

CAESALPINIACEAE

by

A. L. STOFFERS

(Utrecht)

Trees, shrubs or lianas, rarely herbs. Leaves alternate, pinnate, bipinnate or rarely simple. Petioles and petiolules with pulvini and often with glands. Stipules present; stipellae usually absent. Flowers hermaphrodite, zygomorphic or rarely actinomorphic, 5-merous, arranged in various inflorescences or sometimes solitary. Sepals free or connate, imbricate or valvate, or sometimes the calyx entire in the bud. Petals 5, imbricate, sometimes partly or completely reduced. Receptacle often somewhat cup-shaped. Disc sometimes present. Stamens 10, rarely more, but often partly staminodial or wanting; filaments free or more or less united; anthers dorsifixed and then with longitudinal dehiscence or basifixed and then mostly opening with pores or transversal dehiscent. Ovary uni-locular, superior, sessile or stipitate; style with terminal or almost terminal stigma. Ovules one to many, inserted at the ventral suture, anatropous. Fruit a pod. Seeds with or without endosperm. Embryo large, with foliaceous or thick-fleshy cotyledons.

Over 2200 species in 135 genera, in the warmer parts of the world, especially in the paleotropics.

Key to the genera:

1.	Leaves pinnate	2
	Leaves bipinnate	6
2.	Leaflets 2	3
	Leaflets more than 2	4
3.	Leaflets free	<i>Hymenaea</i>
	Leaflets united over $\frac{1}{2}$ to $\frac{1}{3}$ of their length	<i>Bauhinia</i>
4.	Petals 3; fertile stamens 3	<i>Tamarindus</i>
	Petals 5; stamens 6—10	5

5.	Pod splitting at the middle of the valves	<i>Haematoxylon</i>
	Pod not splitting or splitting along one or both sutures	<i>Cassia</i>
6.	Pod splitting at the middle of the valves	<i>Haematoxylon</i>
	Pod bivalved or not splitting	7
7.	Leaflets numerous on 1—2 pairs of pinnae; the main rhachis prolonged into a spine	<i>Parkinsonia</i>
	Not this combination of characters	8
8.	Plants unarmed	9
	Plants armed with prickles or if unarmed the leaflets less than 1.5 cm long	<i>Caesalpinia</i>
9.	Leaflets more than 4—7 cm long; flowers yellow	<i>Peltophorum</i>
	Leaflets 0.5—1.5 cm long; flowers orange to scarlet	<i>Delonix</i>

Hymenaea Linnaeus, Spec. Plant. 1192. 1753

Large, unarmed trees. Leaves petiolate, bi-foliolate; leaflets coriaceous, unequal-sided, with pellucid dots. Stipules caducous. Inflorescence consisting of terminal corymbose panicles. Receptacle campanulate. Sepals 4, imbricate. Petals 5, unequal. Stamens 10, free. Ovary short-stipitate, its stipe adnate to the receptacle; style elongate; stigma small, terminal. Pod large, woody, indehiscent, with pulpy endocarp. Seeds few; endosperm wanting.

About 15 species, natives of tropical America.

Hymenaea courbaril L.

LINNAEUS, Spec. Plant. 1192. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 213. 1860; DUSS, Fl. phan. Ant. franç. 238. 1897; URBAN, Symb. Ant. 4: 270. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 82. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 219. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 209. 1913; FAWCETT & RENDLE, Fl. Jamaica 4(2): 120, fig. 35. 1920; URBAN, Symb. Ant. 8: 263. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 364. 1924; WILLIAMS, Fl. Trinidad & Tobago 1(4): 283. 1931; QUESTEL, Fl. Isl. St. Bartholomew 115. 1941; LEON & ALAIN, Fl. Cuba 2: 258, fig. 109. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 77. 1954; GOODING *et al.*, Fl. Barbados 182. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 160. 1971; ADAMS, Flowering plants of Jamaica 329. 1972.

Tree, up to 30 m tall; trunk often with small buttresses; bark smooth, greyish-brown, with wort-shaped lenticels. Leaflets sessile, strongly inequilateral, oblong, oblong-lanceolate or oblong-ovate, curved inwards, the inner side less than half as broad as the outer one, 5—14 × 2—6 cm, lustrous, glabrous or nearly so, acute or short-acuminate at the apex, very unequal at the base. Stipules oblong, up to 3 cm long, caducous. Panicles dense, few- to many-flowered; pedicels stout and short. Bracts and bractlets orbicular, caducous. Flowers white. Receptacle oblong campanulate, about 8 mm long, densely

puberulent. Sepals thick-coriaceous, oblong, 1.5 cm long, densely puberulent. Petals whitish, thin, spatulate, about 1.5 cm long, pellucid-punctate, glabrous. Stamens whitish; filaments filiform, 3—3.5 cm long, curved in the bud; anthers oblong, versatile, 8 mm long, with longitudinal dehiscence. Ovary glabrous. Pod nearly sessile, oblong, thick, compressed, dark-brown, roughened, up to 12×5 cm. Seeds few to several, oblong, 2—3 cm long, imbedded in thick, edible, mealy pulp.

Antilles, tropical continental America.

Along roadsides and on wooded hillsides.

Vernacular names: palu kuki (Leeward Group).
locust (Windward Group).

CURAÇAO: (Arnoldo s.n., st.; 1950, st.).

SABA: Windwardside (Boldingh 2332, st. July).

St. EUSTATIUS: slope of The Quill, 250 m (Boldingh 889, st. June); ibid., near Bengalen, 50—200 m (Boldingh 649, st. June); western slope of The Quill, 200—300 m (Stoffers 4735, st. Aug.); The Quill (Suringar s.n., st. May [L]); without loc. (v. Croll-Meyer 216, st.).

St. MARTIN: from Philipsburg to Belvedere (Boldingh 2592, st. Aug.); Cul de Sac (Boldingh 2995, fib. Aug.); Sentry Hill (Suringar s.n., st. May [L]); without loc. (Suringar s.n., st. May [L]).

Tamarindus Linnaeus, Spec. Plant. 34. 1753

Trees. Leaves alternate, paripinnate; leaflets small, opposite, numerous. Stipules minute, caducous. Inflorescence consisting of few-flowered, axillary or terminal racemes. Receptacle narrowly turbinated. Sepals 4, imbricate. Petals unequal, the upper 3 subequal, imbricate, the lower 2 minute, scale-like. Perfect stamens 3; filaments short, united into a sheath open above; staminodes minute. Ovary stipitate, the stipe adnate to the receptacle; style elongate, stigma terminal, truncate, subcapitate. Pod indehiscent, curved, somewhat compressed; epicarp thin, crustaceous; mesocarp pulpy; endocarp thick, coriaceous, forming septa between the seeds. Seeds obovate-orbicular, compressed. Endosperm wanting.

A monotypic genus, probably native of tropical Africa, but nowadays planted and naturalized in the tropics and subtropics of both hemispheres.

Tamarindus indica L.

LINNAEUS, Spec. Plant. 34. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 213. 1860; DUSS, Fl. phan. Ant. franc. 237. 1897; URBAN, Symb. Ant. 4: 270. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 82. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 222. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 209. 1913; Fl. D.W. Ind. Isl. 2: 36. 1914; FAWCETT & RENDLE, Fl. Jamaica 4(2): 119. 1920; URBAN, Symb. Ant. 8: 263. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 165. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 365. 1924; QUESTEL, Fl. Isl. St. Bartholomew 115. 1941; LEON & ALAIN, Fl. Cuba 2: 259.

1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 131. 1954; Zakflora 27. 1954; Zakflora 145. 1964; GOODING *et al.*, Fl. Barbados 183. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 158, fig. 84. 1971; ADAMS, Flowering plants of Jamaica 329. 1972.

A large, unarmed tree, up to 20 m or more tall, with a dense crown; bark brown; branches widely spreading; branchlets slender, puberulent. Leaves short-petiolate, up to 13 cm long, glabrous or nearly so; leaflets in 10—20 pairs, oblong, rounded or slightly retuse at the apex, obliquely obtuse or subtruncate at the base, 12—25 × 3—5 mm; petiole about 0.5 cm long. Racemes few-flowered, mostly shorter than the leaves, about 10 cm long; pedicels slender, up to 1 cm long. Bracts and bracteoles caducous, ovate-oblong, ciliate at the apex, about 8 mm long. Receptacle narrowly turbinate, 4 mm long. Sepals elliptic, about 1 cm long. The 3 superior petals slightly longer than the sepals, ovate, white or pale-yellow with red veins; the 2 inferior ones setaceous or scale-like, 2 mm long. Filaments of the fertile stamens about 22 mm long, pubescent at the base; anthers ovate, versatile, 2.5 mm long, with longitudinal dehiscence. Ovary sparsely pubescent; stipe 6 mm long, the free part pubescent. Pod linear-oblong, slightly compressed, 5—15 × 2—2.5 cm; epicarp brown and scaly; pulp acid, used for syrup. Seeds 2—8, obovate, brown, shining, about 1 cm broad.

Distribution as the genus.

Vernacular names: tamarijn (Leeward Group).
 tamarind (Windward Group).

ARUBA: San José (Arnoldo 318, fr. Dec.); without loc. (Koolwijk sub Suringar s.n., st. [L]).

BONAIRE: Kralendijk (Arnoldo 521, fl. July); Bolivia Plantation (Stoffers 674, fl. Nov.).

CURAÇAO: Malpais (Stoffers 447, fl. & fr. Oct.); Mundo Nobo (Arnoldo 1180, fl. Sept.); Noordkant Plantation (Stoffers 147, fl. Oct.).

SABA: The Bottom (Arnoldo 563, fl. Aug.; Boldsingh 1874, fl. July; 1873, fl. July); between The Bottom and Mary's Point (Boldsingh 1547, fl. July).

ST. EUSTATIUS: seashore near Oranjestad (Boldsingh 29, st. May); slope of the lower part of Signal Hill (Boldsingh 112, fl. May); in garden in Oranjestad (Boldsingh 1065, fl. June); without loc. (v. Groll-Meyer 47, fl.).

ST. MARTIN: Princess Quarter (George s.n., sub Boldsingh 2468, st. Aug.); from Philipsburg to Guana Bay (Boldsingh 2350, st. Aug.).

Bauhinia Linnaeus, Spec. Plant. 374. 1753

Shrubs, trees or lianas. Leaves alternate, entire or bi-lobate (composed of two more or less connate leaflets) or sometimes bi-foliolate. Stipules small, caducous. Inflorescence consisting of terminal or axillary racemes or panicles or flowers solitary. Receptacle elongate, short or nearly wanting. Calyx in the bud entire, at anthesis variously splitting; flowerbuds often apiculate with the short free

tips of the sepals. Petals 5, slightly unequal, erect or spreading, imbricate. Perfect stamens 10—1. Ovary stipitate or sessile, its stipe free or adnate to the receptacle. Pod linear or oblong, compressed, bivalved, rarely indehiscent. Seeds ovate or orbicular, compressed; testa thin or indurate. Endosperm present.

Over 250 species in the tropics and subtropics of both hemispheres.

Bauhinia monandra Kurz

KURZ, Journ. As. Soc. Beng. 42(2): 73. 1873; URBAN, Symb. Ant. 8: 264. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 118. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 363. 1924; LEON & ALAIN, Fl. Cuba 2: 255. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 26, fig. 14. 1954; Gekw. en nutt. pl. Ned. Ant. 153, fig. 14. 1971; — *Bauhinia kappleri* SAGOT, Ann. Sc. Nat. ser. 6, 13: 317. 1882; URBAN, Symb. Ant. 4: 271. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 83. 1909; Fl. Ned. W. Ind. Eil. 209. 1913; — *Bauhinia krugii* URBAN, Ber. deutsch. bot. Ges. 3: 83. t. 8, fig. 2, 9, 18. 1885; — *Caspariopsis monandra* (KURZ) BRITTON & ROSE, N. Am. Fl. 23(4): 217. 1930.

