

NYCTAGINACEAE

by

L. Y. TH. WESTRA and A. L. STOFFERS

(Instituut voor Systematische Plantkunde, Utrecht)

Herbs, shrubs or trees with abnormal secondary growth. Leaves often opposite or subopposite to alternate, simple. Stipules absent. Flowers cymosely arranged in panicles or corymbs, rarely in umbels or subcapitate, hermaphrodite or unisexual, commonly 5-merous, subtended by a variable number of bractlets which may be small, mostly, or large and conspicuous as in the well-known cultivated genus *Bougainvillea*, sometimes forming a gamophyllous involucre as in *Mirabilis*. Perianth single, gamophyllous, often corolla-like, the lower part enclosing the ovary and accrescent with the fruit. Stamens essentially in 1 or 2 whorls, but often irregular in number due to reduction or multiplication; filaments often filiform, more or less united at the base; anthers 2-locular, the thecae reniform or semi-circular. Ovary superior, often stipitate, uni-locular, 1-carpellate; style usually elongate; stigma entire or penicillate. Ovule 1, basal, campylotropous or anatropous. Pericarp very thin, more or less adhering to the testa, the fruit tightly enclosed by the expanded lower part of the perianth which together with the fruit constitutes the anthocarp; anthocarp dry achenium-like or drupe-like, sometimes provided with sticky glands or glandular hairs. Embryo straight or curved; cotyledons frequently unequal. Perisperm present, but often more or less absorbed by the embryo.

About 250 species in c. 25 genera, in tropics and subtropics, especially in America.

Key to the genera:

1. Perianth large, 3 cm or more long, subtended by a gamophyllous involucre;
herb *Mirabilis*
Perianth less than 1 cm long; bractlets free 2
2. Trees or shrubs, usually dioecious 3
Herbs, often lignified at the base; flowers hermaphrodite 4

3. Anthocarp eglandular, drupe-like; male flowers narrowly campanulate, glandless; plants unarmed *Guapira*
 Anthocarp with 1 or 2 rows of stipitate glands on the angles, leathery; male flowers broadly campanulate or narrowly campanulate and then bearing small rows of rudimentary glands; plants armed or unarmed *Pisonia*
4. Clambering herb; anthocarps with glands in the upper part, shallowly ribbed *Commicarpus*
 Erect, repent or ascending herb; anthocarps eglandular but with or without sticky hairs, 5-ribbed or 5-angular *Boerhavia*

Guapira Aublet, Hist. Plant. Guian. 1: 308; 3: t. 119. 1775

Dioecious¹⁾ shrubs or trees. Leaves opposite to subopposite. Inflorescence corymbose, terminal or terminal on short lateral branches, the female ones enlarging during fruiting stage. Flowers cymosely arranged, sessile or nearly so, subtended by small bractlets. Male perianth narrowly campanulate to funnel-shaped, shallowly lobed; stamens exerted, mostly 6—9 in number; filaments unequal, filiform, united into a short tube at the base; the anthers didymous; pistillode shaped as the pistil in the female flowers but with obvious reduction of the stigma. Female perianth tubular and often somewhat widened at the mouth, shallowly and minutely 5-lobed, constricted at the throat by a fleshy thickening; staminodes minute, entirely included or sometimes the reduced anthers visible in the throat of the perianth; the filaments united at the base into a short tube; ovary ovoid to ellipsoid, narrowed into a short stipe at the base and narrowed into the style at the top; style exerted; stigma penicillate. Anthocarp eglandular, drupe-like, crowned by the persisting small upper part of the perianth, the wall consisting of a fleshy and coloured outer layer and a lignified more or less longitudinally ribbed inner layer enclosing the fruit. Embryo straight; cotyledons unequal, the larger one envelopping the smaller one.

Numerous species in Florida, Bahamas, the West Indies, Central- and South America; many of them poorly delimited.

Key to the species:

1. Male flowers 4—5 mm long, usually green to somewhat reddish; leaves membranaceous or thinly leathery, smooth, veins not or scarcely protruding *G. pacurero*
 Male flowers 3—4(—6) mm long, usually yellowish; leaves more or less leathery with prominulous tertiary veins, the secondary veins prominent *G. fragrans*

1) In exceptional cases plants may also develop hermaphrodite flowers.

Guapira pacurero (H.B.K.) Little

LITTLE, *Phytologia* 17: 368. 1968; — *Pisonia pacurero* HUMBOLDT, BONPLAND & KUNTZE, *Nov. Gen. & Spec.* 2: 218. 1818; — *Torrubia pacurero* (H.B.K.) STANDLEY, *Contr. U.S. Nat. Herb.* 18: 101. 1916; — *Pisonia bonairensis* BOLDINGH, *Fl. Ned. W. Ind. Eil.* 183. 1913; *Fl. D.W. Ind. Isl.* 2: 27, plate 2. 1914; ARNOLDO, *Zakflora* 32. 1954; *Zakflora* 171. 1964.

Small tree or shrub, mostly up to 6 m tall; branchlets terete to angular or wrinkled. Leaves opposite or subopposite, those of a pair sometimes slightly unequal, petiolate; blade chartaceous to thinly coriaceous, elliptic to long-elliptic, acuminate at the apex, obtuse to acute at the base, the margin entire, more or less undulate, lateral veins 5—7, glabrous, 2—3.5 × 5—12.5 cm; petiole 1—4 cm long. (Male) corymbs glabrous, few- to many-flowered, dense or open, about 2—3 cm in diam. or rarely more; peduncle 2—8 cm long, slender. Male flowers: perianth narrowly campanulate to funnel-shaped, green or somewhat reddish, 4—6 mm long and 3—4.5 mm in diam.; stamens 6—7 (—9), exserted; filaments filiform, up to about twice as long as the perianth; pistillode included in the perianth. Female flowers: perianth tubular with somewhat expanded mouth, 2—2.5 mm long; style exserted; stigma penicillate. Mature anthocarp narrowly ellipsoid, about 1 cm long, shiny purplish-black. This species is often easy to recognize in the herbarium because of its retaining a greenish colour in the dried state, whereas *G. fragrans* turns greyish or greyish-brown.

Columbia, Venezuela, Trinidad, Curaçao, Aruba, and Bonaire.

Vernacular names: labra, mahubari, mashibari, musti samber, manguel shimaron (Leeward Group).

ARUBA: calcareous hills near Belashi (Boldingh 6430, male fl. Jan.); along road near Seroe Pretoe (Stoffers 1679, male fl. June); hills near Savaneta (Boldingh 6532, st. Jan.); Miralamar (Stoffers 2192, st. Feb.; 2195, st. Feb.); slope of Jamanota (Boldingh 6299, st. Dec.); slope of Hooiberg (Boldingh 6365, st. Dec.).

