

APOCYNACEAE

by

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Trees, shrubs, lianas or rarely herbs, often with milky or viscid sap. Leaves opposite or sometimes verticillate or alternate, simple and always entire, penninerved. Stipules minute or mostly wanting. Flowers actinomorphic, hermaphrodite, arranged in racemose or cymose inflorescences or solitary. Calyx gamosepalous, 5-lobed, imbricate, often bearing glands (squamellae) within. Corolla gamopetalous, usually salver-shaped or funnelform, the tube occasionally bearing more or less conspicuous faucal appendages within (corona), the limb 5-parted, the lobes usually contorted in aestivation. Stamens (4—)5, inserted in the corolla-tube, alternating with the corolla-lobes; filaments usually short; anthers 4-celled, introrse, often sagittate and apiculate with the connective produced, free or coherent around the stigma. Pollen granular or in tetrads. Ovary superior or sometimes half-inferior, 2-carpellary, 1-locular with parietal placentation or 2-locular with axile placenta or apocarpous and then connected basally and by the style; style 1, split at the base or entire, thickened below the apex; stigma massive, variable in form. Disk often present. Ovules few to many, usually anatropous. Fruit of solitary or paired follicles or a capsule, berry or drupe. Seeds comose or with a papery wing. Embryo large, straight. Endosperm present.

About 2000 species in 200 genera, mostly in the tropics and subtropics and only a few species in temperate regions.

Key to the species:

1. Leaves alternate *Thevetia*
Leaves opposite, verticillate, or spirally arranged near the top of the branches 2
2. Leaves opposite 3
Leaves not opposite 5

3. Flowers yellowish; plant a woody twiny vine *Urechites*
Flowers not yellowish; woody herbs, shrubs or trees; not twining 4
4. Shrub or small tree, leaves narrowly oblong-elliptic to narrowly elliptic
or oblanceolate-elliptic, 3.5—20 × 1—6.5 cm; flowers white
Tabernaemontana
Woody herb to small shrub; leaves oblong, oblanceolate or obovate,
3—7 × 2—3 cm, flowers pink or white *Catharanthus*
5. Leaves spirally arranged at the end of the twigs, 10—30 × 1.5—5 cm;
flowers white with a yellow eye *Plumeria*
Leaves verticillate, not crowded at the end of the branches 6
6. Leaves obovate to oblong-lanceolate; flowers yellow *Allamanda*
Leaves ovate to broadly ovate-elliptic or oblong-lanceolate 7
7. Leaves oblong-lanceolate, 2—30 × 0.5—3.5 cm; flowers at least 3 cm long,
scarlet, yellowish or whitish *Nerium*
Leaves ovate to broadly ovate-elliptic, the larger ones 5—12 × 3—5 cm;
flowers white, less than 1 cm long *Rauwolfia*

Allamanda Linnaeus, Mantissa 146, 214. 1771

Trees or shrubs, frequently climbing. Leaves verticillate; intrapetiolar glands subulate, often very numerous. Stipules wanting. Flowers large, in racemiform or paniculate, axillary but often top-neared cymes. Calyx 5-lobed, the lobes equal, conspicuous and acute, without squamellae. Corolla funnel-shaped, the tube slender and cylindric to the middle, widening into a campanulate or funnel-shaped throat with fimbriate scales or tufts of hairs at its base, the lobes sinistrorsely contorted. Stamens inserted at the upper end of the cylindric basal tube, covered by hairy appendages of the throat; anthers free, sagittate-lanceolate without an enlarged connective, dehiscing and polliniferous all along. Ovary syncarpous, 1-locular, surrounded by a low annular disk; stigma-head cylindric, with basal skin-ring and conical bilobed apiculus. Ovules numerous, borne on two linear, parietal placentas. Seeds numerous, flat, winged. Fruit a globose prickly capsule.

Twelve species in tropical South America.

Allamanda cathartica L.

LINNAEUS, Mantissa 214. 1771; GRISEBACH, Fl. Br. W. Ind. Isl. 407. 1862 [1864]; Duss, Fl. phan. Ant. franç. 393. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 155. 1909; URBAN, Symb. Ant. 4: 491. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 319. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 86. 1925; QUESTEL, Fl. Isl. St. Bartholomew 168. 1941; ARNOLDO, Gekw. en nutt. planten Ned. Ant. 14, fig. 51. 1954; CHEESMAN, in Fl.

Trinidad & Tobago 2: 146. 1947; LEON & ALAIN, Fl. Cuba 4: 186, fig. 85. 1957; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 75, fig. 51. 1971; FOURNET, Fl. Guadeloupe & Martinique 1230, fig. 607. 1978.