Shrub or small tree, up to 7 m high; twigs pubescent. Leaves 11—13-veined, truncate or cordate at the base, 5—16 cm long and broad; leaflets 2, united $\frac{1}{2}$ — $\frac{2}{3}$ of their length, obtuse at the apex, glabrous on the upper surface, puberulous on the veins beneath; petiole up to 7 cm long, pulvinus at the apex conspicuous. Stipules triangular to lanceolate, 3—6 mm long. Racemes few-flowered; pedicels about 3 cm long, densely puberulous. Flowerbuds attenuate at both ends, puberulous, with 5 short teeth at the apex. Flowers hermaphrodite or sometimes ovary abortive. Receptacle cylindric, 3—3.5 cm long, 3 mm broad, densely puberulous. Calyx-limb laterally splitting, tomentellous, 2 cm long. Petals obovate, clawed, ciliate, whitish to pink, one of them red- or carmine-spotted, 4—5 \times 2—2.5 cm. Perfect stamens 1; filaments 4 cm long, puberulous near the base; anther linear, about 6 mm long, versatile, with longitudinal dehiscence. Staminodes small, with free or partly connate filaments, puberulent. Ovary stipitate, puberulous, at length glabrate, its stipe adnate to the receptacle. Pod linear, straight, flat, up to about 20 cm long and 2.5 cm wide, with a 1—1.5 cm long beak; valves coriaceous, twisting after dehiscence. Seeds 16—25, separated by a pithy substance, flat, about 1 cm long, black and shiny.

Native of south-eastern Asia; introduced into tropical America and often escaped from cultivation.

Cultivated and naturalized.

Vernacular name: vlinderbloem (Leeward Group).

CURAÇAO: Cas Cora (Stoffers 415, fl. Oct.); without loc. (Arnoldo 43, fl. Feb.).

SABA: The Bottom (Arnoldo 963, fl. Sept.; Boldingh 1990, fl. July; Stoffers 3295, fl. & fr. Aug.; Suringar s.n., fr. Ap. [L]); Ladder Gut (Suringar s.n., fl. & fr. Ap. [L]).

St. EUSTATIUS: along roads in Oranjestad (Stoffers 3887, st. July); without loc. (v. Groll-Meyer 96, st.).

Cassia Linnaeus, Gen. Plant. ed. 5. 178. 1754

Trees, shrubs or herbs. Leaves paripinnate, with or without glands; leaflets opposite. Stipules deciduous or persistent. Inflorescence consisting of axillary or terminal, often paniculate racemes or the flowers solitary; bracts and bracteoles mostly small, deciduous or persistent. Receptacle small, flat or saucer-shaped. Sepals 5, free, subequal. Petals 5, unequal, the uppermost smallest. Stamens 10; all perfect or 3—4 staminodial, rarely 1—5 wanting; anthers oblong to linear, basifixied, dehiscent by apical pores or splits or sometimes dehiscent partly by longitudinal and partly by short basal splits. Ovary sessile or short-stipitate. Pod variously shaped, dehiscent or indehiscent, sometimes with twisting valves. Seeds various.

Over 500 species in the tropics and the subtropics.

K e y to the species:

1. Largest leaflets over 12 cm long. (Cultivated) 2
- Leaflets much smaller 3
2. Flowers yellow; leaflets obliquely truncate or semi-cordate at the base; pod with wings on the middle of the valves *C. alata*
Flowers orange; leaflets broadly cuneate at the base *C. fistula*
3. Leaflets linear and up to 2 cm long or obovate and then less than 1.5 cm long 4
- Leaflets not of these characters 6
4. Leaflets wedge-shaped, coriaceous, about 0.8 cm long *C. obcordata*
Leaflets linear-oblong or linear 5
5. Sepals 4—5 mm long; the inferior petal longer than the sepals
C. chamaecrista
Sepals 10—12 mm long; all petals longer than the sepals
C. glandulosa var. *swartzii*
6. Stems and petioles with glandular viscid hairs *C. absus*
Plant glabrous or pubescent, but without viscid hairs 7
7. Leaves eglandular 8
- Leaves provided with glands 9

8. Erect or decumbent, glabrous herb or shrub; pod up to 7 cm long, with a series of crests in the middle of the valves *C. obovata*
- Tree or tall shrub with rather stout branches and densely pubescent young twigs; leaflets tomentose beneath; pod 10—25 cm long, swollen along the margins *C. emarginata*
9. Glands at the base of the petiole 10
- Glands at the rhachis, between the insertion of the lowest pair(s) of leaflets 11
10. Pod flat *C. occidentalis*
- Pod swollen *C. sophera*
11. Stipules 3 mm long; racemes axillary, few-flowered, surpassing the leaves in length; pedicels 2—5 mm long *C. bicapsularis*
- Stipules 10—15 mm long; flowers solitary or in pairs on 1—2 cm long pedicels *C. tora*

Cassia fistula L.

LINNAEUS, Spec. Plant. 377. 1753; COLLADON, Hist. Cass. 85. 1816; CRISSEBACH, Fl. Br. W. Ind. Isl. 208. 1860; DUSS, Fl. phan. Ant. franç. 231. 1897; URBAN, Symb. Ant. 4: 272. 1905; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 216. 1909; URBAN, Symb. Ant. 8: 265. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 102. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 368. 1924; QUESTEL, Fl. Isl. St. Bartholomew 115. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 39, fig. 79. 1951; Gekw. en nutt. pl. Ned. Ant. 158, fig. 79. 1971.

Deciduous tree, 5—20 m tall; branches spreading; branchlets glabrous. Leaves petiolate, eglandular; petiole terete, 7—10 cm long, glabrous; rhachis 10—25 cm long; petioles 3—8 mm long, dark-brown; leaflets in 3—8 pairs, ovate to ovate-oblong, slightly unequal sided, acute, obtuse or somewhat retuse at the apex, broadly cuneate at the base, 6—12 (-20) × 3—8 cm, upper surface sparsely puberulous when young, glabrous and shining afterwards, tomentose and glabrescent beneath. Inflorescence consisting of pendent, axillary racemes, 1 to 3 together, lax, open, many-flowered, and up to 40 cm long; peduncle up to 10 cm long, glabrous. Bracts ovate, long-acute, 8—10 mm long, puberulous. Flowers large, yellow; pedicels slender, glabrous, 3—5 cm long. Sepals ovate or oblong, obtuse, puberulent, 6—10 mm long. Petals bright yellow, oblong to obovate, obtuse at the apex, 2—3 cm long, the blade narrowing into a very short claw. Stamens 10; the three lower ones twice curved, the filaments 3 cm long, the anthers 5 mm long, opening at the top; at the base or often by a longitudinal slit; 4 stamens shorter, 8—10 mm long, the anthers opening by a basal pore; the other 3 stamens about 5 mm long with poorly developed anthers. Ovary slender, appressed puberulous. Pod terete, up to 60 cm long and 1.5—2 cm wide, black, indehiscent and glabrous. Seeds many, flattened, ovate, arranged transversely in the pod, smooth and glossy brown.

Tropics; probably native of tropical Asia. Cultivated in the islands of the Leeward- and Windward Group.

Vernacular names: *trommelstok* (Leeward Group).
liquorice plant (Windward Group).

SABA: The Bottom (Boldingh 2265, st. July).

ST. EUSTATIUS: in garden in Oranjestad (Boldingh 931, fl. & fr. June); without loc. (v. Groll-Meyer 127, fl.).

Cassia bicapsularis L.

LINNAEUS, Spec. Plant. 376. 1753; COLLADON, Hist. Cass. 100. 1816; GRISEBACH, Fl. Br. W. Ind. Isl. 207. 1860; DUSS, Fl. phan. Ant. franç. 231. 1897; URBAN, Symb. Ant. 4: 273. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 83. 1909; Fl. Ned. W. Ind. Eil. 210. 1913; Fl. D.W. Ind. Isl. 2: 37. 1914; URBAN, Symb. Ant. 8: 265. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 103. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 166. 1920; WILLIAMS, Fl. Trinidad & Tobago 1(4): 269. 1931; ARNOLDO, Zakflora 59. 1954; Zakflora 137. 1964; GOODING *et al.*, Fl. Barbados 178. 1965; ADAMS, Flowering plants of Jamaica 324. 1972; — *Adipera bicapsularis* (L.) BRITTON & ROSE in BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 370. 1924.

Shrub, up to 3 m high, glabrous or nearly so; branches slender, spreading, pendant or more or less climbing. Leaves (2-) 3 (-5)-jugate; rhachis bearing a club-shaped, 1—1.5 mm long gland between the insertion of the lowest pair of leaflets; leaflets 1.5—3.5 × 1—2 cm, the upper pair obovate, rounded or slightly emarginate at the apex, rounded or narrowed at the base, the lower ones oblong to suborbicular, rounded or slightly emarginate at the apex, and rounded or slightly narrowed at the base; petiolules about 1 mm long; petioles 1—2 cm long. Stipules lanceolate-subulate, 3 mm long, caducous. Racemes axillary, few-flowered, usually surpassing the leaves in length; peduncle about 3 cm long; pedicels slender, 2—5 mm long; bracts subulate, minute, caducous. Sepals unequal, 8—13 × 3—7 mm, faintly veined, the two smaller ones oblong, obtuse at the apex, the three larger ones obovate and rounded at the apex. Petals obovate, oblong or elliptic, 15—17 × 6—8 mm, yellow. Stamens: 2 much longer than the rest, with 1 cm long, more or less winged filaments and 8 × 2 mm anthers, opening by terminal pores; one stamen intermediate with 3 mm long filaments and 8 × 1 mm anthers; four stamens very short with 2 mm long filaments and 5 mm long anthers, opening by terminal pores. Staminodes 3: 5 mm long, dilated at the apex. Ovary glabrous. Pod stipitate, subcylindric, glabrous, 6—15 × 1—1.5 cm, usually straight, rounded or mucronate at apex, dehiscent tardily along the inner suture. Seeds arranged transversely in the pod, lenticular or obliquely oval, 4—5 × 3 mm, shining, brown.

West Indies, Bermuda, and tropical continental America; introduced into the tropics of the Old World.

Common on waste places.

Vernacular names: *brusca dushi*, *tamarijn shimarón*, *trommelstok*
shimarón (Leeward Group).
blydog (Windward Group).

BONAIRE: Hills near Goto (?) (Boldingh 7311, fl. & fr. Feb.); Montagne (Stoffers 897, fl. Dec.); Guatemala Plantation (Stoffers 808, fl. & fr. Nov.); along road from Kralendijk to Rincon (Suringar s.n., fl. & fr. Feb. [L]); near Tanki Marakka (Stoffers 847, fl. & fr. Dec.); Sabana (Stoffers 962, fl. & fr. Dec.); Coeroeboeroe (Stoffers 455, fl. & fr. Oct.); Airfield (Stoffers 769, fl. Nov.); Santa Barbara (Stoffers 790, fl. Nov.); Kralendijk (Stoffers 912, fl. Dec.; Suringar s.n., fl. & fr. Feb. [L]); Rif (Britton & Shafer 3089, fr. March); Slagbaai Plantation (Suringar s.n., fl. & fr. Feb. [L]).

CURAÇAO: Calcareous hills near Siberie (Boldingh 5266, fr. Nov.; 5265, fr. Nov.); Willemstad (Arnoldo 1894, fl. Jan.); along road to Westpunt (Stoffers 1325, fl. Jan.); without loc. (Aschenberg s.n., fl.).

ST. MARTIN: along road in Cul de Sac (Stoffers 2459, fl. March; 2441, fl. March); lower part of mountain between Mount Chambord and Mount Vernon (Boldingh 2955, st. Aug.); from Philipsburg to Guana Bay (Boldingh 2370, st. Aug.); hills along western side of Cul de Sac, north of Sentry Hill (Stoffers 2585, fl. March).

SABA: Windwardside (Boldingh 1891, fl. July); Rendez-Vous, 475 m (Stoffers 4253, st. Aug.); Ladder Gut, 100–200 m (Stoffers 2795, fl. Ap.).

