ant. 4: 605. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 379. 1913; Fl. D.W. Ind. Isl. 2: 104. 1914; URBAN, Symb. Ant. 8: 686. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 253. 1925; QUESTEL, Fl. Isl. St. Bartholomew 191. 1941; ARNOLDO, Zakflora 111. 1954; ALAIN, Fl. Cuba 5: 134. 1962; ARNOLDO, Zakflora 187. 1964.

Perennial herb, somewhat woody, branched from near the base; stems tetragonal, glabrous or puberulous, 20—70 cm. Leaves oblong to lanceolate, acuminate and aristulate at the apex, 1.5—2.5 × 0.2—0.6 cm, margin plane or revolute, hispid. Stipular sheath 2—2.5 mm long, its bristles 6—9 mm long. Inflorescence consisting of few-flowered clusters or flowers solitary. Calyx of 4 unequal linear lobes, the 2 longer lobes about 1 mm long, the 2 shorter lobes minute. Corolla lavender to white, 6—9 mm long, puberulous without, lobes deltoid. Stamens inserted in the corolla-throat; filaments minute. Ovary 1 mm long; style c. 4 mm long. Fruit with a hard pericarp. Seeds deltoid-oblong.

Florida, West Indies, and continental tropical America.

ARUBA: Balashi (Arnoldo 222, fl. & fr. Dec.); Miralamar (Boldingh 6452c, fl. & fr. Jan.); Companashi (Arnoldo 84, fl. & fr. Dec.).

BONAIRE: Soebi Blancu (Arnoldo 375, fl. & fr. Jan.); road from Fontein to Seroe Grandi (Boldingh 7347, fr. Feb.).

CURAÇAO: hill near St. Joris Bay (Britton & Shafer 3154, fl. & fr. March); Cas Chiquito (Boldingh 4795, fl. & fr. Oct.); hills near Knip Plantation (Arnoldo 1019, fl. & fr. Jan.; Stoffers 1148, fl. & fr. Dec.); hills between Santa Cruz and Seroe Christoffel (Boldingh 5610a, fr. Dec.); hills near Santa Cruz (Boldingh 5599b, fr. Dec.); hills near Barber (Boldingh 5171, fl. & fr. Nov.); Julianadorp (Stoffers 307, fl. Oct.); Klein Piscadera (Burgers 147, fl. & fr. Feb.).

ST. EUSTATIUS: top of the cliff between Gallows Bay and White Wall (Boldingh 765, fr. June); top of The Quill, 400 m (Boldingh 230, fr. June).

***Spermacoce* Linnaeus, Spec. Plant. 102. 1753**

Annual or perennial herbs, stems tetragonal. Stipules with several bristles, sheathing the stem and fused with the petioles. Flowers axillary, clustered. Calyx 4-lobed. Corolla hypocrateriform, 4-lobed, valvate in bud. Stamens 4, inserted on the corolla-tube; an-

thers included. Ovary 2-locular; style filiform; stigma 2-lobed. Ovules 1 in each locule. Fruit leathery or crustaceous with the persistent calyx; 2-valved, one open and the other closed. Seeds oblong, ventrally grooved.

Three or four species in tropical and subtropical America; West Indies.

#### **Spermacoce confusa** Rendle

RENDELE, Journ. Bot. Lond. 74: 12. 1936; FAWCETT & RENDELE, Fl. Jamaica 7: 120, fig. 37. 1936; ALAIN, Fl. Cuba 5: 140. 1962; ARNOLDO, Zakflora 121, fig. 128. 1964; Zakflora 189, fig. 128. 1964; ADAMS, Flowering plants of Jamaica 732. 1972; — *Spermacoce tenuior* Auct., non L.; BOLDINGH Fl. D.W. Ind. Isl. 1: 194. 1909; Fl. Ned. W. Ind. Eil. 380. 1913; Fl. D.W. Ind. Isl. 2: 105. 1914.