BONAIRE: Fontein (Arnoldo 2279, fl. & fr. Aug. [NY]); calcareous plateau near Fontein (Boldingh 7248, st. Feb.); Hobau (Stoffers 1040, fem. fl. Dec.); slope of Joewa (Boldingh 7200, defl. Feb.; 7222, defl. Feb.); hills near Saliña Playa Grandi (Boldingh 7293, st. Feb.); Rincón (Boldingh 7022, st. Feb.).

CURAÇAO: near Davelaar (Boldingh 5401, fem. fl. Nov., type of *Pisonia bonairensis* BOLD.); hills near Barber (Boldingh 5180, st. Nov.; 5182, male fl. Nov.); calcareous hills near Hermanus (Boldingh 5224, st. Dec.; 5077, defl. Dec.); Seroe Christoffel (Stoffers 235, male fl. Oct.; Arnoldo 1733, male fl. Oct.); Groot Santa Marta (Stoffers 123, fem. fl. Sept.); hofje of Knip (Boldingh 5539, st. Dec.); hills between Hieronymus Berg and Savonet (Boldingh 5128, fem. fl. Nov.); Ronde Klip (Arnoldo 1114, fem. fl. Sept.); hills near Blein (Boldingh 5515, st. Oct.); Anthony Berg (Boldingh 5146, st. Nov.); hills near Brakkeput Ariba (Boldingh 5548, st. Nov.); without loc. (Realino 12, fr. [NY]; Arnoldo 59, fem. fl.).

Guapira fragrans (Dum.-Cours) Little

LITTLE, *Phytologia* 17: 368. 1968; ADAMS, *Flowering plants of Jamaica* 263. 1972; — *Pisonia fragrans* DUMONT-COURS, *Bot. Cult. ed. 2*, 7: 114. 1814; URBAN, *Symb. Ant.* 4: 225. 1905; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 61. 1909; *Fl. Ned. W. Ind. Eil.* 184. 1913; *Fl. D.W. Ind. Isl.* 2: 27. 1914; FAWCETT & RENDLE, *Fl. Jamaica* 3(1): 152. 1914; URBAN, *Symb. Ant.* 8: 210. 1920; QUESTEL, *Fl. Isl. St. Bartholomew* 103. 1941; ARNOLDO, *Zakflora* 32, fig. 51. 1954; *Zakflora* 171, fig. 51. 1964; GOODING *et al.*, *Fl. Barbados* 146. 1965; — *Torrubia fragrans* (DUM.-COURS) STANDLEY, *Contr. U.S. Nat. Herb.* 18: 100. 1916; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 287. 1924; LEON & ALAIN, *Fl. Cuba* 2: 129. 1951; — *Pisonia fragrans* DUM.-COURS var. *oblanceolata* HEIMERL, in URBAN, *Symb. Ant.* 7: 213. 1912; — *Pisonia obtusata* AUCT. non JACQUIN; SWARTZ, *Fl. Ind. Occ.* 1960, 1806; DUSS, *Fl. phan. Ant. franç.* 62. 1897.

Tree or shrub, up to 15 m tall; branches ascending, greyish or greyish-brown; branchlets often angular or wrinkled, greyish- or rufo-puberulent. Leaves very variable; blade elliptic, obovate-elliptic to obovate-lanceolate or obovate, rounded to acuminate at the apex, attenuate to acute at the base, 3—11 × 2—6 cm, glabrous, fleshy or leathery, veins distinct, slightly arcuate, the lateral veins 4—7 on each side of the midvein, but often appearing more numerous due to the development of intercalary veins; petioles glabrous, 0.5—1.5 cm long, slender to stout. Inflorescence consisting of few- to many-flowered corymbs mostly up to 3 cm wide; peduncle 2—9 cm long, brown-puberulous when young, at length glabrate. Flowers yellowish. Male flowers: perianth funnel-shaped to narrowly campanulate, 3—4(—6) mm long and 3—4.5 mm wide, puberulent; stamens 6—8, exserted; filaments filiform, up to 2—2.5 times as long as the perianth; pistillode included in the perianth or slightly exserted. Female flowers: perianth tubular, with or without a somewhat expanded mouth, 2.5—3 mm long, puberulent; style exserted; stigma penicillate. Mature anthocarp oblong-ellipsoid, 7—11 mm long and 3—4 mm in diam., purplish-black.

West Indies, Colombia, and Venezuela.

Vernacular names: black loblolly tree (Windward Group).

ARUBA: Hooiberg (Arnoldo 119, male fl. Dec.); hills near Savaneta (Boldingh 6533, st. Jan.).

BONAIRE: slope of Macutucau (Boldingh 7123, st. Jan.); calcareous plateau of Bolivia (Boldingh 7360, st. Feb.; 7372, st. Feb.; 7422, st. Feb.); calcareous plateau of Montagne (Boldingh 7416, st. Feb.; Arnoldo 511, fem. fl. July); Hobau (Stoffers 1034, defl. Dec.); along road from Kralendijk to Rincón (Stoffers 844, male fl. Dec.).

CURAÇAO: Seroe Christoffel, 200—300 m (Stoffers 233, male fl. Oct.; 238, male fl. Oct.; Arnoldo 1731, male fl. Oct.; Suringar s.n., st. Jan. [L]; Boldingh 5002, fl. Nov.); Rooi Kajoeda (Arnoldo 1115, male fl. Sept.); hills near Malpais (Boldingh 4857, fr. Oct.); hofje Abau (Curran & Haman 104, st. Feb. [HUC, NY]); from Knip to Westpunt (Boldingh 5577, st. Nov. [U, L]); calcareous soil near Knip (Boldingh 5564, st. Nov.); Klein Santa Marta (Curran & Haman 138, st. Feb. [HUC, NY]);

Kleine Berg? (Boldingh 5464, st. Nov.); hills near Knip (Arnoldo 2271, male fl. Aug.).