ST. EUSTATIUS: between Oranjestad and Fort de Windt on the top of the cliff, 40 m (Boldingh 793, st. June); gut near Fort de France, 50 m (Boldingh 846, st. June); Glass Gut near the seashore, near Oranjestad (Boldingh 50, fr. May); seashore near Oranjestad (Boldingh 26, st. Aug.); along road near Glass Bottle (Boldingh 1214, fr. June); in deserted plantations at the seashore near Bengalen (Boldingh 591, fl. June); slope of lower part of Signal Hill (Boldingh 113a, st. May); slope of The Quill near Bengalen, 170 m (Stoffers 3774, st. July); Cultuurvlakte (Suringar s.n., fl. Ap.); without loc. (v. Groll-Meyer 25, fl.).

Cassia tora L.

LINNAEUS, Spec. Plant. 376. 1753; **URBAN**, Symb. Ant. 4: 274. 1905; Symb. Ant. 8: 267. 1920; **BRITTON & MILLSPAUGH**, Bahama Fl. 166. 1920; **FAWCETT & RENDLE**, Fl. Jamaica 4(2): 105. 1920; **WILLIAMS**, Fl. Trinidad & Tobago 1(4): 271. 1931; **QUESTEL**, Fl. Isl. St. Bartholomew 116. 1941; **LEON & ALAIN**, Fl. Cuba 2: 262. 1951; — *Emelista tora* (L.) **BRITTON & ROSE** in **BRITTON & WILSON**, Sci. Surv. Porto Rico & Virgin Isl. 5: 371. 1924; **ADAMS**, Flowering plants of Jamaica 325. 1972; — *Cassia obtusifolia* **LINNAEUS**, Spec. Plant. 377. 1753; **GRISEBACH**, Fl. Br. W. Ind. Isl. 209. 1860; **DUSS**, Fl. phan. Ant. franç. 235. 1897; **GOODING et al.**, Fl. Barbados 179. 1965.

Shrubby annual, up to 1 m tall; stems terete, glabrous or sparingly pubescent. Leaves with 2 to 4, usually 3 accrescent pairs of leaflets; leaflets nearly sessile, obovate or obovate-oblong, rounded or obtuse and mucronate at the apex, obliquely cuneate to rounded at the base, 1.5–6 × 1–3 cm, glabrous at both sides or pubescent beneath; rhachis up to 3 cm long, bearing a slender, cylindric, orange-coloured, 2 mm long gland between the lowest pair of leaflets or between the two lowest pairs; petiole 1–4 cm long, ribbed, sparsely pubescent. Stipules linear-subulate, long-acute, 10–15 mm long, subpersistent. Flowers solitary or in pairs on a short, about 1 mm long peduncle in the upper axils. Bracts linear-lanceolate, 2–4 mm long; pedicels 1–2 cm long. Sepals narrowly ovate, blunt or rounded, puberulous and fringed on the margin, 6–10 mm, the two exterior smaller. Petals bright yellow, unequal, obovate or obovate-elliptical, rounded or retuse at the apex, narrowed towards the base, 8–14 mm long.

Perfect stamens 7: the 3 inferior with slender, glabrous, 2 mm long filaments and 2—2.5 mm long anthers, opening by a double, apical pore; the 4 lateral stamens with similar, 1—1.5 mm long filaments and 1.5 mm long anthers; the 3 upper stamens staminodial or wanting. Ovary pubescent. Pod linear, curved, terete to more or less tetragonal, beaked, indehiscent, (7-) 10—20 cm long and 2—5 mm thick. Seeds 20—30, obovate-rhomoid, about 5 mm across, glossy, longitudinal.

Tropics and subtropics.

Waste and cultivated grounds.

ST. MARTIN: Great Pond (Arnoldo 1228, fl. & fr. March).

Cassia alata L.

LINNAEUS, Spec. Plant. 378. 1753; COLLADON, Hist. Cass. 91. 1816; GRISEBACH, Fl. Br. W. Ind. Isl. 209. 1860; BOLDINGH, Fl. D.W. Ind. Isl. 2: 83. 1909; Fl. Ned. W. Ind. Eil. 210. 1913; FAWCETT & RENDLE, Fl. Jamaica 4(2): 109. 1920; URBAN, Symb. Ant. 8: 269. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 374. 1924; WILLIAMS, Fl. Trinidad & Tobago 1(4): 268. 1931; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 39, fig. 67. 1971; ADAMS, Flowering plants of Jamaica 325. 1972.

Shrub, up to 3 m tall; branches thick, finely pubescent; young twigs, petioles, and inflorescences puberulous. Stipules subpersistent, rigid-coriaceous, lanceolate, 1—2 cm long. Leaves eglandular, with 4—10 accrescent pairs of leaflets; rhachis up to 60 cm long, terete with two narrow rims on the upper side, which are connate by transverse rims between the petiolules; petiolules about 4 mm long, puberulous; leaflets unequal-sided, oblong to obovate, obtuse, rounded or retuse at the apex, obliquely truncate or semi-cordate at the base, 5—16 × 3—7 cm, glabrous above, often puberulent beneath. Inflorescence consisting of axillary racemes near the top of the branches, forming a large, up to 70 cm long, terminal panicle; peduncles 10—20 cm long; bracteoles ovate, apiculate or obtuse, orange-coloured, 1.5—3 × 1—2 cm, at first imbricate, deciduous. Sepals free, obovate to oblong, membranaceous, 15—20 × 4—6 mm, orange-coloured, the margin minutely ciliolate. Petals golden yellow, broadly obovate, the blade 1.5—2 × 1 cm, the claw 2—3 mm long. Fertile stamens 6; two much longer than the other four; staminodes 4, three together and one between the large stamens. Ovary revolute, glabrous or pubescent. Pod linear-oblong, straight or nearly so, 10—15 cm long and 1.5 cm wide; valves chartaceous, nearly black, shining, glabrous, each with a broad, crenulate, longitudinal wing on the middle of the valves. Seeds quadrangular, compressed, 8—10 × 5—8 mm.

Tropical America; introduced into the tropics of the Old World.

Cultivated in the islands of the Netherlands Antilles.

Vernacular names: buniteza di jonkuman, brigida, balor di jonkuman (Leeward Group).

ST. EUSTATIUS: in garden in Oranjestad (Boldingham 518, st. June); without loc. (v. Groll-Meyer 59, st.).

ST. MARTIN: Philipsburg (Arnoldo 1329, fl. March).

Cassia obovata Collad.

COLLADON, Hist. Cass. 92, t. 15A. 1816; GRISEBACH, Fl. Br. W. Ind. Isl. 209. 1860; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 216. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 1: 84. 1909; Fl. Ned. W. Ind. Eil. 211. 1913; Fl. D.W. Ind. Isl. 2: 37. 1914; URBAN, Symb. Ant. 8: 269. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 110. 1920; ARNOLDO, Zakflora 103. 1954; Zakflora 137. 1964; — *Senna obovata* (COLLAD.) BATKA, Mon. Senn. 32, 46. 1866; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 373. 1924.

Erect or decumbent, glabrous, eglandular herb or shrub, up to 1.20 m tall. Leaves 4- to 7-jugate; leaflets obovate, oblong, oblong-lanceolate or obovate-elliptic, rounded or broadly rounded and mucronate at the apex, obliquely rounded or cuneate at the base, 1—4 × 1—2 cm, nearly sessile; petiole slender, up to 5 cm long. Stipules persistent, lanceolate, acuminate, 4—6 mm long. Inflorescence consisting of several- to many-flowered, axillary racemes, up to 15 cm long; peduncle 3—4 cm long; bracts 4—7 mm long, caducous; pedicels 2 mm long. Sepals subequal, oblong, rounded at the apex, 8—10 × 6 mm, subcucullate. Petals subequal obovate, rounded at the apex, 10—12 × 4—5 mm, bright or pale yellow, veined. Stamens 7; the two lower ones longest, with 3 mm long filaments and linear, 8 mm long anthers, opening by terminal pores; one intermediate with 3—4 mm long filament and linear, 5 mm long anther, opening by terminal pores; four smallest ones with 3 mm long filaments and linear, 4 mm long anthers, opening by terminal pores. Staminodes 3, deltoid, on 2 mm long filaments. Ovary short-stipitate. Pod stipitate, flat, oblong, rounded at both ends, 3—6 cm long and 1.5 cm wide, curved, dehiscent along both sutures, with a series of crests in the middle of the valves, one over each seed. Seeds 4—8, arranged transversely in the pod, club-shaped, compressed, 6 × 4 mm, blackish-grey.

Native of the Old World tropics; recorded as introduced into Venezuela, Jamaica, Hispaniola, St. Thomas, St. Martin, Aruba, Bonaire, and Curaçao.

Common weed on waste places.

Vernacular names: Sennéblar (Leeward Group).

ARUBA: along roads in Oranjestad (Stoffers 2146, fl. & fr. Feb.; Suringar s.n., fr. Jan. [L]); along road in vicinity of Oranjestad (Stoffers 2047, fl. Feb.); hills N.E. of Andicouri Plantation (Stoffers 1833, fl. & fr. Jan.); Palm Beach (Stoffers 1790, fr. Jan.); Matavidiri, N.E. slope (Stoffers 2032, fr. Feb.); Annabosi (Stoffers 1339, fr. Jan.); Boca Mahos (Stoffers 1474, fl. & fr. Jan.); Kudarebe (Stoffers 1357a, fr. Jan.); in field of aloes near Spaans Lagoen (Stoffers 1455, fl. & fr. Jan.); calcareous soil near Oranjestad (Boldingh 6215, fl. Dec.); Compasnashi (Arnoldo 142, st. Dec.); without loc. (Koolwijk sub Suringar s.n., fl. [L]).

BONAIRE: Rooi Pagaai (Stoffers 518, fl. & fr. Nov.); Guatema Plantation (Stoffers 802, fl. & fr. Nov.); Seroe Grandi (Stoffers 916, fl. & fr. Dec.); road to Guatema Plantation (Arnoldo 496, fl. & fr. Feb.); Airfield (Stoffers 773, flb. Nov.).

CURAÇAO: Parera (Arnoldo 1757, fl. & fr. Dec.); hills near Savonet (Boldingh 4969, fr. Nov.); road from Westpunt to Savonet (Boldingh 5061, fl. Nov.);

St. Jan (Suringar s.n., fl. Jan. [L]); Savonet Plantation (Suringar s.n., fr. Jan. [L]); de Wilde 101A, fl. & fr. Ap. [L]).

ST. MARTIN: along Great Salt Pond near Philipsburg (Boldingh 2441, fl. & fr. Aug.); Guana Bay (Suringar s.n., fl. & fr. May [L]).

Cassia occidentalis L.

LINNAEUS, Spec. Plant. 377. 1753; COLLADON, Hist. Cass. 107. 1816; GRISEBACH, Fl. Br. W. Ind. Isl. 209. 1860; DUSS, Fl. phan. Ant. franç. 235. 1897; URBAN, Symb. Ant. 4: 273. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 84. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 216. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 211. 1913; URBAN, Symb. Ant. 8: 266. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 166. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 104. 1920; WILLIAMS, Fl. Trinidad & Tobago 1(4): 273. 1931; QUESTEL, Fl. Isl. St. Bartholomew 115. 1941; LEON & ALAIN, Fl. Cuba 2: 263. 1951; ARNOLDO, Zakflora 60, 106. 1954; Zakflora 138. 1964; GOODING *et al.*, Fl. Barbados 180. 1965; ADAMS, Flowering plants of Jamaica 326. 1972; — *Ditremexa occidentalis* (L.) BRITTON & ROSE in BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 372. 1921.