Annual, erect herb up to 60 cm tall, angles generally rather rough. Leaves lanceolate to linear-lanceolate, scabrid above and on the veins beneath, 2.5—5 × 0.2—1.2 cm, acute to acuminate at the apex, narrowed at the base, margin slightly revolute, veins impressed above and prominent beneath. Stipular sheath truncate, puberulous, 2 mm long, bristles up to 4 mm long. Calyx-lobes linear-triangular to linear-lanceolate, 0.5—1 mm long, hispidly puberulous without and glabrous within, apex acute, margin ciliolate. Corolla white, glabrous without and villous within at the upperpart of the tube; lobes ovate-oblong; apex obtuse to acute, involute, 0.5 mm long; tube 1 mm long. Stamen-filaments minute, inserted at 0.1 mm from the base of the corolla-tube; anthers dorsifixed, oblong-rounded, 0.1 mm long, thecae fused. Ovary hispidly pubescent, 1.5 mm long. Seeds oblong, brown, 1.8 × 1 mm.

Florida, from Mexico to continental South-America, and the Antilles.

ARUBA: Companashi (Arnoldo 82, fl. & fr. Dec.); calcareous soil near San Nicolas (Boldingh 6503, fl. & fr. Jan.); calcareous hills near Belashi (Boldingh 6422, fl. & fr. Jan.); Miralamar (Boldingh 6453h, fr. Dec.; Stoffers 2206, fl. & fr. Feb.); Seroe Largo (Stoffers 1864, fl. & fr. Jan.); Jamanota (Stoffers 1638, fl. & fr. Jan.); Rooi Taki (Stoffers 1894, fl. & fr. Jan.); along road in Oranjestad (Stoffers 2122, fl. & fr. Feb.; Stoffers 2137, fl. & fr. Feb.); Hooiberg (Stoffers 2112, fl. & fr. Feb.); along road in vicinity of Oranjestad (Stoffers 2075, fl. & fr. Feb.; 2064A, fl. & fr. Feb.); Rooi Prins (Stoffers 2166A, fl. & fr. Feb.; 2197, fl. & fr. Feb.); plantation near Washington (Stoffers 1530, fl. & fr. Jan.).

BONAIRE: Sabana (Arnoldo 400, fl. & fr. Jan.); Rincón (Boldingh 7136, fl. & fr. Feb.; 7005, fl. & fr. Feb.); calcareous plateau of Bolivia (Boldingh 7359, fr. Feb.).

CURAÇAO: Santa Cruz (Britton & Shafer 2984, fl. & fr. March); calcareous hills near Santa Cruz (Boldingh 5591c, fl. & fr. Dec.); hills near Barber (Boldingh 5173, fl. & fr. Nov.); from Anthony Berg to northern seashore (Boldingh 5120, fl. Nov.); Cas Cora (Burgers 84, fl. & fr. Jan.); without loc. (Boldingh 3605, fr.; Arnoldo 1948, fr. Feb.); hofje van Engelen (Boldingh 5434, fl. & fr. Nov.); Pos Kajoeda (Stoffers 1319, fl. & fr. Jan.); Klein San Michiel (Stoffers 278, fr. & fr. Oct.); Seroe Christoffel (Stoffers 1193, fl. & fr. Dec.; 1291, fl. Dec.); Heuvels Knip (Stoffers 1168, fl. & fr. Dec.); Ronde Klip (Stoffers 1263, fl. & fr. Dec.); Museum garden (Arnoldo 2136, fr. Oct.); Klein Santa Marta (Stoffers 103, fl. & fr. Sept.); Choloma (Stoffers 30, fl. & fr. Sept.); hofje near Jan Thiel (Nagelkerken 381, fr. Jan.; 357, fr. Jan.; 342, fr. Jan.).