ST. EUSTATIUS: Miss Raders Ravine (Suringar s.n., flb. May [L]); Cultuurvlakte (Stoffers 3789, fl. & fr. July 1); Little Mountains (Stoffers 3535, st. July); from Signal Hill to Venus Bay (Boldingh 959a, st.); from Schotsen Hoek to Little Mountains (Stoffers 3547, defl. July); western slope of The Quill, 250—300 m (Stoffers 4709, st. Aug.; 4721, st. Aug.; 4722, st. Aug.; 4723, st. Aug.); top of The Quill near Glass Bottle (Stoffers 3575, defl. July); slope of The Quill near Bengalen (Boldingh 707, st. June); *ibid.*, 200 m (Boldingh 738, fem. fl. June); top of The Quill, 400—500 m (Stoffers 3909, fl. & fr. July; 3960, st. July; Boldingh 478, defl. June; 489, defl. June 357, flb. June; 172, flb.; 362, st. June; 337 flb. June; 177, st. June); slope of The Quill between Glass Bottle and White Wall, 150—300 m (Stoffers 4115, fr. Aug.; 4114, st. Aug.; 4050, defl. Aug.); inner slope of The Quill, 250—300 m (Boldingh 425, st. June); bottom of The Quill (Stoffers 3665, st. July; 3636, st. July); Boven (Suringar s.n., st. Ap. [L]; Boldingh 1242, fem. fl. June); along road from Oranjestad to White Wall (Boldingh 4, flb. May); without loc. (v. Groll-Meyer 180, defl.; Boldingh s.n., flb.; Boldingh s.n., fr. June).

ST. MARTIN: Mount Paradise, 200—300 m (Boldingh 3312, st. Sept.); John Edney Hill (Suringar s.n., st. May [L]); between Mont Vernon and Orient Bay (Boldingh 2927, flb. Aug.); Cole Bay Hill (Stoffers 4502, fr. Aug.; 4506, fr. Aug.); Sentry Hill (Stoffers 4523, fem. fl. Aug.; 4530, fem. fl. Aug.); from Marigot Hill to Marigot, 200—0 m (Boldingh 2649, st. Aug.); lower parts of hill between Mont Chambord and Mont Vernon (Boldingh 2918, flb. Aug. [U, L]; 2921, st. Aug.); Naked Boy Hill, 50—200 m (Boldingh 2704, fem. fl. Aug.); along road from Grande Case to Marigot (Boldingh 3091, flb. Sept.).

ISLAND?: (Boldingh s.n., fem. fl. & fr.).

Pisonia Linnaeus, Spec. Plant. 1026. 1753

Trees, shrubs or woody vines, sometimes armed with spines. Leaves opposite or partly alternate. Inflorescence corymbose, terminal, often on short shoots. Flowers sessile or shortly pedicellate, with 2—4 bractlets, most species dioecious but some with hermaphrodite flowers. Male (or hermaphrodite) flowers: perianth broadly campanulate to tubular-campanulate or funnel-shaped, the limb 5-lobed; stamens 6—10, exserted; filaments unequal, filiform, united into a short tube at the base; anthers didymous; pistillode present. Female flowers: perianth tubular, the limb 5-lobed, throat narrowed by a fleshy thickening; staminodes included in the perianth, subulate, short, with or without rudiments of anthers, or absent; ovary stipitate; style slender; stigma penicillate. Anthocarp coriaceous, bearing (in the Antillean species) longitudinal rows of stipitate glands, the stalks of which produce a very sticky substance, oblong, clavate or obovoid to ellipsoid, 5-ribbed, the small perianth lobes persisting. Embryo straight; cotyledons unequal, the larger one enveloping the smaller one. Perisperm scanty.

About 30 species, tropical and subtropical regions of the New World, and Old World tropics.

1) In no 3789 the anthocarps probably originated from hermaphrodite flowers.

Key to the species:

1. Tree or shrub, unarmed; male flowers narrowly campanulate; anthocarp bearing glands in the upper part only *P. subcordata*
Straggling shrub or vine, usually with recurved spines; male flowers broadly campanulate; anthocarp bearing glands over their whole length 2
2. Anthocarp up to 3 mm in diam., bearing single rows of glands; lateral veins of the leaves usually evident *P. aculeata*
Anthocarp up to about 5 mm in diam., bearing double rows of glands; lateral veins of the leaves more or less obscure *P. helleri*

Pisonia subcordata Sw.

SWARTZ, Prodr. Veg. Ind. Occ. 60. 1788; GRISEBACH, Fl. Br. W. Ind. Isl. 70. 1859; Duss, Fl. phan. Ant. franç. 61. 1897; URBAN, Symb. Ant. 4: 226. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 62. 1909; Fl. Ned. W. Ind. Eil. 184. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 288. 1924; QUESTEL, Fl. Isl. St. Bartholomew 103. 1941; ADAMS, Flowering plants of Jamaica 262. 1972.

A moderate-sized tree, unarmed, often with a very stout trunk; branches grey or brownish; branchlets stout, ferruginous- or brownish-puberulent when young, soon glabrate. Leaves opposite or subopposite, petiolate; blade ovate to elliptic or suborbicular, 5—11 × 4—9 cm, acute or obtuse to rounded or slightly emarginate at the apex, rounded, subcordate or abruptly attenuate at the base, deep-green, coriaceous, glabrous or sparsely pubescent along the veins beneath; lateral veins 5—6 on each side, prominent; petiole slender to stout, 1—3 cm long, puberulent when young, glabrous in age. Inflorescence of male flowers densely corymbose, 2—4 cm in diam., flowers sessile or very shortly pedicellate, green or greenish-yellow; bracteoles deltoid to lanceolate-linear, about 1 mm long; perianth narrowly campanulate, shallowly lobed, (2—)3—4 mm long, puberulent and provided with 5 rows of vestigial glands near the middle or in the upper half; stamens 6—8, exserted; filaments filiform, up to 1.75 times as long as the perianth; pistillode included in the perianth or slightly exserted. Flowers occasionally hermaphrodite and then resembling the male ones. Female inflorescence corymbose, up to 2 cm in diam.; flowers sessile or pedicellate; bracteoles lanceolate-linear to linear, 1—1.5 mm long; perianth tubular, about 2 mm long; staminodes very small, usually up to about 0.5 mm long, united at the base; ovary ovoid to narrowly ellipsoid, narrowed into a stipe at the base, more or less gradually passing into the long, exserted style. Mature anthocarp cylindrical to clavate, up to 1.25 cm long, 5-angled particularly in the upper half, the glands along the angles in the upper third, uniseriate; the infructescence up to 7 cm in diam.

Virgin Islands and Puerto Rico to Martinique.

Vernacular name: mappoo (Windward Group).

SABA: Fort Bay Gut, 170 m, between Thais Hill and Promised Land (Stoffers 3419, male fl. May); Promised Land, 220 m (Stoffers 3416, fr. May); Mary's Point (Suringar s.n., male fl. Ap. [L]); between The Bottom and Mary's Point, 350 m (Boldingh 1498, st. July).