Erect, branched, annual or perennial herb, up to 2 m high, sometimes woody at the base, glabrous. Leaves 4- to 6-jugate; leaflets ovate to ovate-oblong, acute or short-acuminate at the apex, obliquely rounded at the base, 2—9 × 1—3.5 cm, glabrous, but the margin ciliolate; petiole 3—4 cm long, bearing a large, sessile, globose gland at the base. Stipules lanceolate or triangular and long-acute, 4—6 mm long, caducous. Inflorescence consisting of few-flowered, axillary racemes; bracts lanceolate, acuminate, 1.5 × 0.5 cm, caducous; pedicels 1 cm long, tomentose. Sepals oblong to obovate, rounded or acute at the apex, 7—11 × 5—6 mm, the two exterior smallest and slightly cucullate, green or somewhat coloured, veined. Petals unequal, yellow or orange-yellow, obovate to broadly obovate, rounded at the apex, 12—14 × 6—7 mm, one of them more or less clawed and emarginate at the apex, about 14 × 9 mm. Stamens: 6 fertile, two of them larger than the others, with stout and fleshy, 6 mm long filaments and linear, curved, 5 mm long, rostrate anthers opening by terminal pores; the smaller ones with 4 mm long filaments and 4 mm long, rostrate anthers, opening by terminal pores; the inferior stamen sterile with linear lamina; superior staminodes 3 with broad lamina. Ovary short, tomentose. Pod linear, not pendulous, slightly curved or straight, apiculate at the top, tapering at the base, 5—13 cm long and 6—9 mm broad, at first flat with thickened margins, when ripe thick-compressed with broad margins, bivalved, septate. Seeds many, arranged transversely in the pod, compressed, obovoid, dark olive to brown, 4 mm long.

Tropical regions, probably of American origin.

Common weed of waste and cultivated places at lower and middle elevations.

Vernacular names: brusca (Leeward Group).
bitter root (Windward Group).

ARUBA: Playa (Arnoldo 176, fl. & fr. Dec.); along road in vicinity of Oranjestad (Stoffers 2050, fl. Feb.); without loc. (Beaujon s.n., fr.).

BONAIRE: along seashore south of Kralendijk (Stoffers 502, fl. & fr. Nov.); Sabana (Stoffers 963, fl. & fr. Dec.).

CURAÇAO: Savonet Plantation (Suringar s.n., fl. & fr. Jan. [L]); west of Willemstad (de Wilde 87, fl. & fr. Dec. [L]).

SABA: The Bottom (Boldinh 2243, fl. & fr. July); Arnoldo 709, fl. & fr. Aug.; 904, fl. & fr. Aug.; Stoffers 3301, fl. & fr. May); lower part of Bottom Mountain, 250 m (Boldinh 1394, fl. July); Hellsgate (Stoffers 3370, st. May).

ST. EUSTATUS: along roads in Oranjestad (Boldinh 1103, fl. & fr. June); seashore near White Wall (Boldinh 859, fl. June); along roads near Glass Bottle (Boldinh 864, fl. & fr. June); without loc. (v. Groll-Meyer 4, fl. & fr.; Boldinh 562 u, fl.).

ST. MARTIN: in pasture grounds near Bellevue (Boldinh 2843, fl. & fr. Aug.); along the roads to Fort William, 0–50 m (Boldinh 2525, fl. Aug.); along roads in Cul de Sac (Stoffers 2452, fl. & fr. March); along roads in Philipsburg (Stoffers 2310, fl. March); Princes Quarter (Suringar s.n., fl. & fr. May [L]); Kanaal Rolandus (Stoffers 2273, fl. & fr. March); without loc. (Boldinh 2524, fr.).

Cassia sophera L.

LINNAEUS, Spec. Plant. 379. 1753; **COLLADON**, Hist. Cass. 90. 1816; **BOLDINGH**, Fl. Ned. W. Ind. Eil. 211. 1913; Fl. D.W. Ind. Isl. 2: 37. 1914; **URBAN**, Symb. Ant. 8: 266. 1920; **BRITTON & MILLSPAUGH**, Bahama Fl. 166. 1920; **WILLIAMS**, Fl. Trinidad & Tobago 1(4): 273. 1931; **LEON & ALAIN**, Fl. Cuba 2: 264. 1951; **ARNOLDO**, Zakflora 60, 106. 1954; Zakflora 138. 1964; **ADAMS**, Flowering plants of Jamaica 326. 1972; — *Ditremexia sophera* (L.) **BRITTON & ROSE** in **BRITTON & WILSON**, Sci. Surv. Porto Rico & Virgin Isl. 5: 372. 1924.

Erect shrub, up to 2.5 m tall, diffusely branching; branches slender. Leaves 5- to 10-jugate, 10–15 cm long; leaflets lanceolate to ovate-oblong, acute or acuminate at the apex, obliquely rounded or cuneate at the base, 3–6 × 1–2 cm; petiolules about 2 mm long; petiole 2–5 cm long, glabrescent, bearing a club-shaped gland near the base. Stipules ovate, caducous, glabrous, 5–7 mm long. Inflorescence consisting of 4- to 10-flowered, short racemes, in the axils of the upper leaves; peduncle 0.5–2 cm long, roughly pubescent; pedicels 7–15 mm long, roughly pubescent; bracts ovate, acute, 4–5 mm long, pubescent; bracteoles wanting. Sepals ovate to obovate, 6–8 mm long, slightly unequal, the two upper somewhat cucullate. Petals obovate or orbicular and clawed, 12–14 × 6–7 mm, rounded at the apex, pale-yellow, dark-veined. Fertile stamens 6: the two inferior largest, with 6 mm long filaments and 5 mm long, slightly curved, rostrate anthers, opening by terminal pores; 4 lateral stamens smaller with 2 mm long filaments and 4 mm long, rostrate anthers, opening by terminal pores. Staminodes 4: the 3 superior 4 mm long with broadened lamina and one inferior with linear, 5 mm long lamina. Ovary short-pubescent. Pod linear, straight, or slightly curved, turgid or sub-terete, 5–10 cm long, 8–10 mm thick, apiculate, glabrous, margins broad, light-

coloured, sutures slender, transversely and longitudinally septate. Seeds 30—40, obliquely D-shaped, compressed, 4—5 mm long, brown.

Pantropic; probably of American origin.

Road sides and waste places at lower and middle altitudes.

Vernacular name: brusca (Leeward Group).

ARUBA: along roads near Kleine Jamanota (Stoffers 2001, fr. Jan.).

BONAIRE: calcareous rocks near Slagbaai (Boldinh 7312, fl. & fr. Feb.); calcareous plateau near Fontein (Boldinh 7332a, fr. Feb.); Slagbaai Plantation (Suringar s.n., fl. & fr. Feb. [L]).

CURAÇAO: San Pedro (Boldinh 5306, fl. & fr. Nov.); from Veeris Berg to Piscadera (Boldinh 4745, fl. Oct.); Hofje of Knip (Boldinh 5488, fl. & fr. Dec.); Grote Berg (Stoffers 336, fl. Oct.); Savonet (Suringar s.n., fr. Jan. [L]).

Cassia emarginata L.

LINNAEUS, Spec. Plant. 376. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 207. 1860; Duss, Fl. phan. Ant. frang. 232. 1897; URBAN, Symb. Ant. 4: 274. 1905; Symb. Ant. 8: 268. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 108. 1920; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 216. 1909; ARNOLDO, Zakflora 137. 1964; ADAMS, Flowering plants of Jamaica 324. 1972; — *Cassia arborescens* MILLER, Gard. Dict. ed. 8. 1768; — *Isandrina emarginata* (L.) BRITTON & ROSE in BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 374. 1924.

Small tree or tall shrub; the branches rather stout; the young twigs densely pubescent, glabrescent in age. Leaves 3—6-jugate, up to 25 cm long; leaflets broadly oblong, oblong-orbicular or oval, obtuse, acutish or emarginate and often mucronulate at the apex, rounded or obtuse at the base, 2—5.5 × 1—2.5 cm, puberulent or glabrous above and tomentose beneath; petiole up to 7.5 (-12) cm long; glands wanting. Stipules about 3 mm long, setaceous. Inflorescence consisting of few- to several-flowered corymbose racemes in the upper leaf axils, crowded with the leaves at the end of the branches; bracts and bracteoles lanceolate, 4—7 mm long, caducous. Petals densely pubescent, 1.5—2.5 cm long. Sepals unequal in shape and length, green, 4—7.5 mm long, the exterior smallest, ovate and cucullate, the inferior ones obovate. Petals clawed, unequal in size and shape, yellow, four obovate, about 10 mm long, included the 4 mm long claw and 3.5—4.5 mm wide, the fifth larger, about 15 mm long, of different form, cucullate, somewhat S-shaped and with wavy margin. Stamens: 7 fertile with stout and fleshy, 1—2 mm long filaments and linear, 4 mm long anthers, the latter provided with a few hairs at the apex and opening by terminal pores; the 3 staminodes with 2 mm long fleshy filaments and flattened, more or less rectangular anthers. Ovary glabrous. Pod pendulous, linear, strap-shaped, straight or slightly curved, swollen along the margins, 10—25 (-35) cm long and about 1 cm broad, glabrous, black. Seeds many, arranged transversely in the pod, ovoid, compressed, 5 × 3 mm, brown.

Mexico to Colombia and Venezuela, Greater Antilles, Guadeloupe, St. Vincent, Margarita, Aruba, and Curaçao.

ARUBA: Mirlamar (Beaujon s.n., st. Jan.); without loc. (Beaujon s.n.).

CURAÇAO: Wacao (Boldingh 5166, fr. Nov.).

Cassia obcordata Sw.

SWARTZ ex Wikström, Vet. Acad. Handl. Stockh. 1825: 429. 1826; QUESTEL, Fl. Isl. St. Bartholomew 116. 1941; — *Chamaecrista obcordata* (Sw.) BRITTON, Bull. Torrey Bot. Club 44: 6. 1917; BRITTON & ROSE, N. Am. Fl. 23(5): 279. 1930; — *Cassia polyadenia* Auct. non DeCANDOLLE: BOLDINGH, Fl. D.W. Ind. Isl. 1: 85. 1909; Fl. Ned. W. Ind. Eil. 211. 1913.

A low branched shrub, up to 60 cm high; branches angular, glabrous; twigs densely short-pubescent. Leaves with 2—4 (-7) pairs of leaflets; petiole canaliculate above, 3 mm long, provided with a stipitate gland near the top; rhachis 1—1.5 (-2) cm long, bearing a more or less cylindric or stout-stalked gland just below the insertion of the leaflets; leaflets sessile, obovate or oblong-obovate to obcordate, emarginate, retuse or rarely obtuse at the apex, obliquely cuneate at the base, 5—10 × 3—6 mm, coriaceous or subcoriaceous, dull or faintly shining, glabrous or sparingly pubescent on the midvein beneath, strongly veined, the midvein subcentral. Stipules ovate, acute, about 1 mm long. Flowers yellow, usually in the leaf-axils towards the top of the branchlets, solitary or sometimes two together on a very short peduncle and then one flower sessile and the other one pedicellate; pedicels slender, 1—2 cm long. Bracts lanceolate, about 1 mm long; bracteoles 2, lanceolate, 1 mm long, inserted at about or above the middle. Sepals subequal, membranaceous, lanceolate, acuminate, glabrous or with a few scattered hairs outside, 6 (-8) mm long and 2—3 mm wide. Petals subequal, obovate to broadly obovate or oblong, 10—13 mm long, the 1—2 mm long claw included; the lower one largest. Stamens 10: the 4 largest with 1 mm long thick filaments and 5—6 mm long linear anthers; the 6 smaller ones with 1 mm long thick filaments and about 3 mm long anthers; anthers opening by terminal pores. Ovary sessile, compressed, densely pubescent; style glabrous, curved. Pod linear, 2.5—3 cm long and 5 mm wide, dark-brown to black, opening along the sutures, pubescent. Seeds 6—8 transversely arranged in the pod, rectangular, 4 × 2 mm, black.

St. Bartholomew and St. Martin.