A scantily branched shrub with terete, glabrous or pubescent branches. Leaves quaternate; petiole 2—3 mm long; blade obovate to oblong-lanceolate, acuminate at the apex, attenuate towards the base, 6—12 × 2—5 cm, papery to subcoriaceous, glabrous or more or less hispid on both sides, the midrib and sometimes the basal parts of the secondary veins scabrous beneath, the margin somewhat revolute. Cymes racemiform or paniculate, axillary, glabrous or hispidulous. Bracts deciduous. Calyx glabrous, sometimes variously hairy outside, glabrous within, persistent; the lobes ovate to ovate-lanceolate, acute at the apex, 5—12 mm long, spreading. Corolla infundibuliform, yellow, the lower tube 2.5—4 cm long, about 2 mm in diam. at the base, the throat broadly conic to tubular, 3—4 cm long, 2.5—3.5 cm in diam., the lobes suborbicular, sometimes oblique, widely spreading; throat-scales fimbriate. Anthers free from the stigma, subsessile, sagittate-lanceolate, 0.5 cm long. Ovary syncarpous, 1-locular; style long and slender; stigma capitate, at the level of the anthers, with a short, bifid apiculus. Disk annular, small. Ovules numerous, borne on two parietal placentas. Fruit globose or subglobose, about 4 cm in diam., covered with many soft prickles about 1 cm long. Seeds many, obovate, broadly winged, 6 mm long and 3 mm wide, with their wing attaining a diameter of 1.5—2 cm.

Probably native to north-eastern South America; widely cultivated and sometimes naturalized in various parts of the Old and New World; cultivated in the islands of the Netherlands Antilles.

Vernacular names: buttercup, yellow bell (Windward Group).

ARUBA: in garden in San Nicolas (Stoffers 1926, fl. Jan.).

SABA: The Bottom (Boldingh 2266, fl. July; Arnolde 856, fl. Aug.; Stoffers 3288, fl. May).

ST. EUSTATIUS: in garden in Oranjestad (Boldingh 514, fl. June); without loc. (v. Groll-Meyer 49, fl.).

ST. MARTIN: Philipsburg (Arnolde 1288, fl. March; Stoffers 2471, fl. March).

Thevetia Adanson, Fam. 2: 171, 611. 1763, nom. cons.

Glabrous shrubs or small trees, up to 10 m tall. Leaves alternate, often shining, with numerous, long intrapetiolar glands. Inflorescence terminal or pseudo-axillary, cymose but very irregularly branched, few- to many-flowered. Bracts present. Calyx 5-parted nearly to the base, the lobes equal, acute, bearing many squamellae within, persistent. Corolla salver-shaped, the tube much shorter than the oblique broadly obovate spreading lobes. Stamens inserted in the mouth of the lower tube, covered by 5 small villous scales of the corolla; anthers shortly ovate-elliptic, with apical tails. Ovary syncarpous; stigma head more or less

cylindric with a short bifid apiculus. Disk fleshy, slightly 5-lobed. Ovules 2—4, each carpel containing 2 seeds separated by a false dissepiment. Fruit drupaceous, laterally broadened, impressed around the stalk, finely furrowed longitudinally at the apex; exocarp smooth, mesocarp fleshy, endocarp very hard, splitted apically. Seeds ovate-triangular with reticulate endotesta. Embryo with thick cotyledons. Endosperm scanty or wanting.

Twelve species ranging from Mexico to Central and tropical South America.

Thevetia peruviana (Pers.) K Schumann

K. SCHUMANN, in ENGLER & PRANTL, *Natürl. Pflanzenfam.* 4. 2: 159. 1895; CHEESMAN, in *Fl. Trinidad & Tobago* 2: 154. 1947; ARNOLDO, *Gekw. en nutt. pl. Ned. Ant.* 133, fig. 218. 1954; LEON & ALAIN, *Fl. Cuba* 4: 181. 1957; GOODING *et al.*, *Fl. Barbados* 329. 1965; ARNOLDO, *Gekw. en nutt. pl. Ned. Ant.* 79, fig. 106. 1971; FOURNET, *Fl. Guadeloupe & Martinique* 1231. 1978; — *Cerbera peruviana* PERSOON, *Syn. Plant.* 267. 1805; — *Cerbera thevetia* LINNAEUS, *Spec. Plant. ed. 2.* 304. 1762; BRITTON & MILLSAUGH, *Bahama Fl.* 338. 1920; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 6: 91. 1925; QUESTEL, *Fl. Isl. St. Bartholomew* 167. 1941; — *Thevetia nerifolia* JUSSIEU ex STEUDEL, *Nomencl. Bot.* 180. 1821; GRISEBACH, *Fl. Br. W. Ind. Isl.* 407. 1861 [‘1864’]; DUSS, *Fl. phan. Ant. franç.* 394. 1897; JOHNSTON, *Proc. Bost. Soc. Nat. Hist.* 34(7): 247. 1909; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 157. 1909; URBAN, *Symb. Ant.* 4: 494. 1910; BOLDINGH, *Fl. Ned. W. Ind. Eil.* 321. 1913; *Fl. D.W. Ind. Isl.* 2: 85. 1914; URBAN, *Symb. Ant.* 8: 543. 1921.