SABA: Lower part of the Bottom Mountain, 300 m (Boldingh 1428, fl. & fr. July); along Fort Bay Gut, 150—200 m (Boldingh 1630, fl. & fr. July); between The Bottom and Mary's Point, 100—200 m (Boldingh 1521, fl. & fr. July).

ST. EUSTATIUS: slope of The Quill near Glass Bottle, 275—300 m (Stoffers 3835, fl. & fr. July); along road near Glass Bottle (Boldingh 1115, fl. & fr. June); Bengalen (Boldingh 625, fl. & fr. June); in a garden in Oranjestad (Boldingh 1084, fl. & fr. June); without loc. (van Groll-Meyer, fl. & fr.).

ST. MARTIN: Mount Paradise, 300—400 m (Boldingh 3332, fr. Sept.); Naked Boy Hill, 50—200 m (Boldingh 2683, fl. & fr. Aug.); in an orchard near Bellevue (Boldingh 2849, fl. & fr. Aug.).

**Borreria** G. F. W. Meyer, Prim. Fl. Esseq. 79. 1818, nom. cons.

Annual or perennial herbs; stems cylindrical to tetragonal. Leaves opposite. Stipules sheathing, bristly. Inflorescence consisting of axillary and terminal, sessile clusters. Calyx 2- or 4-lobed. Stamens 4; anthers included or exerted. Ovary 2-locular. Fruit a capsule, both valves opening longitudinally along their inside.

About 90 species, natives of tropical and warm regions.

Key to the species:

1. Leaves more than 3 cm long; stipular sheath with bristles longer than 4 mm; seeds brown, transversely furrowed. . . . . *B. laevis*  
Leaves 1—3 cm long; stipular sheath with bristles 2—6 mm long; seeds rough 2
2. Corolla with a ring of hairclusters below the throat; seeds 1 mm long . . . . .  
. . . . . *B. verticillata*  
Corolla glabrous to puberulous within; seeds 0.6—0.7 mm long *B. ocimoides*

**Borreria laevis** (Lam.) Gris.

GRISEBACH, Goett. Abh. 7: 231. 1857; Fl. Br. W. Ind. Isl. 349. 1861 ['1864']; URBAN, Symb. Ant. 4: 607. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 379. 1913; Fl. D.W. Ind. Isl. 2: 104. 1914; BRITTON & MILLSAUGH, Bahama Fl. 422. 1920; URBAN, Symb. Ant. 8: 689. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 255. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 44. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 123, fig. 38. 1936; ARNOLDO, Zakflora 121, fig. 145. 1954; ALAIN, Fl. Cuba 5: 138. 1962; ARNOLDO, Zakflora 186, fig. 145. 1964; GOODING *et al.*, Fl. Barbados 400, fig. 25. 1965; ADAMS, Flowering plants of Jamaica 733. 1972; FOURNET, Fl. Guadeloupe & Martinique 1176, fig. 577. 1978; — *Spermacoce laevis* LAMARCK, Encycl. Meth. III. Gen. 1: 273. 1791.

Herb, up to 60 cm tall; stems cylindrical to slightly tetragonal, glabrous to slightly puberulous. Leaves ovate, lanceolate or elliptic, 2—5.5 × 0.5—2 cm, acute to acuminate at the apex, attenuate at the base, 2—5.5 × 0.5—2 cm. Stipular sheath 3—5 mm long, bristles as long or shorter, ciliate. Inflorescence terminal or axillary. Calyx-lobes 4, ovate, minute, margin ciliate. Corolla white, glabrous without, the tube about 1 mm long, its lobes oblong, pubescent above, 2 mm long. Bracts filiform, up to 3 mm long. Stamens with filaments 2 mm long, inserted 1 mm from the base of the tube; anthers oblong, minute, exerted. Ovary oblong, slightly tetragonal, puberulous, 1—2 mm long; style 2—3 mm long; stigma capitate. Capsule obovate, 2—3 mm long. Seeds brown, transversely furrowed, 1.5—2 mm long.