St. EUSTATIUS: Panga (Suringar s.n., fr. Ap. [L]); along road from Oranjestad to Fort de Windt (Stoffers 3514, st. July); Cultuurvlakte (Suringar s.n., fr. Ap. [L]); between Glass Bottle and White Wall, 250 m (Stoffers 4077, st. Aug.); slope of The Quill near Bengalen (Stoffers 3786, st. July; Boldingh 714, st. June); Little Mountains (Stoffers 3536, st. July); top of The Quill, 400 m (Boldingh 185, st. June; Stoffers 3936, st. July); top of The Quill near Glass Bottle, 380—400 m (Stoffers 3561, st. July); top of The Quill, 450 m (Boldingh 370, st. June); near White Wall (Stoffers 4766, st. Aug.); seashore near Oranjestad (Boldingh 25, st. May); in deserted plantation at the seashore near Bengalen (Boldingh 596, st. June); without loc. (v. Groll 181, fr.).

St. MARTIN: Williams Hill, 100—160 m (Stoffers 2540, hermaphrodite fl. & fr. March 2542, fr. March; 2545, flb. March; 2553, male fl. March); Fort Amsterdam (Suringar s.n., fem. fl. Ap. [L]); Low Lands (Stoffers 2684, fr. Ap.); Pointe Blanche (Stoffers 2557, fem. fl. March); from Philipsburg to Guana Bay (Boldingh 2373, st. Aug.); Princess Quarter (Boldingh 2471, st. Aug.); gut from Bethlehem to Cul de Sac, 100—200 m (Boldingh 3427, st. Sept.); Simson Bay (Arnoldo 1284, male fl. March).

***Pisonia aculeata* L.**

LINNAEUS, Spec. Plant. 1026. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 70. 1859; Duss, Fl. phan. Ant. franç. 61. 1897; URBAN, Symb. Ant. 4: 226. 1905; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 208. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 1: 61. 1909; Fl. Ned. W. Ind. Eil. 183. 1913; FAWCETT & RENDLE, Fl. Jamaica 3(1): 151, fig. 51. 1914; URBAN, Symb. Ant. 8: 211. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 132. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 287. 1924; QUESTEL, Fl. Isl. St. Bartholomew 103. 1941; LEON & ALAIN, Fl. Cuba 2: 130, fig. 49. 1951; GOODING *et al.*, Fl. Barbados 146. 1965; ADAMS, Flowering plants of Jamaica 262. 1972.

Straggling shrub or woody vine, climbing high in trees; branches stout, drooping or subsucculent, usually armed with stout, recurved or rarely straight spines of 1—1.5 cm in length; branchlets at right angles or almost so, densely puberulent or short-villous, rarely glabrate. Leaves opposite, subopposite or rarely alternate, petiolate; blade variable in shape, elliptic-ovate, ovate-oblong, subrhombic, obovate, ovate, obovate-orbicular or orbicular, acuminate, acute or obtuse at the apex, broadly or narrowly cuneate, rounded or subcordate at the base, 3—15 × 2—6 cm, somewhat coriaceous, lustrous and glabrous or puberulent on the upper surface, glabrate, puberulent or short-villous beneath, always sparsely pubescent along the veins, lateral veins 4—6 on each side; petiole slender or stout, 0.5—3.5 cm long. Inflorescence usually terminal on short shoots, densely or loosely corymbose, puberulous to pubescent. Male flowers: perianth broadly campanulate, 3—4 mm long, puberulent, sometimes also bearing minute vestigial glands in 5 rows, yellowish-green, the lobes triangular, broad-acutish; stamens usually 6—10, about 1.5—2.5 times as long

as the perianth; pistillode included in the perianth or slightly exserted. Female flowers: perianth tubular, 2—2.5 mm long, puberulent, greenish-yellow; staminodes usually absent; ovary ovoid to ellipsoid-oblongoid, narrowed into a stipe at the base and gradually narrowed into the style at the top. Mature anthocarp oblongoid to cylindrical, up to 10(—13) × 3 mm, rounded at the apex, narrowed at the base, 5-angled, each angle with a single row of viscid glands.

A very variable pantropic species.

Vernacular name: cockspur (Windward Group).

SABA: Rendez-Vous (Suringar s.n., st. Ap. [L]); lower part of the Bottom Mountain (Boldingh 1452, st. July).

ST. EUSTATIUS: slope of hill near Concordia Bay (Suringar s.n., fl. & fr. Ap. [L]); Little Mountains (Stoffers 3743, st. July); between Little Mountains and Venus Bay (Boldingh 957, st. June); Venus Bay (Suringar s.n., fr. Ap. [L]); Concordia (Arnoldo 1367, male fl. March).

ST. MARTIN: Kanaal Rolandus (Stoffers 2262, fr. March); mountain between Mont des Accords and Sentry Hill, 200—300 m (Boldingh 2873, st. Aug.); along road in Cul de Sac (Stoffers 2433, male fl. March; 2435, fl. March); Middle Region (Arnoldo 3393, male fl. Jan.); Princess Quarter (George s.n. sub Boldingh 2467, st. Aug.); hills along northern side of Cul de Sac (Stoffers 2645, male fl. Ap.); Cole Bay Hill (Suringar s.n., male fl. May [L]); from Philipsburg to Belvedere (Boldingh 2556, st. Aug.).

***Pisonia helleri* Standl.**

STANDLEY, in N. Am. Fl. 21(3): 187. 1918; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 288. 1924; LEON & ALAIN, Fl. Cuba 2: 131. 1951.

Much resembling *Pisonia aculeata*, but differing in the following characters: leaf-blades mostly elliptic, obtuse to acuminate at the apex, attenuate to tapering at the base, rarely approaching to broadly elliptic or suborbicular, obtuse to rounded at the apex and shortly attenuate to truncate at the base, lateral veins more or less obscure; perianth of female flower often pubescent to tomentose. Mature anthocarps obovoid up to 14 × 5(—6) mm, pentagonal, the angles bearing glands in double rows.

Cuba, Jamaica, Puerto Rico and probably several islands of the Lesser Antilles, also in Central America and recorded from Venezuela.

SABA: Quarter (Suringar s.n., fr. Ap. [L]); hill north-west of The Bottom, 300—350 m (Stoffers 3303A, fr. May).

***Mirabilis* Linnaeus, Spec. Plant. 177. 1753**

Perennial herbs, usually much branched; stems often swollen at the nodes. Leaves opposite, sessile or petiolate, entire or undulate, often asymmetric.