Erect or clambering shrub, often lianoid, with grey twigs, glabrous throughout. Leaves alternate; petioles 3—5 mm long; blade linear, acute at the apex, the margin somewhat revolute, 7—12 × 0.5—1.3 cm, membranaceous, nitidous above, the secondary veins of the leaves obscure when dry. Inflorescence terminal or lateral, shortly pedunculate and the branches 1—3-flowered. Flowers orange, pinkish-white or pinkish-yellow. Calyx-teeth ovate to ovate-lanceolate, acute, 4—7 × 2 mm, persistent. Lower part of the corolla-tube 1—1.5 cm long and 3 or 4 mm wide, the upper part 2—2.5 cm long and 1.5—2 cm wide, the lobes obovate, 3.5—4.5 cm long, spreading. Stamens inserted in the mouth of the lower part of the tube, covered by 5 long-haired scales; anthers subsessile, ovate-elliptic. Ovary syncarpous; stigma cylindric, with a lobed ring in the middle part. Disk fleshy. Ovules 2—4. Fruit red, drupaceous, obtriangular, finely furrowed longitudinally at the apex, 4 cm high, and 5 cm wide, the flesh about 1 cm thick. Seeds usually 2, brown, about 1 cm thick. Plants containing a yellow, poisonous juice.

Florida, West Indies, and tropical continental America; frequently cultivated throughout the tropics. Cultivated in the islands of the Leeward Group and in Saba.

ARUBA: Playa (Arnoldo 56, fl. Dec.).

SABA: Windwardside, churchyard (Boldingh 1587, fr. July).

Rauvolfia Linnaeus, Spec. Plant. 208. 1753

Shrubs or trees. Leaves verticillate, 3—5 at a node, petiolate or sessile, often sectorially unequal. Stipules small, interpetiolar, deciduous; persistent glands confined to the leaf-axils or ascending the petiole. Inflorescence terminal or axillary, consisting of few- to many-flowered cymes. Bracts present. Calyx campanulate, 5-lobed, glandless. Corolla salver-shaped or infundibuliform, usually white, glabrous without and variously villous within, the 5 lobes equal, sinistrorsely contorted. Stamens 5; filaments slender, short; anthers fully fertile, free from each other and from the stigma, ovate, highly splitted. Ovary 2-carpellary, superior, apocarpous or variously syncarpous and 2-locular; style single and slender, short; stigma conspicuous, cylindrical, obscurely bi-apiculate. Disk annular, entire or dentate. Ovules 1—2 on a ventral or axile placenta. Fruit apocarpous or variously syncarpous drupes, 1—2-seeded, often only one carpel developping. Endocarp hard. Seeds with a membranaceous testa. Cotyledons flat, fleshy.

About 35 species in the tropics.

Rauvolfia viridis R. & S.

ROEMER & SCHULTES, Syst. Veg. 4: 805. 1819; ARNOLDO, Zakflora 81. 1964; FOURNET, Fl. Guadeloupe & Martinique 1231. 1978; — *Rauvolfia lamarckii* A. DECANDOLLE, Prodr. 8: 337. 1844; GRISEBACH, Fl. Br. W. Ind. Isl. 408. 1861 [1864]; DUSS, Fl. phan. Ant. franç. 393. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 247. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 1: 157. 1909; URBAN, Symb. Ant. 4: 494. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 321. 1913; Fl. D.W. Ind. Isl. 2: 85. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 91. 1925; QUESTEL, Fl. Isl. St. Bartholomew 167. 1941; URBAN, Symb. Ant. 8: 543. 1821; CHEESMAN, in Fl. Trinidad & Tobago 2: 152. 1947; ARNOLDO, Zakflora 62. 1954.

Shrubs up to 3 m tall; branches terete, puberulent when young, glabrous afterwards; the nodes with very few pectinate glands in the axil and on the petioles. Leaves short-pedicellate, slightly unequal, quaternate or ternate; blade ovate or broadly ovate-elliptic, acute to acuminate at the apex, tapering towards the base, the largest leaves 5—15 × 3—5 cm, the smallest 2—4 × 1.5—3 cm, membranaceous, glabrous above and minutely puberulent beneath either generally or along the midrib and the secondary veins only; the secondary veins particularly distinct beneath, sharply arcuate, 8—15 pairs, the tertiary veins forming a distinct network. Inflorescence terminal or rarely axillary, several- to many-flowered; peduncles slender, 1—4 cm long, pedicels slender, 2—4 mm long. Bracts minute. Flowers small. Calyx deeply 5-lobed, the lobes ovate, acuminate, 1—1.5 mm long, glabrous. Corolla tubular or narrowly urceolate, white, the tube slender, 2—3.5 mm long, glabrous, somewhat pilose within near the slightly constricted throat; lobes ovate, obtuse, 2—3.5 mm long, c. 1 mm wide, glabrous. Stamens included, inserted near the throat; filaments about 1 mm long; anthers ovate, acute, c. 1 mm long. Ovary 2-carpellary, syncarpous,

subsphaerical; style slender, c. 2 mm long; stigma depressed capitate, obscurely 2-lobed. Disk annular. Fruit sphaerical or subsphaerical, slightly flattened, 5—7 mm in diam., glabrous, 2-seeded. Endocarps ovate, distinctly rugose.