West Indies, Central America, northern South America, Florida, and Bermuda.

Common weed.

CURACAO: Groot Piscadera (Burgers 94, fl. Jan.); Hato (Stoffers 45, fl. Sept.; 48, fl. Sept.); Klein St. Michiel (Stoffers 277, fl. Oct.); Zuikertuintje (Arnoldo 1844, fl. & fr. Jan.); hofje Zuurzak (Boldingh 5387, fl. Nov.); Hato (Boldingh 5343, fr. Nov.); Santa Cruz (Britton & Shafer 2997, fl. March); Julianadorp (Stoffers 326, fl. Oct.); Brakkeput Mei Mei (Stoffers 205, fl. Oct.); hofje near Weis afó (Nagelkerken 113, fl. Feb.); Groot Piscadera (Burgers 91, fl. Jan.); Santa Cruz (Britton & Shafer 3005, fl. & fr. March); hofje of Blauw (Boldingh 4901, fl.); hofje Valentijn (Boldingh 5354, fl.); Cas Cora (Stoffers 416, fl. Oct.); St. Thomas college (Arnoldo 2134, fl. Oct.).

SABA: Booby Hill, 400 m (Stoffers 4281, fl. Aug.; 4306, fl. Aug.); slope of The Mountain at the side of The Bottom, 400—500 m (Stoffers 3117, fl. & fr. Ap.); hill north-west of The Bottom, 300—350 m (Stoffers 3310, fl. & fr. May); along road from The Bottom to Windwardside (Boldingh 1337, fr. July; Stoffers 4601, fl. & fr. March; 4602, fl. & fr. March); Windwardside (Arnoldo 652, fr. Aug.); The Mountain near Hellsgate, 400 m (Boldingh 2174, fl. & fr. July); slope of The Mountain at 'under the cliff', 680 m (Stoffers 3212, fl. May; 3238, fl. May); along road from The Bottom to Crispine, 220—350 m (Stoffers 2970, fl. Ap.); without loc. (Boldingh 3606, fr. Aug.).

ST. EUSTATIUS: crater of The Quill (Burgers 199, fl. Apr.); slope of The Quill near Bengalen (Boldingh 650, fl. June); slope of The Quill, 200 m (Boldingh 876, fl. June).

***Borreria verticillata* (L.) G. F. W. Meyer**

G. F. W. MEYER, Prim. Fl. Esseq. 83. 1818; GRISEBACH, Fl. Br. W. Ind. Isl. 350. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 349. 1897; URBAN, Symb. Ant. 4: 608. 1911; Symb. Ant. 8: 689. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 256. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 45. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 125. 1936; ALAIN, Fl. Cuba 5: 139. 1962; ADAMS, Flowering plants of Jamaica 732. 1972; FOURNET, Fl. Guadeloupe & Martinique 1182. 1978; — *Spermacoce verticillata* LINNAEUS, Spec. Plant. 102. 1753; — *Borreria podocephala* DECANDOLLE, Prodr. 4: 542. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 350. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 349. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 194. 1909; Fl. Ned. W. Ind. Eil. 380. 1913.

Shrubby herb, up to 30 cm high; younger branches tetragonal, slightly winged, hispidly puberulous at angles and stipular sheath. Leaves linear to linear-lanceolate, acute at the apex, sessile, glabrous, 0.3—2.3 × 0.1—0.3 cm. Stipular sheath 1—2 mm long; bristles as long or shorter. Inflorescence mostly terminal. Calyx 2-lobed, triangular or lanceolate, 0.5—1 mm long, glabrous, between the lobes 3—5 minute bristles. Corolla white, 4-lobed, glabrous without, below the throat with a ring of hair-clusters at 0.2 mm from the base of the corolla-tube; tube 0.5 mm long, lobes deltoid, 1 mm long. Anthers oblong, exserted, 0.8 mm long; filaments sparsely pubescent, 1.5 mm long, inserted on the hair-ring. Ovary 2-locular, glabrous, 0.5 mm long; style 2 mm long; stigma capitate. Fruit obovoid-oblong, 1.5 mm long. Seeds oblong, rough, 1 mm long.