Inflorescence consisting of terminal or axillary cymes. Flowers hermaphrodite. Bractlets forming a 5-lobed calyx-like, gamophyllous involucre around the base of one or several flowers, often accrescent in age. Perianth corolla-like, campanulate to funnel-shaped or salverform, its tube short or elongate, constricted above the ovary, the limb 5-lobed. Stamens 3—5, exserted, unequal; filaments slender, filiform, united into a fleshy cup at the base; anthers didymous. Ovary sessile, ellipsoid or obovoid; style filiform, exserted; stigma capitate, papillose. Anthocarp coriaceous, obovoid to globose, angular or costate, glabrous or pubescent, often rugose or tuberculate, more or less constricted at both ends. Embryo curved, with broad cotyledons. Perisperm farinaceous.

About 60 species; one native of south-eastern Asia, the other ones American (vide Heimerl, 1934).

Mirabilis jalapa L.

LINNAEUS, Spec. Plant. 177. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 69. 1859; Duss, Fl. phan. Ant. franç. 59. 1897; URBAN, Symb. Ant. 4: 224. 1905; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 208. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 1: 60. 1909; Fl. Ned. W. Ind. Eil. 181. 1913; Fl. D.W. Ind. Isl. 2: 26. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 147, fig. 49. 1914; URBAN, Symb. Ant. 8: 208. 1920; BRITTON & MILLSAUGH, Bahama Fl. 129. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 285. 1924; QUESTEL, Fl. Isl. St. Bartholomew 102. 1941; LEON & ALAIN, Fl. Cuba 2: 132, fig. 50. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 92, fig. 144. 1954; GOODING *et al.*, Fl. Barbados 145. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 203, fig. 144. 1971; ADAMS, Flowering plants of Jamaica 260. 1972.

A much branched, erect herb, up to 80 cm tall; branches slender or stout, glabrous, puberulent or somewhat villous, often viscid. Leaves petiolate; blade entire, ovate-deltoid, broadly ovate or ovate-oblong, acute, acuminate or obtuse at the apex, truncate or subcordate at the base, glabrous or puberulent, ciliolate, 4—14 × 2—8 cm; petioles slender, up to 5 cm long. Inflorescence consisting of terminal cymose clusters, borne on 1—3 cm long peduncles and accompanied by reduced leaves. Involucre campanulate, enclosing one flower, 7—8 mm long, glabrous, puberulent or short-villous, lobes longer than the tube, linear-lanceolate to lanceolate, acute at the apex, ciliate. Perianth funnellform, variable in colour, red, purple, yellow or white, often more or less blotched, glabrous or sparsely villous outside, 3—6 cm long, the tube 2—5 mm in diam., gradually dilated upwards, the limb up to 4 cm wide, shallowly 5-lobed, the lobes broadly rounded. Stamens 5, exserted, often curved upwards in their apical half. Mature anthocarp obovoid or ovoid, 5-ribbed, verrucose or rugose, dark-brown to black, glabrous or puberulent, 7—9 mm long.

Continental tropical America from Mexico southward; common in the West Indies, but probably naturalized; adventitious in Florida; widely cultivated and naturalized in the tropics of the Old World. Commonly planted in gardens.

Cultivated in the Netherlands Antilles; escaped from cultivation in Saba.

Vernacular names: vier uur bloem (Leeward Group).
four o'clock (Windward Group).

SABA: Peperpot (Suringar s.n., fl. Ap. [L]); The Bottom (Suringar s.n., fl. Ap. [L]); lower part of the Bottom Mountain, 250 m (Boldingh 1417, fl. July); Booby Hill (Arnoldo 679, fl. Aug.); Hellsgate (Stoffers 3375, fl. & fr. May).

ST. EUSTATIUS: Oranjestad (Suringar s.n., fl. Ap. [L]); Boldingh 1253, fl. & fr. June); without loc. (v. Groll-Meyer 239, fl.; 240, fl. & fr.; 247, fl.).

Commicarpus Standley, Contr. U.S. Nat. Herb. 12: 373. 1909

Perennial herbs, undershrubs or shrubs, usually decumbent or reclining, pubescent or glabrous; stems much branched. Leaves opposite, those of a pair subequal; blades entire or sinuate, more or less succulent. Flowers hermaphrodite, umbellate or in superposed whorls. Bracts deciduous; bracteoles rarely present. Upper perianth part funnel-shaped to campanulate, corolla-like, with \pm shallowly 5-lobed limb, lower part tubular or obconical, constricted above the ovary and provided with developing glands. Stamens 2—5; filaments exerted, connate at the base; anthers didymous. Ovary stipitate, attenuate into the filiform style; stigma peltate. Mature anthocarp cylindrical-fusiform to clavate, symmetric, shallowly ribbed to striate, pubescent or glabrous, bearing a number of viscid glands. Embryo uncinata. Perisperm scanty.

About 20 species in the tropics and subtropics.

Commicarpus scandens (L.) Standl.

STANDLEY, Contr. U.S. Nat. Herb. 12: 373. 1909; STANDLEY in N. Am. Fl. 21(3): 215. 1918; BRITTON & MILLSPAUGH, Bahama Fl. 131. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 286. 1924; LEON & ALAIN, Fl. Cuba 2: 134. 1951; ARNOLDO, Zakflora 56, 107, 120. 1954; Zakflora 171. 1964; ADAMS, Flowering plants of Jamaica 260. 1972; — *Boerhavia scandens* LINNAEUS, Spec. Plant. 3. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 69. 1859; URBAN, Symb. Ant. 4: 225. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 61. 1909; Fl. Ned. W. Ind. Eil. 182. 1913; Fl. D.W. Ind. Isl. 2: 26. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 149. 1914; URBAN, Symb. Ant. 8: 209. 1920; QUESTEL, Fl. Isl. St. Bartholomew 102. 1941.

A much branched herb, usually clambering, somewhat woody below; branches slender, pale-green, glabrous or nearly so. Leaves petiolate; blade broadly cordate-ovate to ovate-deltoid, acute or rounded at the apex, deeply cordate to truncate at the base, 2—6.5 \times 1—4.5 cm, somewhat fleshy, bright green, slightly paler beneath, glabrous or sparsely puberulent when young; petiole slender, up to 3 cm long. Inflorescence consisting of several-flowered umbels or umbellate clusters or rarely in superposed verticels; peduncle slender, up to 5(—8) cm long; pedicels about 2—5 mm long becoming up to about 10 mm long in fruit, slender, glabrous. Bracts lanceolate to oblong, 2—3 mm long, ciliate, early deciduous. Upper perianth part funnel-shaped, greenish-yellow,

3—4.5 mm long and 4 mm wide, glabrous or rarely somewhat puberulent; the lower part 2—2.5 mm long, brownish, provided with developing glands in the upper half. Stamens 2(—3); filaments about 6 mm long, basally united into a cup; anthers about 0.5 mm long. Ovary ovoid, 0.5 mm long; style 6 mm long, filiform. Anthocarp about 1 cm long and 2 mm in diam., glabrous, provided with few to numerous viscid glands in the upper half, particularly near the apex.