Lesser Antilles, Colombia, Venezuela, and Aruba.

From sea-level to about 400 m altitude, but up to 1000 m altitude elsewhere; generally on dry soils.

Vernacular names: snakeberry tree, antigua balsem (Windward Group).

ARUBA: Rooi Takki (Stoffers 1860, fr. Jan.); on calcareous plateau above Prins (Stoffers s.n., fl. March); near Savaneta (Boldingh 6516, st. Jan.; 6517, fr. Jan.).

SABA: Fort Bay Gut, 100—200 m (Stoffers 3317, fl. May); id., 0—100 m (Stoffers 2888, fl. & fr. Ap.); between Thais Hill and Promised Land, 175—200 m (Stoffers 3428, fl. & fr. March); between The Bottom and Mary's Point (Boldingh 1486, fl. July; Stoffers 3477, fr. June; Arnoldo 854, fl. Aug.); Bottom Hill (Arnoldo 5644, fl. Aug.); Ladder Gut, 0—100 m (Stoffers 2815, fl. & fr. Ap.); gut south of St. John, 150—300 m (Stoffers 3014, fl. & fr. Ap.).

St. EUSTATIUS: along roads in Oranjestad (Boldingh 935, fl. June; 1069, defl. June); between Fort de Windt and Oranjestad (Stoffers 3498, fl. July; 3513, fl. & fr. July); Solitude, 0—100 m (Stoffers 3721, fl. & fr. Aug.; 3709, st. July); slope of The Quill near Bengalen, 50—200 m (Boldingh 739, st. June; 647, st. June); The Quill, 500 m (Boldingh 480, st. June); near White Wall (Stoffers 4756, fl. Aug.; 4759, fl. Aug.); near Boven, 200 m (Boldingh 1235, fr. June); gut near Fort de Windt, 50 m (Boldingh 840, st. June); hills N.W. of Zeelandia (Stoffers 3821, fr. July); between Glass Bottle and White Wall, 150—200 m (Stoffers 4110, st. Aug.); Little Mountains (Stoffers 3534, st. Aug.); between Schotsen Hoek and Little Mountains (Stoffers 3554, fl. July).

St. MARTIN: Naked Boy Hill, 50—200 m (Boldingh 2684, fl. Aug.); from Philipsburg to Guana Bay (Boldingh 2361, st. Aug.); lower part of Milldrum Hill (Boldingh 3164, fr., Sept.); in pasture near Bellevue (Boldingh 2825, fl. Aug.; 2812, st. Aug.); Fort William (Boldingh 2541, st. Aug.); Experimental garden (Arnoldo 1261, fl. March).

Plumeria Linnaeus, Spec. Plant. 209. 1753

Trees of small to moderate size or shrubs; branches terete, often hollow; twigs usually scarred by the fallen leaves. Leaves spirally arranged at the twigs, petiolate or sessile, penni-nerved, eglandular. Inflorescence terminal or pseudo-lateral, thyriform, bearing few to many flowers. Bracts present. Calyx 5-parted, the lobes essentially equal, imbricate, without squamellae at the base within. Corolla salver-shaped, large, the tube without appendages. Stamens 5, included, inserted very near to the base of the corolla-tube; anthers free from each other and from the stigma. Carpels 2, separate, half-inferior, united at the apex by the sessile stigma; stigma cylindrical with a bifid apiculus. Disk wanting. Ovules many, borne on an axile placenta. Fruit apocarpous; mericarps cylindrical, acuminate, leathery or woody, spreading. Seeds flattened, irregularly winged.

Perhaps 10 species in tropical America; the species are extremely variable in form and colour of the flowers.

Plumeria alba L.

LINNAEUS, Spec. Plant. 210. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 411. 1862 ['1864']; DUSS, Fl. phan. Ant. franç. 395. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 155. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 247. 1909; URBAN, Symb. Ant. 4: 492. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 320. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 87. 1925; QUESTEL, Fl. Isl. St. Bartholomew 166. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 110. 1954; Gekw. en nutt. pl. Ned. Ant. 77. 1971; FOURNET, Fl. Guadeloupe & Martinique 1232. 1978.

Small to medium-sized tree. Leaves petiolate; petiole 1.5—6.5 cm long; blade lanceolate, sometimes oblong-lanceolate, acute or acuminate at the apex, cuneate or more or less rounded at the base, 10—30 × 1.5—4(—5) cm, subcoriaceous, glabrous above and densely white-puberulent beneath, the midrib and secondary veins prominent, secondary veins anastomosing towards the margin without forming a well developed marginal vein, the margin conspicuously wrinkled-revolute. Inflorescence densely congested, subumbellate, peduncle stout, as long as or shorter than the leaves, the secondary peduncles usually very short, bearing many white flowers with a yellow eye; pedicels 7—10 mm long. Calyx 5-lobed, the lobes ovate, 1.5—3 mm long, rounded at the apex, without squamellae. Corolla strictly salver-shaped; tube about 2 cm long and 1—1.5 mm in diam. at the apex and the base, the lobes ovate, 2—4.5 cm long with longitudinal aestivation. Stamens with filaments inserted about 2 mm above the base of the corolla-tube, glabrous, 2 mm long; anthers obovate without an enlarged connective. Style very short; stigma with a bifid apiculus. Follicles 9—16 cm long and about 1.5 cm thick. Seeds 1—1.3 cm in diam.