St. Eustatius, Antigua, Dominica, Cuba, Désirade, Texas, and Mexico.

In dry vegetations and along roadsides.

ST. EUSTATIUS: near Signal Hill (Boldingh 943, fl. May); between Oranjestad and Fort de Windt, 40—60 m (Stoffers 3506, fl. July); near White Wall (Stoffers 4762, fl. Aug.; 4764, fl. Aug.); White Wall (Boldingh 818b, fr. July; 815b, fl. & fr. July); hill north of Concordia Bay (Stoffers 3833, st. July); Solitude, 90 m (Stoffers 3723, fl. & fr. July); Fort Royale (Arnoldo 1368, fl. & fr.); seashore near English Quarter (Boldingh 1009, fl. June).

***Borreria ocimoides* (Burm. fil.) DC.**

DE CANDOLLE, Prodr. 4: 544. 1830; BOLDINGH, Fl. D.W. Ind. Isl. 1: 194. 1909; URBAN, Symb. Ant. 4: 607. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 380. 1913; Fl. D.W. Ind. Isl. 2: 104. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 422. 1920; URBAN, Symb. Ant. 8: 689. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 255. 1925; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 46. 1928; FAWCETT & RENDLE, Fl. Jamaica 7: 125. 1936; ARNOLDO, Zakflora 121. 1954; ALAIN, Fl. Cuba 5: 138. 1962; ARNOLDO, Zakflora 186. 1964; GOODING *et al.*, Fl. Barbados 400. 1965; ADAMS, Flowering plants of Jamaica 733. 1972; FOURNET, Fl. Guadeloupe & Martinique 1179. 1978; — *Spermacoce ocimoides* BURMAN FIL., Fl. Indica 34, t. 13, fig. 1. 1768; — *Borreria parviflora* G. F. W. MEYER, Prim. Fl. Esseq. 83. 1818; GRISEBACH, Fl. Br. W. Ind. Isl. 349. 1861 [‘1864’]; DUSS, Fl. phan. Ant. franç. 349. 1897.

Herb, up to 20 cm high; branches tetragonal, with subwinged to winged angles, glabrous to slightly puberulous on the angles. Leaves ovate or lanceolate to linear, obtuse or acute to acuminate at the apex, attenuate or obtuse to cuneate at the base, 0.8—3 × 0.4—1.2 cm, glabrous to slightly puberulous. Stipular sheath 1—3 mm long, its bristles 1.8—3.5 mm long. Calyx unequally lobed, lanceolate, acuminate, 0.5—1.2 mm; margin ciliate. Corolla white, 0.6—1 mm long, glabrous without, its lobes ovate-oblong, obtuse, minute. Anthers oblong, 0.3 mm long, included; inserted at the base of the corolla-lobes. Styles 0.2 mm long; stigma capitate. Fruit 1 mm long. Seeds oblong, brown, 0.6—0.7 mm long.

Tropics.

Rather common weed.

ARUBA: along road near Kleine Jamanota (Stoffers 2006, fl. & fr. Jan.); along road near Oranjestad (Stoffers 2064b, fl. Feb.); Hooiberg (Arnoldo 106, fl. & fr. Dec.).

BONAIRE: from Slagbaai to Brandaris (Boldingh 7314, fl. & fr. Feb.); Rincón (Boldingh 7004, fl. & fr. Feb.); Soebi Blancoe (Arnoldo 380, fl. & fr. Jan.).

SABA: road to The Mountain (Arnoldo 945, fl. & fr. Aug.; Arnoldo 810, fl. & fr. Aug.); The Mountain near Hellsgate, 400 m (Boldingh 2183, fl. & fr. July).