Continental America from Arizona to Peru; West Indies as far south as Antigua, Aruba, Bonaire, and Curaçao.

Common weed.

Vernacular names: yerba di pipa, yerba di cangreu, kwareel (Leeward Group).

ARUBA: Companashi (Arnoldo 93, fl. & fr. Dec.); Rooi Taki (Stoffers 1846, fl. & fr. Jan.); near Noord (Stoffers 1560, fl. Jan.); Oranjestad (Stoffers 2132, fl. & fr. Feb.); vicinity of Oranjestad (Stoffers 2073, fl. & fr. Feb.); Tanki Leendert (Stoffers 1451, fl. Jan.); near San Nicolas (Boldingh 6491, fl. Jan.); near Matoguera (Stoffers 1431A, fl. Jan.); without loc. (Boldingh 6206, fl. & fr.; Koolwijk s.n. sub Suringar s.n., fl. [L]).

BONAIRE: Fontein (Suringar s.n., fl. Feb. [L]); near Rincón (Boldingh 7089, fl. & fr. Feb.); Dos Pos (Stoffers 575, fl. & fr. Nov.); near Kralendijk (Stoffers 915, fl. & fr. Dec.); Put Bronswinkel (Stoffers 688, fl. Nov.); seashore south of Kralendijk (Stoffers 500, fl. Nov.).

CURAÇAO: hofje near Weis Afo (Nagelkerken 120, fl. Feb.); hofje near Jan Thiel (Nagelkerken 330, fl. & fr. Jan.); Savonet (Suringar s.n., fl. Jan. [L]); west of Willemstad (de Wilde 92a, fl. & fr. [L, U]); Veeris (Suringar s.n., fl. Jan. [L]); near Veeris (Suringar s.n., fl. & fr. Ap. [L]); Fort Nassau (Suringar s.n., fl. Jan. [L]); Hato (Stoffers 52, fl. & fr. Sept.); hills near Blein (Boldingh 4759, fl. Oct.); Willemstad (Britton & Shafer 2912, fl. & fr. Feb.); Groot St. Joris (Went 1336, fl. & fr. Dec.); Perret Gentil (Burgers 110, fl. & fr. Jan.); without loc. (Suringar s.n., fl. [L]; Aschenberg s.n., fl.).

ST. MARTIN: Kanaal Rolandus (Stoffers 2250, fl. & fr. March); west of Great Salt Pond (Stoffers 2413, fl. March); Cole Bay (George s.n. sub Boldingh 2516, fl. & fr. Aug.); west of Lemoentuin Juliana (Stoffers 2227, fl. March); Fort Amsterdam (Suringar s.n., st. Ap. [L]).

Boerhavia Linnaeus, Spec. Plant. 3. 1753

Annual or perennial herbs, often woody below. Leaves opposite, those of a pair often unequal. Flowers hermaphrodite, often in large diffuse panicles, subtended by small bracts. Perianth 5-merous, with a conspicuous constriction between the lower part and the campanulate upper part. Stamens (in our material) 1—3; filaments filiform, at the base united into a lobed cup. Ovary globose to obovoid, stipitate; style as long as the stamens; stigma peltate. Mature anthocarp of the same shape as the basal part of the flower, pentagonal to 5-ribbed with or without glandular hairs. Embryo curved with broad cotyledons. Perisperm farinaceous.

About 30 species in tropical and subtropical regions, especially in America.

Key to the species:

1. Anthocarp glabrous, with 5 broad, more or less undulate ribs and narrow valleys between the ribs; flowers white, yellowish or pinkish . *B. erecta*
Anthocarp normally with glandular hairs, with straight ribs separated by broad valleys; flowers often red or crimson 2
2. Flowers mostly 1—3 together on the top of slender, glabrous or nearly glabrous branches; anthocarp slightly glandular-pubescent to almost glabrous *B. diffusa*
Flowers usually clustered in groups of 4—20 on glandular-pubescent to -puberulent branches or axillary peduncles; anthocarp strongly viscid-pubescent *B. coccinea*

Boerhavia erecta L.

LINNAEUS, Spec. Plant. 3. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 69. 1859; Duss, Fl. phan. Ant. franç. 60. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 60. 1909; Fl. Ned. W. Ind. Eil. 182. 1913; Fl. D.W. Ind. Isl. 2: 26. 1914; STANDLEY in N. Am. Fl. 21(3): 210. 1918; FAWCETT & RENDLE, Fl. Jamaica 3(1): 148, fig. 50. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 130. 1920; URBAN, Symb. Ant. 8: 208. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 286. 1924; QUESTEL, Fl. Isl. St. Bartholomew 102. 1941; LEON & ALAIN, Fl. Cuba 2: 133, fig. 51. 1951; ARNOLDO, Zakflora 119. 1954; Zakflora 170. 1964; GOODING *et al.*, Fl. Barbados 144, fig. 6. 1965; ADAMS, Flowering plants of Jamaica 261. 1972.

A somewhat branched, up to about 70 cm tall herb; branches erect or ascending, rather slender, glabrous to puberulent. Leaves opposite, petiolate; blade irregularly ovate-rhombic or the upper ones elliptic-lanceolate, obtuse to acute at the apex and obtuse to rounded at the base, the margin undulate or sinuate, from 2—8 × 1.5—6 cm, glabrous to sparsely puberulent, very pale to almost whitish beneath; petiole slender, mostly 1—5 cm long. Inflorescence of large, cymose, open, glabrous panicles, bearing flowers mostly in groups of 2—7 together; pedicels from very short to 2 mm long, elongating to 5 mm in fruit or the anthocarps almost sessile in mono- or dichasial configurations. Floral bracts lanceolate to linear, up to about 1.5 mm long. Flowers glabrous; upper part of the perianth campanulate, up to about 1.5 mm long, white to pinkish; the lower part 5-costate, obpyramidal, 0.5—1.0 mm long. Stamens 2—3; the filaments exerted, filiform. Style exerted. Mature anthocarp obpyramidal, strongly 5-ribbed; the ribs broad and more or less undulate, truncate or apiculate, glabrous, up to 4 mm long and 1.5 mm in diam.

New World tropics; also reported from the Old World tropics.