ST. MARTIN: Terres basses (Boldingh 3272, st. Sept.; 3274, fl. Sept.; 3288, fl. Sept.); Philipsburg (Arnoldo 1333, flb. March); Low Lands (Le Gallo 861, fl. & fr. July).

Cassia glandulosa L.

LINNAEUS, Spec. Plant. 542. 1753

var. *swartzii* (Wikstr.) Macbr.

MACBRIDE, Contr. Gray Herb. n.s. 59: 26. 1919; WILLIAMS, Fl. Trinidad & Tobago 1(4): 274. 1931; GOODING *et al.*, Fl. Barbados 179. 1965; — *Cassia swartzii* WIKSTRÖM, Vet. Acad. Handl. Stockholm 1825: 430. 1826; URBAN, Symb. Ant. 8: 270. 1920; — *Chamaecrista swartzii* (WIKSTR.) BRITTON, Bull. Torrey Bot. Club 44: 9. 1917; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 366. 1924; — *Cassia glandulosa* Auct. non Linnaeus; GRISEBACH, Fl. Br. W. Ind. Isl. 211. 1860 p.p.; BOLDINGH, Fl. D.W. Ind. Isl. 1: 84. 1909; Fl. Ned. W. Ind. Eil. 210. 1913.

Shrub or undershrub, up to 1.5 m tall; stems more or less pubescent. Leaves with 9—15 (—20) pairs of leaflets; petiole 4—5 mm long, pubescent, provided with one, or rarely two, distinctly stipitate, capitate gland; rhachis up to 7 cm long, puberulous, sometimes with one or with a few glands; leaflets linear or linear-oblong, sometimes somewhat broadened towards the apex, obtuse, slightly emarginate, and mucronate at the apex, obtuse and oblique at the base, 10—20 × 2—4 mm, the midvein subcentral, conspicuously below. Stipules linear-lanceolate, ribbed, striate-veined, 0.5—1 cm long. Flowers yellow, solitary or 2—5 together on a very short peduncle arising 5—10 mm above the leaf-axils; pedicels 1—2.5 cm long. Bracts triangular to linear-lanceolate, acuminate, ribbed, 3—4 mm long; bracteoles lanceolate or linear-lanceolate, 2—4 mm long. Sepals membranaceous, lanceolate, acute or acuminate at the apex, pubescent outside, (8-) 10—12 mm long. Petals unequal, broadly obovate, the inferior 2 cm wide and 1.8—2.1 cm long, included the 0.3 cm long claw, the other petals 1.5 × 1 cm. Stamens 10, all fertile: the 3 largest with 1 mm long, thick, fleshy filaments, and 8 mm long anthers; the 7 smaller stamens with 1.5 mm long, thick, fleshy filaments and 3—3.5 mm long anthers; the anthers opening by terminal pores. Ovary woolly pubescent. Pod linear-oblong or linear, 3—5.5 cm long and 4—5 mm broad, 7—12-seeded, puberulous, dehiscent on the sutures. Seeds square shaped, about 2.5 mm in diam., brown.

West Indies and Surinam.

Common along roadsides and in thickets.

Vernacular name: wild peas (Windward Group).

SABA: between The Bottom and Windwardside (Boldingh 1350, fr. July; Stoffers 4621, fl. March); between Windwardside and Hellsgate (Boldingh 1680, fr. July); Windwardside (Boldingh 2324, fl. & fr. July; Arnaldo 663, fl. & fr. Aug.); Mary's Point (Suringar s.n., fl. Ap. [L]); between The Bottom and St. John's, 300 m (Stoffers 3274, fl. May); Bottom Hill, 250—275 m (Stoffers 2918, fl. & fr. Ap.); along road from The Bottom to Crispine, 220—350 m (Stoffers 2956, fl. & fr. Ap.); slope of The Mountain near Windwardside, 400—475 m (Stoffers 3328, fl. May); between The Bottom and Saddle, 220—300 m (Stoffers 3098, fl. Ap.); from Crispine to Rendez-Vous (Suringar s.n., fl. Ap. [L]).

ST. EUSTATIUS: western slope of The Quill (Stoffers 4715, fl. Aug.; Suringar s.n., fl. & fr. Ap. [L]); top of The Quill (Stoffers 3926, fr. July); northern slope of The Quill (Stoffers 4001, st. July); slope of The Quill near Glass Bottle (Burgers 187, fl. Feb.); along the road from Oranjestad to Fort de Windt (Stoffers 3508,

fl. & fr. July); Cultuurvlakte (Suringar s.n., fl. & fr. Ap. [L]); near White Wall (Boldingh 1262, fr. July); without loc. (v. Groll-Meyer 81, fl. & fr.).

ST. MARTIN: Low Lands (Stoffers 2691, fl. Ap.); ibid., near Red Pond (Le Gallo 882, fr. July); Simson Bay (Arnoldo 3389, fl. Jan.); Airfield (Stoffers 2369, fl. March; 2393, fl. & fr. March); Marigot Hill to Marigot, 0—200 m (Boldingh 2651, fr. Aug.); Tintamarre (Le Gallo 1039, fl. & fr. Oct.; 1040, fl. & fr. Oct.).

Cassia chamaecrista L.

LINNAEUS, Spec. Plant. 379. 1753; ADAMS, Flowering plants of Jamaica 328. 1972; — *Cassia nictitans* Auct. non Linnaeus; GRISEBACH, Fl. Br. W. Ind. Isl. 211. 1860 p.p.; Duss, Fl. phan. Ant. franç. 236. 1897; BOLDINGH, Fl. Ned. W. Ind. Eil. 211. 1913; Fl. D.W. Ind. Isl. 2: 37. 1914; FAWCETT & RENDLE, Fl. Jamaica 4(2): 114. 1920; ARNOLDO, Zakflora 60. 1954; Zakflora 137. 1964; — *Chamaecrista chamaecrista* (L.) BRITTON, Bull. Torrey Bot. Club 44: 12. 1917; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Islands 5: 367. 1924; — *Cassia diffusa* DECANDOLLE, Mém. Soc. Hist. Nat. Gen. 2: 130. 1824; LEON & ALAIN, Fl. Cuba 2: 273. 1951.

Somewhat woody herb, diffusely branching or erect, up to 40 cm tall; stem puberulous in the upper part by curved hairs, glabrescent below. Leaves with (8-) 10—16 (-20) pairs of leaflets; petiole terete, 0.4—0.8 mm long, puberulous, provided with a flat and round or saucer-shaped, distinctly stalked gland below the lower pair of leaflets; leaflets linear-oblong, inequilateral, sessile, obtuse and mucronate at the apex, rounded or truncate at the base, 8—15 (-18) × (1-) 2—2.5 (-3) mm, conspicuously 2- or 3-veined from the base, pubescent, long-puberulous or glabrate and long-ciliate. Stipules lanceolate, long-acuminate, striate, ribbed, 7—10 mm long, ciliolate, exceeding the insertion of the petiole-gland. Flowers yellow, solitary or with 2 or 3 flowers together on a small, 0.5—1.5 cm above the leaf-axils inserted peduncle; pedicels up to 0.5 cm long. Bracts ovate-lanceolate, long-acuminate, 2—4 mm long, ribbed; bracteoles subulate, 1—2.5 mm long. Sepals subequal, lanceolate, 4—5 mm long, long-puberulous on the midvein. Petals obovate to broadly obovate, unequal, 4—5 mm long, the inferior one 5—7 mm long and larger than the sepals. Stamens 10: the 4 largest with 0.5 mm long, slender filaments and 3—5 mm long, linear anthers; the 6 smaller ones with 1 mm long, slender filaments and 1.5 mm long anthers; anthers opening by terminal pores. Ovary densely pilose. Pod oblong-linear, 3—5 cm long and 4—6 mm wide, dark-brown, pubescent, slightly curved, opening along the sutures, the valves twisting, pubescent. Seeds 15—20, transverse, about rectangular, 2—3 × 1—2 mm, black.

West Indies.

Common along roadsides and on waste places.

ARUBA: Savaneta (Stoffers 1754, fl. & fr. Jan.); Sivi-sivi (Boldingh 6328A, fl. & fr. Jan.; 6326, fl. & fr. Jan.); calcareous soil near Piedra Cruz (Boldingh 6539, fr. Jan.); Matoguerai (Stoffers 1434, fl. & fr. Jan.); along roads near Noord (Stoffers 1583, fl. & fr. Jan.); along road from Noord to Westpunt (Stoffers 1779, fl. & fr. Jan.); Oranjestad (Stoffers 2135, fl. & fr. Feb.); hofje near Hooiberg (Arnoldo

130, fl. & fr. Dec.); Santa Cruz (Suringar s.n., fr. Feb. [L]); without loc. (Suringar s.n., fr. [L]).

BONAIRE: Rincón (Boldingh 7162, fl. & fr. Feb.; 7157, fl. & fr. Feb.; 7029, fr. Feb.); west of Jatoe Bacoe (Stoffers 622, fl. & fr. Nov.); Airfield (Stoffers 783, fl. Nov.); Dos Pos (Stoffers 567, fr. Nov.); Sabana (Arnoldo 389, fl. & fr. Jan.); calcareous plateau near Fontein (Boldingh 7334, st. Feb.).

CURAÇAO: Groot St. Joris (Went 1338, fl. & fr. Dec.); hofje of Barber (Boldingh 5228, fr. Nov.; 5233, fr. Nov.); Zuikertuintje (Arnoldo 1845, fl. Jan.); Santa Cruz (Britton & Shafer 2988, fl. & fr. March); calcareous hills near Malpais (Boldingh s.n., fl. & fr. Oct.); hofje of Siberie (Boldingh 5054M, fl. Dec.); Caracas Baai (Boldingh 4803, fl. & fr. Jan.); Noordkant Plantation (Stoffers 161, fl. & fr. Oct.); Julianadorp (Stoffers 308, fr. Oct.); Knip Hills (Stoffers 1144, fl. Dec.); Parera (Stoffers 449, fl. & fr. Oct.); near Willemstad (Britton & Shafer 2919, fr. March); Savonet (Suringar s.n., st. Jan. [L]); Roode Weg (Suringar s.n., fr. Feb. [L]).

Cassia absus L.

LINNAEUS, Spec. Plant. 376. 1753; COLLADON, Hist. Cass. 117. 1816; GRISBACH, Fl. Br. W. Ind. Isl. 210. 1860; BOLDINGH, Fl. Ned. W. Ind. Eil. 210. 1913; Fl. D.W. Ind. Isl. 2: 36. 1914; FAWCETT & RENDLE, Fl. Jamaica 4(2): 110. 1920; ARNOLDO, Zakflora 105. 1954; Zakflora 136. 1964; ADAMS, Flowering plants of Jamaica 325. 1972; — *Senna absus* ROXBURGH, Fl. Ind. ed. Carey 2: 340. 1832; — *Grimaldia absus* (L.) BRITTON & ROSE, N. Am. Fl. 23(5): 299. 1930.

A much branched, erect, annual herb, up to 60 cm tall; stems and petioles viscid-glandular. Leaves bi-jugate; leaflets elliptic, obtuse and usually mucronate or slightly emarginate at the apex, obliquely rounded at the base, 2—3 × 1.5 cm, glabrous above, puberulous and at length glabrescent beneath; petiolules about 1 mm long; petiole slender, 1—4 cm long. Stipules lanceolate, 3 mm long. Inflorescence consisting of few-flowered, terminal racemes, or flowers solitary in the axils of the upper leaves. Bracts orbicular, acute at the apex, about 1.5 mm long; bracteoles ovate, about 0.5 mm long, adnate near the middle of the pedicel, caducous; pedicel 4 mm long. Sepals 5, slightly unequal, elliptic-oblong, acute at the apex, 4 × 1.5—2 mm, somewhat hirsute. Petals yellow changing to red, subequal, obovate, clawed, 6—7 × 2.5—3.5 mm, the claws 1.5 mm long. Stamens 5, with thick, 2 mm long filaments and linear, 2 mm long anthers, opening by 2 terminal pores. Ovary densely hispid. Pod linear-oblong, sparsely covered with bristly hairs, up to 7 × 0.7 cm, flat, elastically bivalved. Seeds 5—7, transverse, obovate, black, 3.5—4 mm long.