Antilles from Puerto Rico to Grenada.

Especially on steep, dry slopes.

Vernacular names: white frangepane, pigeon wood (Windward Group).

SABA: along road from The Bottom to Windwardside, 200 m (Boldingh 1354, fl. July).

St. EUSTATIUS: without loc. (v. Groll-Meyer 68, fl.).

St. MARTIN: from Philipsburg to Guana Bay (Boldingh 68, fl. & fr. Aug.); Fort William, 0—50 m (Boldingh 2534, fl. Aug.); Princes Quarter (George s.n., sub Boldingh 2464, st. Aug.); Great Bay near Pointe Blanche (Stoffers 2214, fl. March); lower part of Mount William (Stoffers 2531, fl. March); Fort Amsterdam (Suringar s.n., fl. Ap. [L]).

A few species cultivated in the Neth. Antilles (see Arnolde, Gekweekte en nuttige planten van de Nederlandse Antillen, 1971).

Catharanthus G. Don, Gen. Hist. 4: 71, 95. 1837

Annual or perennial herbs. Leaves opposite, not glandular. Flowers solitary or in axillary cymes, bearing up to 4 flowers. Calyx-teeth essentially equal, without squamellae. Corolla infundibuliform or salver-shaped, somewhat inflated at the insertion of the stamens, the limb equally 5-parted, sinistrorsely contorted. Stamens inserted below the throat; filaments arcuate; anthers oblong, bilobed at the base. Ovary apocarpous, oblong-ovate, the carpels alternating with 2 nectaries of equal size; stigma-head shortly cylindric, long-haired at the top, at the base a reflexed membrane. Ovules many. Fruit follicular; mericarps erect, cylindric. Seeds many, naked, compressed.

Perhaps three species in the tropics.

Catharanthus roseus (L.) G. Don

G. DON, Gen. Hist. 4: 95. 1838; BRITTON & MILLSAUGH, Bahama Fl. 336. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 89. 1925; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 76, fig. 112. 1971; GOODING *et al.*, Fl. Barbados 328. 1965; ADAMS, Flowering plants of Jamaica 589. 1972; FOURNET, Fl. Guadeloupe & Martinique 1233, fig. 608. 1978; — *Vinca rosea* LINNAEUS, Spec. Plant. ed. 2. 305. 1762; GRISEBACH, Fl. Br. W. Ind. Isl. 410. 1861 [1864]; DUSS, Fl. phan. Ant. franç. 395. 1897; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 137. 1954; — *Lochnera rosea* (L.) REICHENBACH, Conspectus 134. 1828; BOLDINGH, Fl. D.W. Ind. Isl. 1: 156. 1909; URBAN, Symb. Ant. 4: 492. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 320. 1913; URBAN, Symb. Ant. 8: 540. 1921; QUESTEL, Fl. Isl. St. Bartholomew 167. 1941; LEON & ALAIN, Fl. Cuba 4: 180, fig. 81. 1957; CHEESMAN, in Fl. Trinidad & Tobago 2: 151. 1947.

Erect, more or less woody herb, 40—80 cm high, usually branched, the twigs minutely puberulent. Leaves opposite; petioles 5—10 mm long, puberulent; blade oblong, oblanceolate or obovate, rounded or minutely apiculate at the apex, cuneate at the base, 3—7 × 2—3 cm, usually minutely puberulent on both sides, sometimes entirely glabrous, midrib and secondary veins prominent beneath. Flowers nearly sessile, in clusters of 1—3 in the leaf-axils. Calyx 5-parted, the lobes lanceolate or linear, acuminate, 4—7 mm long, without squamellae, minutely puberulent outside. Corolla salver-shaped, pink or white, the tube about 2.5 cm long and 1.5 mm in diam. at the base, somewhat inflated at the insertion of the stamens, constricted in the orifice, somewhat pubescent outside, the lobes obliquely obovate, 1—2.5 cm long and 1 cm wide, spreading. Stamens included, inserted in the upper part of the corolla-tube; filaments arcuate, shorter than the anthers, glabrous; anthers oblong, bilobed at the base. Ovary apocarpous, 2-carpellary and the carpels alternating with 2 subulate disk-scales; style filiform, about 2 cm long; stigma cylindric, long-pilose at the base and at the apex, below the basal part a reflexed conical membrane. Diskglands oblong, exceeding the ovaries. Ovules attached in two rows. Fruit follicular, the mericarps cylindrical, about 2 cm long, erect, pubescent or

tomentose and longitudinally ribbed. Seeds numerous, 1.5 mm long and 1 mm wide, somewhat compressed.

Originally described from Madagascar; now widespread in the tropics and subtropics.