Vernacular names: yerba marga, mata porko (Leeward Group).

ARUBA: Playa (Arnoldo 201, fl. & fr. Dec.); Washington Plantation (Stoffers 1502, fl. & fr. Jan.); Noord (Suringar s.n., fl. & fr. Feb. [L]); Sivi Sivi (Boldingh 6316, fl. & fr.); without loc. (Koolwijk s.n. sub Suringar s.n., fl. & fr. [L]).

CURAÇAO: Veeris (Suringar s.n., fl. & fr. Jan. [L]); Cas Cora (Burgers 78, fl. & fr. Jan.; 85, fl. & fr. Jan.; Stoffers 248, fl. & fr. Oct.); Gasparito (Suringar s.n., fl. & fr. Jan. [L]); Zuuzak (Suringar s.n., fl. & fr. Jan. [L]); Brakkeput (Suringar s.n., fl. & fr. Jan. [L]); Roode weg (Suringar s.n., fl. & fr. Nov. [L]); Choloma (Stoffers 10, fl. & fr. Sept.); Savonet (Suringar s.n., fl. & fr. Jan. [L]); hofje Groot St. Joris (Boldingh 5422, fl. & fr. Nov.); Klein Santa Marta (Stoffers 80, fl. & fr. Sept.); hofje of Siberië (Boldingh 4961, fl. & fr. Dec.); Groot Kwartier (Suringar s.n., fl. & fr. Feb. [L]); Mahoema (Boldingh 4815, fl. & fr. Oct.); without loc. (Aschenberg s.n., fl. & fr.).

SABA: The Bottom (Arnoldo 731, fl. & fr. Aug.).

ST. EUSTATIUS: Oranjestad? (Suringar s.n., fl. & fr. May [L]); without loc. (v. Groll 223, fl. & fr.; v. Groll-Meyer 86, fl. & fr.; Boldingh 601, fr. June).

ST. MARTIN: Philipsburg (Stoffers 2302, fl. & fr. March; 2322, fl. & fr. March); from Philipsburg to Guana Bay (Boldingh 2405, fl. & fr. Aug.).

Boerhavia diffusa L.

LINNAEUS, Spec. Plant. 3. 1753; LEON & ALAIN, Fl. Cuba 2: 133. 1951 p.p.; ADAMS, Flowering plants of Jamaica 261. 1972; — *Boerhavia paniculata* L. C. RICHARD, Act. Soc. Hist. Nat. Paris 1: 105. 1792; GRISEBACH, Fl. Br. W. Ind. Isl. 69. 1859; DUSS, Fl. phan. Ant. franç. 60. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 60. 1909; Fl. Ned. W. Ind. Eil. 182. 1913; Fl. D.W. Ind. Isl. 2: 26. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 148. 1914; URBAN, Symb. Ant. 8: 209. 1920; — *Boerhavia caribaea* JACQUIN, Obs. Bot. 4: 5. 1771; ARNOLDO, Zakflora 109. 1954 p.p.; Zakflora 170. 1964 p.p.; — *Boerhavia coccinea* AUCT. non MILLER; BRITTON & MILLSPAUGH, Bahama Fl. 130. 1920 p.p.; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 285. 1924 p.p.; STANDLEY in N. Am. Fl. 21(3): 205. 1918; GOODING *et al.*, Fl. Barbados 143. 1965 p.p.

A moderately branched, up to 80 cm tall herb; branches erect or ascending, firm, pubescent or puberulent to glabrescent or rarely pilose. Leaves opposite, sometimes those of a pair unequal, petiolate; blade broadly ovate to elliptic, broadly rounded or obtuse at the apex, usually broadly obtuse at the base, the margin entire to slightly undulate, 2—6(—7) × 1.5—5 cm, glabrous to sparsely puberulent, slightly paler beneath; petiole 0.5—4 cm long, puberulent to glabrescent or rarely pilose. Inflorescence consisting of few- to much-branched panicles, sometimes with leafy bracts at the base; the flowers mostly 1—3 at the top of the slender, glabrous to very sparsely puberulent branches. Floral bracts ovate-lanceolate to lanceolate-linear, 1—1.5 mm long. Flowers sessile or very shortly pedicellate. Perianth: the upper part campanulate, 1.5—2 mm long, red, glabrous to sparsely puberulent; the lower part obovoid, 1 mm long, glandular-pubescent to -puberulent, somewhat 5-costate. Stamens (1—)2(—3), exserted; the filaments filiform. Style exserted. Mature anthocarp obovoid to obpyramidal, glandular-pubescent to -puberulent to occasionally almost glabrous, 5-ribbed, the ribs thick, with a blunt tip or nearly flat at the apex, up to 3.5(—4) mm long and 1.5 mm in diam.

Pantropic weed.

Vernacular name: batata di porko (Leeward Group).

ARUBA: Rooi Taki (Stoffers 1858, fl. & fr. Jan.); Seroe Largoe (Stoffers 1868, fl. & fr. Jan.); Jamanota (Stoffers 1636, fl. & fr. Jan.); Fontein (Arnoldo 2182, fr. Ap.); Rooi Prins (Stoffers 2167, fl. & fr. Feb.); Playa (Arnoldo 183, fl. Dec.); slope of Mirlamar (Boldingh 6457a, fl. Jan.); Belashi (Arnoldo 133, fl. & fr. Dec.); near Matoguera (Stoffers 1431, fl. & fr. Jan.); without loc. (Koolwijk s.n. sub Suringar s.n., fl. & fr. [L]).

BONAIRE: Dos Pos (Stoffers 574, fl. & fr. Nov.).

CURAÇAO: Brakkeput (Suringar s.n., fl. & fr. Jan. [L]); hofje near Jan Thiel (Nagelkerken 376, fl. & fr. Jan.); Mahoema (Boldingh 4816, fl. & fr. Oct.); Piscadera Baai (de Wilde 76a, fl. & fr. Dec. [L]); near Hato? (Suringar s.n., fr. Sept. [L]).

SABA: road to Windwardside (Arnoldo 688, fl. & fr. Aug.); gut between Hellsgate and Mastic Gut, 300—400 m (Boldingh 2056, fl. & fr. July); along road between The Bottom and Windwardside, 200 m (Boldingh 1347, fl. July); along road between The Bottom and Mary's Point, 100—200 m (Boldingh 1534, fl. & fr. July); Ladder Gut, 100—200 m (Stoffers 3187, fl. May).