***Mitracarpus Zuccarini* ex Schultes, Mant. 3: 210. 1827**

Annual or perennial herbs; stems and branches mostly tetragonal, usually puberulous to villous; branches opposite. Leaves opposite; blades oblong to lanceolate. Stipules sheathing with several bristles. Inflorescence consisting of terminal and axillary dense clusters. Flowers small, white, sessile. Calyx usually unequally 4-lobed; tube subglobose. Corolla infundibuliform, 4-lobed, valvate. Stamens 4, inserted at the mouth of the corolla-tube, included or exerted; anthers dorsifixed. Disk formed by 2 glands. Ovary usually 2-locular; stigma 2-lobed. Ovules solitary in each locule. Capsule membranaceous, dehiscent transversally, the upper part with the persistent calyx. Seeds ovate, ventrally 4-lobed by a cross-shaped furrow.

About 15 species, mainly tropical American, also in tropical Africa and the Pacific.

Key to the species:

1. Shrubby, woody herb; leaves linear-lanceolate; corolla longer than 3 mm . . .  
..... *M. polycladus*  
Not shrubby, woody herb; leaves oblong to lanceolate; corolla shorter than 3 mm  
..... *M. villosus*

**Mitracarpus polycladus** Urb.

URBAN, Symb. Ant. 3: 389. 1903; BOLDINGH, Fl. D.W. Ind. Isl. 1: 194. 1909; URBAN, Symb. Ant. 4: 609. 1911; Symb. Ant. 7: 551. 1913; BOLDINGH, Fl. Ned. W. Ind. Eil. 381. 1913.

Annual, shrubby herb, up to 45 cm tall; stems tetragonal, woody, glabrous and towards the nodes sometimes slightly winged angles and puberulous. Leaves linear-lanceolate or narrowly oblong, subsessile, glabrous, 1.5—4 × 0.2—0.8 cm, acute or mucronate at the apex, narrowed at the base, margin entire, revolute, midrib impressed above and prominent beneath. Stipular sheath glabrous to puberulous, 1.5—2 mm long, bristles up to 2 mm long. Inflorescence mostly consisting of terminal clusters. Calyx-lobes linear-triangular, glabrous, margin ciliate, 2 long lobes about 1.8 mm, 2 short lobes about 1 mm long. Corolla glabrous; tube 3 mm long, lobes ovate, 1.3 mm long, apex acute and involute. Stamens exserted; filaments 0.5 mm long; anthers oblong, 0.6 mm long, thecae fused. Ovary 1—1.2 mm long, glabrous; style filiform, 3.5—4 mm long. Seeds dark brown, 1 mm long.

Puerto Rico and Saba.

In drier part of the island.

SABA: Fort Bay (Arnoldo 897, fl. & fr. Aug.); Parish hill (Boldingh 1377, fl. & fl. July); Ladder Gut, 0—200 m (Boldingh 1970, fl. & fr. July); along roads from The Bottom to Windwardside (Boldingh 1322, fl. & fr. July); sulphur mines (Hummelinck s.n., fl. & fr. July); Compagnie's Gut, 150—300 m (Stoffers 3010, fl. & fr. Apr.; 3020, fl. Apr.); Jenkins Hill, 350 m (Stoffers 3160, fl. & fr. May; 3131, fl. & fr. May); Ladder Gut, 0—100 m (Stoffers 2836, fl. & fr. Apr.); Fort Bay Gut, 0—100 m (Stoffers 2881, fl. & fr. Apr.); without loc. (Arnoldo 616, fl. & fr.).

