

# MALVACEAE

by

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Herbs, shrubs or trees with an indumentum nearly always of stellate hairs and often also simple hairs. Leaves alternate, mostly petiolate; blade simple or palmately-lobed or -fid, palmately veined. Stipules present. Inflorescence consisting of axillary or terminal clusters. Bracteoles, when present, free or united into an epicalyx. Flowers hermaphrodite, actinomorphic, usually 5-merous. Calyx valvate, lobed, dentate or truncate. Petals 5, free or somewhat connate, contorted or rarely imbricate, adnate to the base of the staminal tube. Stamens numerous, monadelphous; filaments ultimately free; anthers 1-celled, with longitudinal dehiscence. Ovary superior, 5—∞-locular; style usually branched, the branches as many or twice as many as the carpels, more or less connate; stigmas terminal, capitate or filiform. Ovules 1—many on an axile placentation. Fruit a loculicidal capsule or schizocarp, separating into dehiscent or indehiscent mericarps, these arranged around a central columella. Seeds 1—numerous, mostly reniform or subglobose.

About 85 genera and 1500 species throughout the world but mainly in tropical and subtropical regions.

## Key to the genera:

1. Staminal column bearing anthers at the apex and on the uppermost part... 2  
Staminal column bearing anthers on the outside, the apex truncate or toothed ..... 8
2. Epicalyx present..... 3  
Epicalyx wanting..... 5
3. Fruit a schizocarp; stylebranches as many as the carpels..... 4  
Fruit a loculicidal capsule; style single; epicalyx of 5—12 bracteoles; petals longer than 1.5 cm..... *Cienfuegosia*
4. Epicalyx of 3 narrow bracteoles; carpels unilocular, one-seeded; petals shorter than 1 cm..... *Malvastrum*  
Epicalyx of 6—9 ovate, acute lobes; carpels subbilocular, divided incompletely into an upper empty locule and a lower one; petals longer than 3 cm.. *Alcea*

5. Carpels 1-seeded..... 6  
 Carpels 2—3 to many-seeded..... 7
6. Fruit a schizocarp; carpels separating in fruit..... *Sida*  
 Fruit a loculicidal capsule not separating in fruit..... *Bastardia*
7. Carpels not or only slightly inflated, apex more or less pointed, membranaceous to coriaceous, separating completely; blade more or less lobed; petals yellow..... *Abutilon*  
 Capsule inflated, apex rounded, membranaceous; valves of the mericarps opening completely at maturity, remaining connate at the middle; blade not lobed; petals whitish..... *Herissantia*
8. Fruit a schizocarp..... 9  
 Fruit a capsule, loculicidally dehiscent or indehiscent..... 11
9. Epicalyx wanting; flowers in subsessile heads, subtended by an involucre of 3 large leafy bracts..... *Malachra*  
 Epicalyx present; flowers not in heads; involucre wanting..... 10
10. Epicalyx 5-cleft; carpels provided with glochidiate spines; leaves with 1—3 narrow glands on the median vein on the lower side..... *Urena*  
 Epicalyx bracteoles free; carpels without glochidiate spines; leaves without glands..... *Pavonia*
11. Style branched..... 12  
 Style not branched, clavate; stigmas 5..... 13
12. Calyx spathaceous, deciduous..... *Abelmoschus*  
 Calyx regularly toothed or lobed, persistent..... *Hibiscus*
13. Fruit a loculicidal, dehiscent capsule; epicalyx of 3 bracteoles, these large, deeply incised, foliaceous, 3—6 cm long, black punctate with oilglands, persistent; petals 4—6 cm long..... *Gossypium*  
 Fruit an indehiscent, leathery capsule; epicalyx of 3—5 bracteoles, these small, entire, not longer than 1 cm, caducous..... *Thespesia*