Cultivated in the islands of the Netherlands Antilles and often escaped.

Vernacular names: magdaleentje, madalena (Leeward Group).
churchyard blossom (Windward Group).

ARUBA: in garden in Savaneta (Stoffers 1599, fl. Jan.); along road near Noord (Stoffers 1575, fl. Jan.); without loc. (Arnoldo 136, fl. Dec.).

BONAIRE: south of Kralendijk, near sea-shore (Stoffers 512, fl. Nov.).

SABA: Spring Bay Gut (Boldingh 2104, st. July); sea-shore near Fort Bay (Boldingh 2146, fl. July); along roads between The Bottom and Windwardside, 200 m (Boldingh 1394, fl. July); along road near Mary's Point (Arnoldo 829, fl. Aug.); Fort Bay Gut, 0—100 m (Stoffers 2887, fl. Ap.); Jenkinshill near St. John, 350 m (Stoffers 3150, fl. May); Promised Land (Stoffers 3418, fl. May); between Promised Land and Thais Hill (Stoffers 3427, fl. May); Ladder Gut, 100—200 m (Stoffers 3182, fl. May); id., 0—100 m (Stoffers 2789, fl. Ap.); Suringar s.n., fl. Ap. [L]; gut south of St. John (Stoffers 3003, fl. Ap.).

ST. EUSTATIUS: along roads in Oranjestad (Boldingh 571, fl. & fr. Jan.); seashore near Oranjestad (Boldingh 36, fl. May); Fairplay (Suringar s.n., fl. Ap. [L]); slope of The Quill (Suringar s.n., fl. Ap. [L]); without loc. (v. Groll-Meyer 22, fl.; Suringar s.n., fl. Ap. [L]).

ST. MARTIN: along the salt-pond near Philipsburg (Boldingh 2440, fl. Aug.); Cole Bay (Boldingh 2510, fl. March); lower part of Mount William (Stoffers 2529, fl. March); garden in Philipsburg (Stoffers 2520, fl. March).

Tabernaemontana Linnaeus, Spec. Plant. 210. 1753

Erect shrubs or small trees. Leaves opposite, often unequal, short-petiolate, simple, entire, penni-veined, glabrous; intrapetiolar glands often present. Inflorescence terminal between the two twigs of a branching point or pseudo-axillary, usually many-flowered. Flowers pedicellate. Calyx 5-parted nearly to the base, the lobes equal, bearing many squamellae within. Corolla salver-shaped, glabrous. Stamens inserted in the upper third of the corolla-tube; anthers subsessile, sagittate, not connivent, without an enlarged connective and usually tinged with bluish-green. Ovary 2-carpellary, apocarpous; style slender, short or long; stigma shortly cylindrical or clavate, thickened and shortly apiculate, and with a horizontal basal ring. Annular disk at the base of the ovaries present or wanting. Fruits distinctly apocarpous; mericaps diverging and both equally developed, dehiscing ventrally. Seeds more or less arillate.

About 100 species in the tropics.

Tabernaemontana citrifolia L.

LINNAEUS, Spec. Plant. 210. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 409. 1861 ['1864']; DUSS, Fl. phan. Ant. franç. 395. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 156. 1909; Fl. Ned. W. Ind. Eil. 321. 1913; URBAN, Symb. Ant. 8: 541. 1921; LEON & ALAIN, Fl. Cuba 4: 172. 1957; GOODING *et al.*, Fl. Barbados 329. 1965; FOURNET, Fl. Guadeloupe & Martinique 1234, fig. 609. 1978.

Glabrous shrub or small tree, up to 10 m tall. Leaves petiolate; petioles 3—15 mm long; blade membranaceous, narrowly oblong-elliptic to narrowly obovate-elliptic or oblanceolate-elliptic, acuminate at the apex, cuneate at the base, 3.5—20 × 1—6.5 cm, the secondary veins arched, distinctly prominent beneath. Inflorescence axillary, corymbose, much branched and much shorter than the subtending leaves, with numerous flowers; peduncle c. 1 cm long; pedicels 7—12 mm long. Flowers white. Calyx-lobes ovate, acute or more or less obtuse, 2.5—3.5 mm long, imbricate, bearing squamellae within. Corolla salver-shaped, the tube 10—14 mm long, somewhat narrowed at the orifice; lobes obovate to oblong, with an inconspicuous, obtuse, lateral acumen, 12—17 mm long, spreading or somewhat reflexed. Stamens inserted in the upper third of the corolla-tube; anthers sagittate, margined bluish-green, slightly exerted, entirely polliniferous. Ovary 2-carpellary; style filiform; stigma clavate, more or less 5-ribbed with a basal ring and without an apiculus. Disk annular, surrounding and adnate to the ovary. Follicles ovoid-ellipsoidal, 3.5—5 cm long and 1—1.5 cm wide, conspicuously acuminate, longitudinally striate, smooth. Seeds many, naked embedded among fleshy arils.

Bahamas, Cuba, and Lesser Antilles.

In various vegetation types up to 500 m altitude.