ST. EUSTATIUS: Bengalen (Boldingh 632, fl. & fr. June); near Glass Bottle (Boldingh 872, fr. June); Fairplay (Suringar s.n., fl. & fr. Ap. [L]); Oranjestad (Boldingh 524, fl. & fr. June); without loc. (Boldingh 1011, fl. & fr. June; 1019, fl. June; Suringar s.n., fl. & fr. [L]).

ST. MARTIN: Kanaal Rolandus (Stoffers 2252, fl. & fr. March; 2268, fl. & fr. March); near Guana Bay (Suringar s.n., fl. [L]); Fort Amsterdam (Suringar s.n., fl. & fr. Ap. [L]); Fort William (Boldingh 2537, fl. & fr. Aug.); without loc. (Boldingh 2395, st. Aug.).

Boerhavia coccinea Mill.

MILLER, Gard. Dict. ed. 8. 1768; BOLDINGH, Fl. D.W. Ind. Isl. 1: 60. 1909; Fl. Ned. W. Ind. Eil. 182. 1913; Fl. D.W. Ind. Isl. 2: 26. 1914; URBAN, Symb. Ant. 8: 209. 1920; BRITTON & MILLSAUGH, Bahama Fl. 130. 1920 p.p.; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 285. 1924 p.p.; QUESTEL, Fl. Isl. St. Bartholomew 102. 1941; GOODING *et al.*, Fl. Barbados 143. 1965 p.p.; ADAMS, Flowering plants of Jamaica 260. 1972; — *Boerhavia hirsuta* JACQUIN, 1770; (WILLDENOW, Phytogr. 1. 1794); GRISEBACH, Fl. Br. W. Ind. Isl. 69. 1859; DUSS, Fl. phan. Ant. franç. 60. 1897; FAWCETT & RENDLE, Fl. Cuba 2: 133. 1951 p.p.; — *Boerhavia diffusa* AUCT. non LINNAEUS; LEON & ALAIN, Fl. Cuba 2: 133. 1951 p.p.; — *Boerhavia viscosa* LAG. & RODR., Ann. Sci. Nat. 4: 256. 1801; URBAN, Symb. Ant. 8: 209. 1920; ARNOLDO, Zakflora 109. 1954; — *Boerhavia caribaea* JACQUIN, Obs. Bot. 4: 5. 1771; STANDLEY in N. Am. Fl. 21(3): 206. 1918; ARNOLDO, Zakflora 109. 1954 p.p.; Zakflora 170. 1964 p.p.

Herb with repent or ascending branches from a thick taproot; branches firm, often long, puberulent to pilose. Leaves opposite, those of a pair usually unequal, petiolate; blade rhombic-ovate to elliptic, broadly rounded to subacute at the apex, broadly obtuse to truncate at the base, the margin undulate to sinuate or almost entire, up to 4.5 cm long and 3.5—4 cm wide, glabrous or minutely

puberulent, white-greyish beneath; petiole up to 2(—3) cm long, puberulent to pilose. Floral bracts triangular to lanceolate-linear, up to about 1 mm long. Flowers sessile or on very short pedicels, clustered in groups of 4—20 on long axillary stalks or in more or less sparingly branched, often leafy-bracted panicles. Inflorescence-branches glandular or puberulent. Perianth densely pubescent to puberulent; the upper part campanulate, red, 1—1.5 mm long; the lower part about 1 mm long, cylindric-fusiform to 5-angular. Stamens 1—3, shortly exserted. Style exserted. Mature anthocarp obovoid, strongly viscid-pubescent, 5-ribbed, the ribs thick, terminating in a blunt tip, about 3 mm long and 1.5 mm in diam.

Tropics of the New World; also reported from the Old World tropics.

BONAIRE: Guatemala (Stoffers 800, fl. & fr. Nov.); Fontein (Stoffers 561, fl. & fr. Nov.).

CURAÇAO: Grote Berg (Stoffers 331, fl. & fr. Oct.); Malpais (Stoffers 281, fl. Oct.); Parera (Stoffers 37, fl. & fr. Sept.; 442, fl. Oct.); Wishi (Arnoldo 89, fl. & fr.); Klein Santa Marta (Stoffers 78, fl. & fr. Sept.); hofje near Weis Afo (Nagelkerken 160, fl. & fr. March); hofje near Jan Thiel (Nagelkerken 312, fl. Nov.); Gasparito (Lens 815, fl. & fr. Dec.); Veeris Berg (Boldingh 4728, fl. & fr. Oct.); hofje of Siberië (Boldingh 4960, fl. & fr. Nov.).

SABA: Ladder Gut, 100—200 m (Stoffers 2753, fl. & fr. Ap.; Suringar s.n., fl. & fr. Ap. [L]); Boldingh 1995, fl. & fr. July); Fort Gut, 0—100 m (Stoffers 2886, fl. Ap.; 3433, fl. & fr. May); along roads, 200 m (Boldingh 1384, fl. & fr.).

ST. EUSTATIUS: Cultuurvlakte (Suringar s.n., fl. Ap. [L]); seashore near Oranjestad (Boldingh 40, fl. & fr. May); Oranjestad (Boldingh 85, fl. & fr. May); without loc. (v. Groll-Meyer 87, fl. & fr.).

ST. MARTIN: along roads in Philipsburg (Stoffers 2325, fl. & fr. March); Airfield (Stoffers 2366, fl. & fr. March; 2400, fl. & fr. March; 2402, fl. & fr. March); Kanaal Rolandus (Stoffers 2277, fl. & fr. March); from Grande Case to Marigot (Boldingh 3098, fl. & fr. Sept.); along Great Salt Pond (Stoffers 2423, fr. March).

ISLAND? (Boldingh s.n., fl.).

NOTE: On Aruba 7 collections were made which may possibly represent a hybrid between *Boerhavia coccinea* and *B. erecta*. A brief description is given below:

General habit of *B. coccinea* but the plants much smaller and of somewhat stunted growth. Flowers 2 together or in clusters of up to 15 flowers on axillary peduncles or in poorly developed, sparsely branched, leafy panicles. Mature anthocarp obovoid to obpyramidal, up to 3(—3.5) × 1.5—1.75 mm, truncate with a broad apical cone, 5-costate, ribs thick, slightly undulate, glabrous to very sparsely puberulent on the ribs and more or less shortly puberulent.

ARUBA: seashore near Fontein (Boldingh 6473, fl. & fr. Jan.; Suringar s.n., fr. Feb. [L]); in garden in Savaneta (Stoffers 1920, fl. Jan.); Palu Marka (Stoffers 1746, fl. & fr. Jan.); along roads from Noord to Westpunt (Stoffers 1773, fl. & fr. Jan.); without loc. (Koolwijk s.n. sub Suringar s.n., fl. & fr. [L]).