Tropics of the Old World, Mexico, Venezuela, Bolivia and Paraguay, Jamaica, Grenada, Aruba, Bonaire, and Curaçao.

Weed, especially in denuded localities, preferring calcareous soils.

ARUBA: foot of Hooiberg (Arnoldo 126, fl. Dec.).

BONAIRE: calcareous plateau of Bolivia Plantation (Boldingh 7363, fl. & fr. Feb.).

CURAÇAO: Seroe Christoffel (Stoffers 1207, fl. & fr. Dec.; 1294, fl. & fr. Dec.); ibid., 150 m (Arnoldo 1830, fl. & fr. Jan.); Hofje of Barber (Boldsingh 5207, fl. & fr.); Ronde Klip (Boldsingh 5465, fl. Nov.).

Parkinsonia Linnaeus, Spec. Plant. 375. 1753

Trees or shrubs. Leaves bipinnate, apparently once-pinnate and clustered; rhachis short, prolonged into a spine; pinnae in 1 or 2 pairs, elongate, flattened and with wing-like margins; leaflets numerous, small; petiole short or wanting. Stipules spiny, short, straight or recurved. Inflorescence consisting of axillary racemes. Bracts caducous; bracteoles wanting. Receptacle short. Sepals nearly equal, imbricate or subvalvate. Petals unequal, spreading. Stamens 10, distinct; filaments thickened and pilose at the base; anthers versatile, ovate, with longitudinal dehiscence. Ovary short-stipitate, many-ovulate; style filiform; stigma small, terminal. Pod cylindric, constricted between the seeds, attenuate at both ends, bi-valved. Seeds oblong, placed longitudinally. Endosperm present.

Eight species; one species in tropical Africa, the others in tropical America.

Parkinsonia aculeata L.

LINNAEUS, Spec. Plant. 375. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 204. 1860; DUSS, Fl. phan. Ant. franç. 227. 1897; URBAN, Symb. Ant. 4: 277. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 85. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 221. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 212. 1913; Fl. D.W. Ind. Isl. 2: 38. 1914; BRITTON & MILSPAUGH, Bahama Fl. 170. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 98. 1920; URBAN, Symb. Ant. 8: 273. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 375. 1924; QUESTEL, Fl. Isl. St. Bartholomew 116. 1941; LEON & ALAIN, Fl. Cuba 2: 274, fig. 113. 1951; ARNOLDO, Zafkflora 19. 1954; Gekw. en nutt. pl. Ned. Ant. 101. 1954; Zafkflora 143. 1964; GOODING *et al.*, Fl. Barbados 182. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 160. 1971; ADAMS, Flowering plants of Jamaica 319. 1972.

Shrub or small, strongly branched tree. Leaves sessile; main rhachis very short, prolonged into an up to 3 cm long spine; pinnae in 1—2 pairs, 15—30 cm long, their rhachis flat, narrowly winged; leaflets numerous, linear to oblanceolate or obovate, rounded at the apex, 2—6 × 1—3 mm, often deciduous or abortive; petiolules very short. Stipules small. Racemes glabrous; bracts small; pedicels slender, up to 2 cm long. Receptacle saucer-shaped, about 4 mm in diam. Sepals oblong, 6—8 mm long. Petals orbicular, unguiculate, 12 mm long, pilose at the claw; the superior one with a longer claw and with red spots near the base. Stamens 10; filaments 8 mm long; anthers 2 mm long. Ovary tomentose. Pod drooping, linear-cylindric, dark orange-brown, 5—15 cm long and 8 mm in diam. Seeds 1—8, oblong, about 1 cm long.

Originally from tropical America; cultivated and naturalized nowadays in tropical and subtropical regions.

Vernacular names: boonchi's strena (Leeward Group).
wonder tree, Jeruzalem thorn (Windward Group).

ARUBA: along roads near Oranjestad (Stoffers 2051, fl. Feb.); Oranjestad (Arnoldo 280, st. Dec.); Seroe Blanco (Stoffers 1749, flb. Jan.); Kristalberg (Suringar s.n., fl. Feb. [L]).

BONAIRE: Kralendijk (Arnoldo 487, fl. & fr. Ap.).

CURAÇAO: Hermanus (Suringar s.n. fl. & fr. March [L]); Savonet (Suringar s.n., fr. Jan. [L]); without loc. (Boldsingh 1353, fl.).

ST. EUSTATIUS: Oranjestad (Boldsingh 915, fl. & fr. June; Suringar s.n., fl. & fr. Ap. [L]); Cultuurvlakte (Suringar s.n., fl. & fr. May [L]); without loc. (v. Groll-Meyer 73, fl. & fr.).

ST. MARTIN: near Philipsburg (Boldsingh 2340, fl. & fr. Aug.).

Haematoxylon Linnaeus, Spec. Plant. 384. 1753

Glabrous trees or shrubs. Leaves pinnate or partly bipinnate. Stipules small and deciduous or spiny and persistent. Inflorescence consisting of axillary racemes. Bracts minute, deciduous; bracteoles wanting. Receptacle short. Sepals 5, subequal, imbricate, the lower one often subcucullate. Petals 5, imbricate, more or less unequal. Stamens 10, free; filaments filiform, pilose at the base; anthers ovate, with longitudinal dehiscence. Ovary short-stipitate or sessile, few-ovulate; style filiform; stigma terminal, small. Pod flat, oblong or lanceolate, splitting through the middle of the valves. Seeds oblong, transverse. Endosperm wanting.

Two species, in the West Indies and tropical continental America from Mexico to Venezuela.

Key to the species:

Racemes few-flowered, 3—4 cm long; pedicels 1.5—2 cm long *H. brasiletto*

Racemes dense- and many-flowered, 2—10 cm long; pedicels 4—6 mm long
H. campechianum

Haematoxylon brasiletto Karst.

KARSTEN, Fl. Columb. 2: 27, pl. 114. 1862; BOLDINGH, Fl. Ned. W. Ind. Eil. 212. 1913; Fl. D.W. Ind. Isl. 2: 38. 1914; URBAN, Symb. Ant. 8: 273. 1920; ARNOLDO, Zakflora 19, 47. 1954; GEKW. en nutt. pl. Ned. Ant. 70. 1954; Zakflora 142. 1964; GEKW. en nutt. pl. Ned. Ant. 159. 1971; — *Haematoxylon boreale* WATSON, Proc. Am. Acad. 21: 426. 1886.

Small tree or shrub, usually 4—5 m high; trunk crooked and deeply fluted, or branching from near the base; bark brown or greyish; branches lenticellate, usually armed with up to 2 cm long spines. Leaves often deciduous when flowering, arising from short-shoots, 2- to 4-jugate, short-petiolate; leaflets broadly obovate or obcordate, 1—3.5 × 1—3.5 cm, deeply retuse or emarginate at the apex, cuneate at the base, veins conspicuous, numerous, and parallel; petiole 0.5—1 cm long. Racemes few-flowered, 3—4 cm long; peduncle short;

pedicels slender, 1.5—2 cm long, glabrous or nearly so. Receptacle saucer-shaped, 5 mm in diam. Sepals ciliate, subequal, 7—8 × 3 mm, the lower one subcucullate. Petals broadly obovate, 8—9 × 6—7 mm, densely ciliate near the base, yellow with dark red- or carmine-coloured veins. Stamens 10; filaments rather stout, thickened and pilose near the base, 8—9 mm long; anthers versatile, 1.5 mm long. Ovary sessile, slightly pilose. Pod flat, lanceolate-oblong, 2—6 cm long and 6—15 mm broad, acute or obtuse at the apex.

Western Mexico, San Salvador to Costa Rica, Colombia and Venezuela, Aruba, Bonaire, and Curaçao.

In Thorny woodlands and Croton-Lantana-Cordia thickets, especially on limestone; formerly also planted.

Vernacular names: brazia, campeshi, stokvishout (Leeward Group).

ARUBA: calcareous soil near Savaneta (Boldingh 6496, fl. Jan.); Arikok (Beaujon s.n., st.).

BONAIRE: seashore near Lagoen (Boldingh 7468, fl. Feb.); Montagne (Stoffers 891, fl. Dec.); Columbia Plantation (Stoffers 732, fl. Nov.); limestone plateau east of Pos Calbas (Stoffers 759, fl. Nov.); limestone coast of Santa Barbara (Stoffers 796, fl. Nov.); Seroe Crita Kabai (Stoffers 853, fl. Dec.); along road from Kralendijk to Rincón (Stoffers 838, fl. Dec.); Hobau (Stoffers 1018, fl. Dec.); calcareous soil near Playa Grandi (Boldingh 7172, st. Feb.); slope of Joewa Hills (Boldingh 7202, fl. Feb.).

CURAÇAO: road near Blein (Boldingh 4748, fl. Oct.); limestone-plateau near Willemstad (Britton & Shafer 3054, fl. & fr. March); Veeris Berg (Boldingh 4727, fl. Oct.); calcareous hills near Hato (Boldingh 5131d, st. Nov.); limestone hills east of Willemstad (Stoffers 385, fl. Oct.); Rif Hill (Boldingh 4653, st. Oct.); Santa Barbara (Stoffers 408, fl. Oct.); St. Marie (Went 1321, fl. Dec.); hills near Klein Santa Marta (Boldingh 5625, fl. Dec.).

Haematoxylon campechianum L.

LINNAEUS, Spec. Plant. 384. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 204. 1860; Duss, Fl. phan. Ant. franç. 226. 1897; URBAN, Symb. Ant. 4: 277. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 85. 1909; FAWCETT & RENDLE, Fl. Jamaica 4(2): 97. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 171. 1920; URBAN, Symb. Ant. 8: 273. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 376. 1924; WILLIAMS, Fl. Trinidad & Tobago 1(4): 264. 1931; QUESTEL, Fl. Isl. St. Bartholomew 116. 1941; LEON & ALAIN, Fl. Cuba 2: 275. 1951; GOODING *et al.*, Fl. Barbados 181. 1965; ADAMS, Flowering plants of Jamaica 320. 1972.

Tree, up to 8 m tall; trunk crooked and deeply fluted; bark greyish; branches lenticellate, slender, usually armed with slender spines up to 1.5 cm long. Leaves often arising from short-shoots, 2- to 4-jugate, the lower pair of pinnae sometimes again pinnate; leaflets obovate or obcordate, 1—3 × 1—2.5 cm, rounded, retuse, or emarginate at the apex, cuneate at the base, veins numerous and parallel. Racemes dense and many-flowered, 2—10 cm long and up to 2 cm

in diam.; peduncle 1 cm long or less; pedicels slender, 4—6 mm long. Receptacle 1.5 mm in diam., 1 mm long. Sepals oblong, unequal, ciliate, 4—5 × 2 mm, the lower one cucullate. Petals yellow, spatulate, 7 × 3 mm. Stamens 10; filaments filiform, slightly thickened and pilose near the base; anthers versatile, nearly 1 mm long. Ovary short-stipitate, glabrous. Pod oblong, membranaceous, 2—5 × 1 cm. Seeds 2—3.

West Indies, Central America, and northwestern South America.

Probably a relic of former cultivation.

Vernacular name: logwood (Windward Group).

St. EUSTATIUS: along road near Oranjestad (Boldingh 1254, st. July); without loc. (v. Groll-Meyer 291H, fl.).

Delonix Rafinesque, Fl. Tellur. 2: 92. 1836

Unarmed tree. Leaves deciduous, bipinnate; leaflets many. Stipules caducous. Inflorescence consisting of terminal and axillary racemes. Bracts narrow, deciduous; bracteoles wanting. Flowers large, showy, orange to scarlet. Receptacle short. Sepals 5, nearly equal, valvate. Petals 5, unguiculate, unequal, imbricate. Stamens 10, declined; filaments free, filiform; anthers versatile, with longitudinal dehiscence. Ovary sessile, free; style slender; stigma terminal, small, truncate ciliolate. Ovules many to numerous. Pod bivalved, flat, woody, with soft woody tissue between the seeds. Seeds transverse, oblong. Endosperm present.