Vernacular names: milky tree, milky wood (Windward Group).

SABA: Bottom Hill (Arnoldo 621, fl. Aug.); Spring Bay Gut (Boldingh 2121, fl. July); Mary's Point (Suringar s.n., fl. Ap. [L]); from Crispine to Rendez-Vous (Suringar s.n., fl. Ap. [L]); between Windwardside and Hellsgate (Boldingh 1676, st. July); between The Bottom and Windwardside, 200 m (Boldingh 1357, fl. July); Booby Hill, 600 m (Arnoldo 3285, fl. & fr. Dec.).

ST. EUSTATIUS: slope of The Quill near Glass Bottle (Boldingh 1207, fl. June); slope of The Quill near Bengalen (Stoffers 3771, st. July); slope of The Quill, 300 m (Boldingh 886, fl. & fr. June); top of The Quill, 400 m (Boldingh 234, st. June; Stoffers 3908, st. July; 3930, st. July); inner slope of The Quill, 350 m (Boldingh 464, st. June); Bottom of The Quill (Stoffers 3622, fl. July; 3639, st. July); De Kant (Suringar s.n., fl. May [L]); in garden in Oranjestad (Boldingh 527, st. June); without loc. (v. Groll-Meyer 218, st.).

ST. MARTIN: Mount Paradise, 300—400 m (Boldingh 3213, fr. Sept.; 3325, st. Sept.); mountain between Mont des Accords and Sentry Hill, 0—200 m (Boldingh 2867, st. Aug.).

Nerium Linnaeus, Spec. Plant. 209. 1753

Shrubs or small trees. Leaves verticillate, usually ternate, sometimes quaternate, coriaceous and closely veined. Inflorescence terminal, corymbose, bracteate, bearing many conspicuous flowers. Calyx 5-parted, the lobes equal, acute at the apex, bearing numerous squamellae at the base within. Corolla funnel-shaped, the throat bearing 5 petaloid appendages within, alternating with the corolla-lobes. Stamens inserted at the base of the corolla-tube; anthers connivent and agglutinated to the stigma, with an enlarged basally 2-lobed, apically appendiculate connective; connective inside bearing a globose thickening, appressed to the stigma. Ovary hairy, apocarpous, 2-carpellary; stigma globose, minutely apiculate at the apex and with a thick ring at base. Ovules many. Mericarps 2, cohering for a long time, follicular, 3-angular. Seeds compressed, densely puberulent, comose at the apex.

Three species, ranging from the Mediterranean region to India and Japan.

Nerium oleander L.

LINNAEUS, Spec. Plant. 209. 1753; DUSS, Fl. phan. Ant. franç. 397. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 247. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 1: 158. 1909; URBAN, Symb. Ant. 4: 496. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 322. 1913; Fl. D.W. Ind. Isl. 2: 86. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 94. 1925; QUESTEL, Fl. Isl. St. Bartholomew 168. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 95, fig. 224. 1954; LEON & ALAIN, Fl. Cuba 4: 196, fig. 92. 1957; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 77, fig. 219. 1971; FOURNET, Fl. Guadeloupe & Martinique 1238, fig. 610. 1978.

Shrub or small tree, up to 5 m tall. Leaves petiolate, verticillate, usually in whorls of three; petiole 0.5 cm long; blade coriaceous, oblong-lanceolate, acuminate at the apex, gradually narrowed into the petiole, 2—30 × 0.5—3.5 cm, closely veined, the margin revolute. Inflorescence corymbose, about 15 cm long and up to 10 cm or more in diam., shortly pubescent, bearing many flowers of variable colour. Bracts lanceolate, 0.5 cm long and 2 mm wide. Calyx-lobes lanceolate, acuminate at the apex, bearing numerous squamellae within, 5 mm long and 2 mm wide. Corolla funnel-shaped, scarlet, yellowish-pink or white, glabrous outside; the lower tube 1 cm long and 1.5 mm wide, the upper tube 1 cm long and 0.9 cm wide in the throat, bearing splitted scales, the lobes obovate, 2.5 cm long and 1.5 cm wide. Stamens inserted at the base of the corolla-tube; anthers sagittate, connective basally 2-lobed, apically bearing a long hirsute thread, which is loosely rolled together with those of the other connectives, and bearing a thickening appressed to the stigma. Ovary hairy, apocarpous; stigma globose, minutely apiculate at the top and with a ring at the base. Mericarps brown, longitudinally ribbed, about 12 cm long and 1 cm thick. Seeds brown, 0.5 cm long and 1 mm thick, with a 1 cm long tuft of hairs at the apex.

Native of the Mediterranean region; widely cultivated as an ornamental, possibly escaped in the Windward Group.

Cultivated and planted in the islands of the Netherlands Antilles.

Vernacular names: franse bloem, oleander (Leeward Group).
oleander (Windward Group).

ARUBA: Playa (Arnoldo 305, flb. Dec.).

BONAIRE: airfield (Stoffers 782, fl. & fr. Nov.); Pos Bronswinkel (Stoffers 667, fl. Nov.).