**Mitracarpus villosus** (Sw.) Cham. & Schlechtd.

CHAMISSO & SCHLECHTENDEN, Linnaea 3: 363. 1828; DECANDOLLE, Prodr. 4: 572. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 350. 1861 ['1864']; BOLDINGH, Fl. D.W. Ind. Isl. 1: 194. 1909; FAWCETT & RENDLE, Fl. Jamaica 7: 127, fig. 39. 1936; ALAIN, Fl. Cuba 5: 143. 1962; GOODING *et al.*, Fl. Barbados 405. 1965; ADAMS, Flowering plants of Jamaica 733. 1972; — *Mitracarpus hirtus* auct., non DECANDOLLE; BOLDINGH, Fl. Ned. W. Ind. Eil. 381. 1913; Fl. D.W. Ind. Isl. 2: 105. 1914; WILLIAMS & CHEESMAN, Fl. Trinidad & Tobago 2: 48. 1928; FOURNET, Fl. Guadeloupe & Martinique 1174, fig. 576. 1978; — *Spermacoce villosa* SWARTZ, Prodr. Veg. Ind. Occ. 29. 1788; — *Spermacoce hirta* LINNAEUS, Spec. Plant. ed. 2. 148. 1762.

Annual herb, sometimes with a woody base, up to 20 cm tall. Stems tetragonal, glabrous to puberulous at the base, towards the top pubescent; the angles villous towards the nodes and sometimes slightly winged. Leaves oblong to lanceolate, acute at the apex, narrowed at the base, margin ciliate, 2—4.2 × 0.5—1 cm, hispid-puberulous throughout, densely on the nerves beneath; midrib slightly impressed above and prominent beneath. Stipular sheath 1—2 mm long, hirsute, densely hirsute where fused with leafbase; margin with 10 (or more) bristles, 2 mm long, ciliate and between the bristles hispidly haired. Inflorescence consisting of terminal or axillary clusters. Calyx-lobes linear-triangular, margin ciliate, 2 long lobes about 1.5—2 mm, 2 short lobes about 1 mm long. Corolla tube 1.5 mm long, lobes ovate-oblong, acute, at the apex a few hispid hairs without, about 0.6 mm long. Stamens included; filaments minute; anthers oblong-rounded, 0.3 mm long, thecae fused. Ovary sparsely hirsute, 1 mm long; style filiform, 1.5 mm long. Seeds about 0.8 mm long.

West Indies and tropical America.

Common weed.

ARUBA: Miralamar (Boldingh 6445, fl. & fr. Jan.; Stoffers 1612, fl. & fr. Jan.); Tanki Leendert (Boldingh 6264, fl. & fr. Dec.); hills near Savaneta (Boldingh 6528, fl. & fr.); road near Ajó (Boldingh 6343, fl. & fr.); road near Savaneta (Boldingh 6519, fl. & fr. Jan.); Rooi Taki (Stoffers 1894A, fl. & fr. Jan.); Rooi Prins (Stoffers 2166B, fl. & fr. Feb.); along road near Kleine Jamanota (Stoffers 2011, fl. & fr. Jan.; Stoffers 2006A, fl. & fr. Jan.); Hooiberg (Stoffers 2100, fl. & fr. Feb.); West of Kivarko (Stoffers 1987, fl. & fr. Jan.; 1979, fl. & fr. Jan.); Hooiberg (Arnoldo 131, fl. & fr. Dec.).

CURAÇAO: near Pedro Molina, Seroe Christoffel, 300 m (de Wilde 170a, fl. & fr. Jan.); Santa Cruz (Britton & Shafer 3026, fl. & fr. March); hills near Westpunt (Boldingh 5572, fl. & fr. Nov.); hills near Rooi Behoenda (Boldingh 5534, fl. & fr. Dec.); Seroe Christoffel (Stoffers 1199, fl. & fr. Dec.); hills near Knip (Stoffers 1169, fl. & fr. Dec.); without loc. (Boldingh s.n., fl. & fr.).

SABA: road to Windwardside (Arnoldo 923, fl. & fr. Aug.); Windwardside (Arnoldo 701, fl. & fr. Aug.); St. Giles (Boldingh 1863, fl. & fr. July).