One species, native of Madagascar; cultivated and subs spontaneous in the tropics and subtropics.

Delonix regia (Bojer) Raf.

RAFINESQUE, Fl. Tellur. 2: 92. 1836; URBAN, Symb. Ant. 8: 274. 1920; BRITTON & MILLSPAUGH, Bahama Fl. 175. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 375. 1924; LEON & ALAIN, Fl. Cuba 2: 275, fig. 114. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 158, fig. 84. 1971; ADAMS, Flowering plants of Jamaica 319. 1972; — *Poinciana regia* BOJER, Bot. Mag. t. 2884, 1829; DUSS, Fl. phan. Ant. frang. 230. 1897; URBAN, Symb. Ant. 4: 278. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 85. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 222. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 213. 1913; Fl. D.W. Ind. Isl. 2: 38. 1914; FAWCETT & RENDLE, Fl. Jamaica 4(2): 97. 1920; QUESTEL, Fl. Isl. St. Bartholomew 116. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 57, fig. 84. 1954.

A widely branched tree, up to 13 m tall; twigs puberulous. Leaves large, up to 50 cm long; petiole stout, up to 12 cm long; rhachis tomentulose or puberulent; pinnae 10—22 pairs, 5—10 cm long; leaflets 12—35 pairs per pinna, oblong, rounded or obtuse at the apex, inequilaterally rounded at the base, 5—15 × 2—6 mm, puberulent on both sides. Stipules pinnatifid, caducous. Racemes terminal or in the axils of the upper leaves; pedicels up to 10 cm long; bracts

ovate-lanceolate, about 6 mm long. Receptacle saucer-shaped, about 1.5 mm long. Sepals oblong, 2.5—3 cm long, 5—8 mm broad, reflexed in age. Petals large, spreading and reflexed, 5—7 cm long, lamina suborbicular, 2—3.5 cm long, pubescent at the claw. Stamens 10; filaments 3.5—4 cm long, pubescent at the base; anthers oblong, 4 mm long. Ovary pubescent. Pod broadly linear, up to 60 cm long and 7 cm broad, scarcely curved, dark brown.

Distribution as the genus.

Cultivated and naturalized. Out of leaf when flowering.

Vernacular names: flamboyant (Leeward Group).
July-tree (Windward Group).

SABA: The Bottom (Arnoldo 723, fl. Aug.; Boldingh 2273, fl. July).

ST. EUSTATIUS: seashore near Oranjestad (Boldingh 45, fl. May); without loc. (v. Groll-Meyer 34, fl.).

ST. MARTIN: near Bethlehem (Boldingh 2669, fl. & fr. Aug.).

Caesalpinia Linnaeus, Spec. Plant. 380. 1753

Unarmed or prickly shrubs or trees, sometimes climbing. Leaves bipinnate. Stipules simple or pinnate, rarely wanting. Inflorescence consisting of axillary or terminal, simple or paniculate racemes. Bracts normally small and caducous; bracteoles wanting. Receptacle short. Sepals 5, imbricate, the inferior one cucullate and enclosing the bud. Petals 5, imbricate, more or less equal, often spatulate or obovate. Stamens 10; filaments usually pubescent; anthers versatile, with longitudinal dehiscence. Ovary sessile, short-stipitate; style filiform; stigma terminal, small. Ovules few. Pod of various forms, bivalved or indehiscent, not winged. Seeds transverse, compressed or subglobose. Endosperm wanting.

About 150 species in the tropics of both hemispheres.

Key to the species:

1. Plants armed with recurved prickles 2
- Plants without prickles 3
2. Leaves up to 20 cm long; leaflets shining at both sides, 1.5—2.5 cm long; stipules very small or wanting *C. ciliata*
Leaves up to 60 cm long; leaflets not shining, 2—6 cm long; stipules large, 1—3-foliate *C. bonduc*
3. Leaves 3—7 mm long and 1—2 mm wide; flowers white, petals 4 mm long
C. coriaria
Leaves 1—2 cm long and 4—8 mm wide; flowers red, yellow, orange or red-yellow; petals 2—2.5 cm long *C. pulcherrima*

Caesalpinia coriaria (Jacq.) Willd.

WILLDENOW, Spec. Plant. 2: 532. 1799; BOLDINGH, Fl. D.W. Ind. Isl. 1: 86. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 215. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 214. 1913; Fl. D.W. Ind. Isl. 2: 38. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 174. 1920; WILLIAMS, Fl. Trinidad & Tobago 1(4): 263. 1931; LEON & ALAIN, Fl. Cuba 2: 280. 1951; ARNOLDO, Zakflora 28. 1954; Gekw. en nutt. pl. Ned. Ant. 34, fig. 80. 1954; Zakflora 136. 1964; Gekw. en nutt. pl. Ned. Ant. 154. 1971; ADAMS, Flowering plants of Jamaica 320. 1972. — *Poinciana coriaria* JACQUIN, Select. Stirp. Am. 123, t. 175, fig. 36. 1763; — *Libidibia coriaria* SCHLECHTENDAL, Linnaea 5: 193. 1830; GRISEBACH, Fl. Br. W. Ind. Isl. 206. 1860; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 378. 1924.

Small, crooked, unarmed, and much-branched tree, up to about 5 m high; branchlets glabrous. Leaves bipinnate, 6—14 cm long; petiole rather stout, 1—2 cm long, eglandular, more or less terete, thickened at the base; pinnae in 4—7 pairs and an odd terminal one, opposite or subopposite, 3—5 cm long; leaflets about 15—30 pairs per pinna, linear-oblong, rounded and often mucronate at the apex, inequilaterally subcordate at the base, 3—7 × 1—2 mm, glabrous. Stipules caducous. Inflorescence consisting of terminal and axillary panicles, much shorter than the leaves. Flowers fragrant, white; bracts caducous; pedicels scarcely 3 mm long. Receptacle campanulate, 2—2.5 mm long, glabrous. Sepals 5, oblong, 4 × 1.5 mm, slightly cucullate, imbricate, slightly fimbriate towards the apex. Petals 5; 4 broadly spatulate, about 4 × 2.5 mm, the superior one strongly recurved and tomentose at the claw. Stamens 10; filaments 5—6 mm long, expanded, hirsute in the lower two-thirds; anthers oblong, 1 mm long, with longitudinal dehiscence. Ovary short-stipitate; style glabrous; stigma truncate. Pod oblong, curled, flat, dark-brown, up to 9 × 3 cm, indehiscent. Seeds 6—8, oblong, 6—7 mm long.

West Indies, Mexico to Panama, Venezuela, and Columbia; introduced into India.

Vernacular names: watapana, dividivi (Leeward Group).
dividevi (Windward Group).

ARUBA: Jamanota (Arnoldo 299, st. Dec.; Suringar s.n., fl. Feb. [L]); Balashi (Stoffers 2013, fl. & fr. Feb.); in field of aloes near Spaans Lagoen (Stoffers 1460, fl. Jan.); hills near Fontein (Boldingh 6444, fl. & fr. Jan.); Santa Cruz (Suringar s.n., fl. & fr. Feb. [L]); without loc. (Koolwijk sub Suringar s.n., fr. [L]).

BONAIRE: Fontein (Suringar s.n., st. Feb. [L]); Karpata, near Goto (Stoffers 1084, st. Dec.); Hobau (Stoffers 1032, st. Dec.); Washington Plantation (Stoffers 867, fr. Dec.); Slagbaai near Goto (Stoffers 756, fl. Nov.); Seroe Caracao (Stoffers 1055, fr. Dec.); Karpata (Arnoldo 8, fl. Nov.); Coeroeboeroe (Stoffers 457, fl. Oct.); seashore near Lagoen (Boldingh 7461, fl. Feb.).

CURAÇAO: Santa Barbara, at the foot of the Tafelberg (Stoffers 388, fl. Oct.); Parera (Stoffers 36, fl. Sept.); Noordkant Plantation (Stoffers 152, fl. Oct.); Rif Hill (Boldingh 4651, st. Oct.); Fort Nassau (Suringar s.n., fr. Jan. [L]); Ronde Klip (Arnoldo 1139, fl. Nov.); Siberie (Went 1329, fl. & fr. Dec.); St. Jan

(Suringar s.n., fl. Jan. [L]); hills near Savonet (Boldingh 4967, fl. & fr. Nov.); coastal limestone near Santa Cruz (Britton & Shafer 3025, fl. & fr. March); Veeris (Suringar s.n., fr. Jan. [L]); along the road to Westpunt (Stoffers 67, fl. Sept.); Brakkeput Mei Mei (Stoffers 195, fl. Oct.); east of Santa Marta Baaï (de Wilde 121A, fl. Ap. [L]); without loc. (Boldingh s.n., st.; Aschenberg, s.n., fl.).

SABA: Windwardside (Boldingh 2331, st.).

ST. EUSTATIUS: without loc. (v. Groll-Meyer 245, fl.).

ST. MARTIN: along the road from Cole Bay Hill to Simson Bay (Boldingh 3016, fl. Aug.; 3017, fl. Aug.).

Caesalpinia bonduc (L.) Roxb.

ROXBURGH, Fl. Ind. 2: 362. 1832, emend. Dandy & Exell, Journ. Bot. 76: 175. 1938; WILLIAMS, Fl. Trinidad and Tobago 1: 520. 1931; GOODING *et al.*, Fl. Barbados 175. 1965; ADAMS, Flowering plants of Jamaica 320. 1972; — *Guilandina bonduc* LINNAEUS, Spec. Plant. 381. 1753; — *Caesalpinia crista* LINNAEUS, Spec. Plant. 380. 1753 p.p.; URBAN, Symb. Ant. 4: 278. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 86. 1909; Fl. Ned. W. Ind. Eil. 214. 1913; URBAN, Symb. Ant. 8: 274. 1920; LEON & ALAIN, Fl. Cuba 2: 279, fig. 116. 1951; — *Guilandina crista* (L.) SMALL, Fl. S.E. Unit. States 591. 1903; BRITTON & MILLSCHAUGH, Bahama Fl. 172. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 378. 1924; — *Guilandina bonducella* LINNAEUS, Spec. Plant. ed. 2. 545. 1762; GRISEBACH, Fl. Br. W. Ind. Isl. 204. 1860; — *Caesalpinia bonducella* FLEMING, As. Res. 11: 159. 1810; FAWCETT & RENDLE, Fl. Jamaica 4(2): 93, fig. 32. 1920; WILLIAMS, Fl. Trinidad & Tobago 1(4): 263. 1931; QUESTEL, Fl. Isl. St. Bartholomew 117. 1941.

A trailing or climbing shrub; stems puberulous and armed with bristles and recurved prickles. Leaves large, bipinnate, up to 60 cm long; petiole 5—10 cm long, eglandular, pubescent and armed like the stems; rhachis with recurved prickles and pubescent, eglandular; pinnae in 4—7 pairs, up to 20 cm long, with recurved prickles; leaflets in 5—8 pairs with 2 recurved prickles at the insertion of each pair, ovate, ovate-elliptic, or elliptic, obtuse or acuminate and mucronate at the apex, rounded at the base, 2—6 × 1.5—2.5 cm, membranaceous, glabrous above, puberulous beneath, especially on the midrib and the margins. Stipules foliaceous, 1—3-foliate, large, subpersistent. Racemes axillary or subaxillary, elongate, dense-flowered, tomentose; peduncle long. Bracts linear-lanceolate, about 1 cm long, deciduous, recurved or spreading. Pedicels about 0.5 cm long, rusty-tomentose. Receptacle campanulate, about 2 mm long, rusty-tomentose outside. Sepals imbricate, elliptic to oblong, 5—7 mm long, rusty-tomentose outside; the superior one somewhat larger and subcucullate. Petals yellow, oblong, 10—12 mm long; the superior one shorter and broader. Stamens 10; filaments dilated and hirsute towards the base, 7—8 mm long; anthers 1.5 mm long, linear. Ovary short-stipitate, ovate-oblong, bristly, often abortive; style short, stigma small. Pod ovate to oblong, 5—10 × 3—6 cm, compressed, bristly, dehiscent, orange-brown. Seeds usually 2, subglobose, about 2 cm long, grey.