SABA: Windwardside (Boldingh 1939, fl. July).

ST. EUSTATIUS: along roads in Oranjestad (Stoffers 3888, fl. July); without loc. (v. Groll-Meyer 108, fl.).

Urechites Muell. Arg., Bot. Ztschr. 18: 22. 1860

Shrubs or subshrubs; stems twining. Leaves opposite. Inflorescence a few-flowered cincinnus, terminal or lateral, conspicuously bracteate. Calyx 5-parted, the lobes equal, bearing squamellae at the base within. Corolla salver-shaped, the tube not appendaged within, the lobes dextrorsely contorted. Stamens inserted in the cylindrical part of the corolla-tube, included, except for the sometimes very long appendages of the connective; anthers connivent and agglutinated to the stigma, with an enlarged sagittate connective, bearing conspicuous, spirally coiled appendages. Ovary bi-carpellary, apocarpous, carpels united at the apex; stigma ellipsoid, with a basal ring. Disk present, 5-parted. Fruit follicular, linear dehiscent along the ventral suture. Seeds apically comose.

Two species, from southern Florida to Central America and Antilles.

Urechites lutea (L.) Britt.

BRITTON, Bull. N.Y. Bot. Gard. 5: 316. 1907; URBAN, Symb. Ant. 4: 496. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 321. 1913; BRITTON & MILLSAUGH, Bahama Fl. 338. 1920; URBAN, Symb. Ant. 8: 547. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 93. 1925; LEON & ALAIN, Fl. Cuba 4: 194. 1957; ADAMS, Flowering plants of Jamaica 593. 1972; FOURNET, Fl. Guadeloupe & Martinique 1236. 1978; — *Vinca lutea* LINNAEUS, Cent. 2: 12. 1756; — *Echites suberecta* JACQUIN, Enum. Syst. Plant. Carib. 13. 1760; GRISEBACH, Fl. Br. W. Ind. Isl. 415. 1862 [1864] — *Urechites suberecta* MUELL. ARG., Linnaea 30: 444. 1860; BOLDINGH, Fl. D.W. Ind. Isl. 1: 157. 1909.

Somewhat woody twining vine with glabrous to pubescent branches. Leaves opposite, petiolate; petioles 0.5—1 cm long; blade oblong to obovate or suborbicular, shortly acuminate or rounded at the apex, obtuse at the base, 2—8 × 1—6 cm, somewhat coriaceous, glabrous or pubescent on both sides. Inflorescence axillary; peduncle as long as or longer than the subtending leaves, more or less pilose, bearing few to several yellow(ish) flowers; pedicels c. 1 cm long, glabrous or sometimes somewhat pilose. Bracts ovate to lanceolate, up to

1 cm long. Calyx-lobes linear, usually more or less pilose, 1—1.5 cm long, bearing numerous squamellae within. Corolla salver-shaped, glabrous or sometimes pilose outside, without appendages; lower portion of the tube cylindrical, 0.5—1.5 cm long and 2 mm wide at the base, upper portion 1.5—3.5 cm long and 1 cm wide, the lobes obliquely obovate, 2—3 cm long, spreading at anthesis. Stamens inserted in the upper part of the lower tube; anthers 0.5 cm long, the connective sagittate, bearing apical filiform appendages about 1.5 cm long. Ovary 2-carpellary, apocarpous, united at the apex; style filiform, about 1 cm long; stigma ellipsoid, with a basal ring. Disk deeply 5-lobed. Fruit follicular, the follicles linear, 8—20 cm long and 0.5 cm thick, glabrous or pilose. Seeds linear, 1 cm long, with an apical hair-tuft up to 3 cm long.

Southern Florida, Bahamas, Greater Antilles, Virgin Islands, some of the Lesser Antilles.

Mainly in drier vegetations.

Vernacular name: bitter pod (Windward Group).

SABA: Fort Bay (Arnoldo 907, fl. Aug.); Fort Bay Gut, 0—100 m (Stoffers 2882, fl. Ap.); lower part of Bottom Mountain, 250 m (Boldingh 1395, fl. & fr. July); Jenkins Hill, 350 m (Stoffers 3157, fl. March); Spring Bay Gut, 125 m (Stoffers 3281, fl. May).

ST. EUSTATIUS: along road from Oranjestad to Fort de Windt (Stoffers 3519, fl. July); between Oranjestad and Fort de Windt on top of the cliff, 40 m (Boldingh 759, st. June; 776, fr. June); Signal Hill (Boldingh 1045, st. June); near Sugar Loaf (Suringar s.n., st. May [L]); Cultuurvlakte (Suringar s.n., fr. Ap. [L]); near Brooks Well (Suringar s.n., fr. Ap. [L]).

ST. MARTIN: Philipsburg (Burgers 452, fr. March; Arnoldo 3146, fl. Dec.); Fort William, 0—50 m (Boldingh 2549, fr. Aug.); Low Lands (Stoffers 2668, fr. Ap.); near Fort Amsterdam (Suringar s.n., fl. Ap. [L]).