Tropical and subtropical regions, probably native of eastern Asia.

Shrub, common on sandy beaches in the tropics and subtropics; in Saba to be found occasionally at higher elevations.

SABA: lower part of the Bottom Mountain, 250 m (Boldingh 1409, fr. July); road to Windwardside (Arnoldo 919, fl. Aug.); The Bottom (Suringar s.n., st. Ap. [L]).

ST. EUSTATIUS: along roads in Oranjestad (Boldingh 1090, fl. June); slope of The Quill (Suringar s.n., fr. Ap. [L]); without loc. (Boldingh 15, st.; s.n., fr.; v. Groll-Meyer 160, fl.).

ST. MARTIN: Kanaal Rolandus (Stoffers 2271, fr. March); Low Lands near Mullet Pond (Boldingh 2788, flb. Aug.).

Caesalpinia ciliata (Berg.) Urb.

URBAN, Symb. Ant. 2: 275. 1900; BOLDINGH, Fl. D.W. Ind. Isl. 1: 86. 1909; Fl. Ned. W. Ind. Eil. 213. 1913; Fl. D.W. Ind. Isl. 2: 38. 1914; ARNOLDO, Zakflora 48. 1954; Zakflora 136. 1964; — *Guilandina ciliata* BERGUS ex Wikström, Vetensk. Acad. Handl. Stockh. 2: 431. 1825; SPRENGEL, Syst. 4(2): 165. 1827; — *Guilandina bonduc* Auct. non Linnaeus; GRISEBACH, Kar. 60. 1857; — *Caesalpinia grisebachiana* KUNTZE, Rev. 1: 166. 1891; — *Guilandina grisebachiana* KRUG & URBAN ex Duss, Fl. phan. Ant. franç. 229. 1897.

Shrub; stems sparingly armed with recurved prickles. Leaves bipinnate, up to 20 cm long; petiole puberulous, up to 5 cm long, provided occasionally with one or a few recurved prickles; rhachis puberulous and provided with 2 recurved prickles at the insertion of the pinnae; pinnae 5—6 pairs, about 10 cm long, with 2 recurved prickles at the insertion of the leaflets; leaflets in 5 or more pairs per pinna, inequilateral, ovate or suborbicular, rounded or emarginate and mucronate at the apex, rounded or subtruncate at the base, 1.5—2.5 × 1—2 cm, shining at both sides, glabrous or nearly so. Stipules very small or wanting. Racemes axillary, simple, several-flowered; bracts subulate, 1—3 mm long. Pedicels about 0.5 cm long, rusty-tomentose. Receptacle campanulate, 2 mm long, rusty-tomentose. Sepals oblong, 7—8 × 2—3 mm, rounded or acute at the apex, rusty-tomentose. Petals subequal, yellow, spatulate, 7 × 3 mm, the superior one slightly broader. Stamens 10; filaments dilated towards the base, densely villous in the lower half, 5—6 mm long; anthers 1.5 mm long. Ovary sometimes abortive. Pod ovate, flat, 5—8 × 3—6 cm, brown to blackish, sparingly beset with prickles, beak 1—1.5 cm long. Seeds 1—2, subglobose, 1.5 — 2 cm long, yellow.

Lesser Antilles.

Vernacular name: djuku (Leeward Group).

CURAÇAO: along road near San Pedro (Arnoldo 1194, fl. & fr. Oct.); hills near Savonet (Boldingh 4966, fl. Nov.); road from Westpunt to Savonet (Boldingh 5062, flb. Nov.); coastal sands near Santa Cruz (Britton & Shafer 3020, fl. March); without loc. (Aschenberg s.n., fl.).

ST. MARTIN: Low Lands near Mullet Pond (Boldingh 2766, fl. & fr. Aug.); Cole Bay (George s.n. sub. Boldingh 2501, flb. Aug.); without loc. (Boldingh 3033a, fl.).

Caesalpinia pulcherrima (L.) Sw.

SWARTZ, Obs. Bot. 166. 1791; GRISEBACH, Fl. Br. W. Ind. Isl. 205. 1860; DUSS, Fl. phan. Ant. franç. 230. 1897; URBAN, Symb. Ant. 4: 279. 1905; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 215. 1909; BOLDINGH, Fl. D.W. Ind. Isl. 2: 39. 1914; URBAN, Symb. Ant. 8: 276. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 95. 1920; QUESTEL, Fl. Isl. St. Bartholomew 117. 1941; LEON & ALAIN, Fl. Cuba 2: 278, fig. 115. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 34, fig. 77. 1954; Gekw. en nutt. pl. Ned. Ant. 154, fig. 77. 1971; ADAMS, Flowering plants of Jamaica 321. 1972; — *Poinciana pulcherrima* LINNAEUS, Spec. Plant. 380. 1753; BOLDINGH, Fl. D.W. Ind. Isl. 1: 86. 1909; Fl. Ned. W. Ind. Eil. 214. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 174. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 376. 1924; GOODING *et al.*, Fl. Barbados 177. 1965.

Shrub, up to 4 m high; branchlets glabrous, unarmed or with a few prickles. Leaves bipinnate, up to 30 cm long; petiole eglandular, terete, glabrous, 2—8 cm long; pinnae 3—9 pairs, opposite, about 4 cm long, usually with a few prickles at the insertion of the leaflets; rhachis usually with a few prickles at the insertion of the pinnae; leaflets 5—12 pairs, opposite or subopposite, obliquely oblong, rounded and mucronate at the apex, rounded or obtuse at the base, 1—2 cm long and 4—8 mm wide, glabrous. Stipules pinnate, caducous. Inflorescence consisting of terminal racemes (or in the axils of the upper leaves); racemes lax, pyramidal, up to 40 cm long; pedicels slender, the lower ones up to 10 cm long, glabrous; bracts linear-lanceolate, small, caducous. Receptacle broadly campanulate, 3 mm long. Sepals unequal, imbricate, ovate-oblong, the inferior one larger, about 15 mm long, cucullate, the others about 8—10 mm long. Petals red-yellow, yellow, orange or red, free, broadly spatulate, about 2—2.5 cm long, the superior one with a longer claw and narrower lamina. Stamens 10, strongly exserted; filaments about 6 cm long, pubescent, red; anthers ovate, 1.5—2 mm long, with longitudinal dehiscence. Ovary short-stipitate, glabrous. Pod bivalved, septate, nearly straight, flat, linear-oblong, acuminate at both ends, 8—10 × 1.5—2 cm, usually somewhat broader at the apex, mucronate at the apex, black-brown. Seeds 6—8, ovate, compressed, 9 mm long, brown, transverse. Endosperm wanting.

Widely cultivated and escaped from cultivation in the tropics; its origin uncertain, possibly from northern Central America.

Vernacular names: tuturutu (Leeward Group).
pride of Barbados (Windward Group).

ARUBA: Oranjestad, cult. (Arnoldo 205, fl. & fr. Dec.); Noord (Suringar s.n., fl. & fr. Feb. [L]).

BONAIRE: in garden in Rincón, cult. (Stoffers 1007, fl. Dec.; 1010, fl. Dec.; 1012, fl. Dec.).

CURAÇAO: Parera (Stoffers 440, fl. Oct.); Julianadorp (Stoffers 1313, fl. Jan.); Veeris (Suringar s.n., fl. & fr. Jan. [L]).

SABA: St. Giles (Boldingh 1871, fl. July); road to Mary's Point (Arnoldo 849, fl. & fr. Aug.).

ST. EUSTATIUS: in garden in Oranjestad, cult. (Boldingh 1088, fl. & fr. June); without loc. (v. Croll-Meyer 74, fl.; 75, fl.).

ST. MARTIN: from Philipsburg to Belvedere (Boldingh 2598, fl. & fr. Aug.); in garden in Philipsburg (Stoffers 2468, fl. March; 2470, fl. March).

Peltophorum (T. Vogel) Bentham, Jour. Bot. Hooker 2: 75. 1840

Trees. Leaves pinnate; leaflets many; petiole and rhachis eglandular. Stipules small, caducous. Inflorescence consisting of simple or paniculate, terminal or axillary racemes. Bracts small, deciduous; bracteoles wanting. Receptacle small, saucer-shaped. Sepals 5, subequal or the inferior one larger than the others, imbricate. Petals 5, spreading, subequal, imbricate. Stamens 10; filaments free; anthers versatile, with longitudinal dehiscence. Ovary free, sessile or short-stipitate, few- to many-ovulate; style elongate; stigma peltate. Pod indehiscent, flat, reticulate-veined in the middle, thickened to the margin. Seeds transverse, few, flat. Endosperm wanting.

Seven species, in tropical regions.

Peltophorum acutifolium (Johnst.) Johnst.

JOHNSTON, Proc. Bost. Soc. Nat Hist. 34(7): 221. 1909; — *Caesalpinia acutifolium* JOHNSTON, Proc. Am. Acad. 40: 40. 1905; — *Peltophorum suringari* URBAN, Symb. Ant. 5: 363. 1908; BOLDINGH, Fl. Ned. W. Ind. Eil. 214. 1913; Fl. D.W. Ind. Isl. 2: 39. 1914; ARNOLDO, Zakflora 28. 1954; Zakflora 143. 1964.

Tree; branches greyish-reddish-brown, lenticellate; branchlets pilose. Leaves: pinnae 2—4 pairs, up to 16 cm long, pilose; leaflets in 6—8 pairs per pinna, subopposite, slightly inequilateral, elliptic-ovate to elliptic-oblong, acute or obtuse at the apex, obliquely obtuse at the base, 4—7 × 1—3.5 cm, pilose or glabrescent, puberulent along the midvein, paler beneath; petiolules 1.5—2 mm long, densely pilose; petiole 2—5 cm long. Racemes simple, many-flowered, 5—15 cm long, pilose or tomentose; bracts semi-orbicular, 0.5 mm long; pedicels 5—10 mm long, articulate at about 2 mm from the apex. Receptacle short. Sepals 5, 4 subequal, elliptic, 1 cm long, shortly fimbriate in the lower half, glandular at the top, the inferior sepal much longer. Petals yellow, obovate-cuneate, 10 mm long, pubescent at the claw. Stamens 10; filaments curved, widened near the base, 5 mm long, pilose at the base; anthers ovate. Ovary pilose. Pod flat, oblong-linear or broadly linear, obtuse or rounded at the top, 7—10 × 3 cm, margins thickened; stipe 0.5—1 cm long. Seeds 2—3, brown, orbicular in outline, flattened at the base and mucronate at the top, 9 mm in diam., 2 mm thick.

Margarita, Aruba, and Curaçao.

Vernacular name: curahout (Leeward Group).

ARUBA: Rooi Prins (Stoffers 2153, st. Feb); Rooi Spanjool (Suringar s.n., st. Feb. [L]); slope of Jamanota (Boldingh 6301, fr. Dec.); calcareous hills and plateau near Balashi (Boldingh 6435, st. Jan.); calcareous hills near Fontein (Boldingh 6479, fr. Jan.); Pedro Cachon (Suringar s.n., st. Feb. [L]); without loc. (Boldingh 5751a, st.).

CURAÇAO: from van Engelen to Waterloo (Boldingh 5451, st. Nov.); roadside of Rif (Britton & Shafer 3084, fr. March); hofje of Siberie (Boldingh 5299, fr. Nov.); hofje of Santa Cruz (Boldingh 5616, st. Dec.); Zuikertuintje (Suringar s.n., st. Feb. [L]).