**Abutilon** Miller, Gard. Dict. Abr. ed. 4. 1754

Shrubs or shrubby herbs, pubescent by stellate hairs, sometimes intermingled with simple hairs. Leaves petiolate; blade suborbicular to cordate, more or less palmately 3-lobed, acute to acuminate at the apex, cordate at the base, palmately veined, the margin crenate to dentate. Stipules linear to lanceolate. Flowers axillary, solitary or in subumbellate clusters; pedicels jointed. Epicalyx wanting. Calyx campanulate, 5-lobed, the lobes acuminate. Staminal tube bearing anthers at the top, often ventricose at base, usually shorter than the petals. Stylebranches as many as the carpels. Fruit a schizocarp. Mericarps a single whorl, usually not inflated, ovate-oblong, in lateral view more or less pointed at the apex or mucronate, the walls firm-membranaceous to coriaceous. Mericarps separating completely from each other. Seeds reniform, pubescent or tuberculate.

About 150 species in tropical and subtropical regions.

Key to the species:

1. Flowers subumbellate, carpels 5—7..... *A. umbellatum*  
Flowers solitary, carpels 12 or more..... 2
2. Indumentum of long simple hairs, minute stellate and short glandular hairs;  
petals 15—20 mm long, yellow with a brownish, red or purple spot *A. hirtum*  
Indumentum of stellate hairs and very few simple hairs, without glandular hairs;  
petals up to 15 mm long, yellow..... *A. indicum*

***Abutilon umbellatum* (L.) Sweet**

SWEET, Hort. Brit. 53. 1826; GRISEBACH, Fl. Br. W. Ind. Isl. 78. 1859 ['1864']; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; URBAN, Symb. Ant. 4: 384. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 272. 1913; Fl. D.W. Ind. Isl. 2: 63. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 546. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 97. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 74. 1929; QUESTEL, Fl. Isl. St. Bartholomew 146. 1941; LEON & ALAIN, Fl. Cuba 3: 264. 1953; ARNOLDO, Zakflora 77. 1954; Zakflora 156. 1964; ADAMS, Flowering plants of Jamaica 463. 1972; FOURNET, Fl. Guadeloupe & Martinique 1493. 1978; — *Sida umbellata* LINNAEUS, Syst. Nat. ed. 10. 1145. 1759.

Shrubby herb, 1—2 m high; all parts covered with stellate hairs intermingled with long simple hairs. Leaves petiolate; blade cordate and mostly 3-lobed, the terminal lobe acute or acuminate, 3—12 cm long and up to 11 cm wide, palmately 7—9-veined, the veins more densely haired than the blade, margin crenate to dentate, the younger leaves tomentose; petiole up to 7 cm long. Stipules linear-lanceolate, up to 10 mm long. Inflorescence subumbellate, terminal or axillary; peduncles up to about 6 cm long. Calyx campanulate, lobes acuminate, tomentose on both sides, 5—7 mm long. Petals yellow, incurved, 8—9 mm long. Staminal column shorter than the petals. Carpels 5—7, tomentose on the back, mucronate, 6—8 mm long. Seeds usually 3 in a carpel, tuberculate.

Mexico and Colombia; Greater Antilles, Antigua, and Trinidad.

Rather common weed.

ARUBA: Playa (Arnoldo 182, fl. & fr. Dec.); Tanki Leendert (Boldingh 6253, fl. & fr. Dec.); without loc. (Boldingh 5751, fl.; Koolwijk s.n. sub Suringar s.n., fr. [L]).

BONAIRE: calcareous hills near Fontein (Boldingh 7339, fr. Feb.); neighbourhood of Rincon (Boldingh 7015, fl. Feb.); Fontein (Stoffers 544, fl. & fr. Nov.; Suringar s.n., fl. & fr. Feb. [L]).

CURAÇAO: hofje of Barber (Boldingh 5235, fr. Nov.); road from Savonet to Seroe Christoffel (Boldingh 4984, fr. Nov.); hills between Santa Cruz and Seroe Christoffel (Boldingh 5607, fl. Dec.); Mahoema (Boldingh 4810, fr. Oct.); Anthony Berg (Boldingh 5150, fl. & fr. Nov.); road from Cas Chiquito to Veeris Berg (Boldingh 4718, fl. & fr. Oct.); St. Thomascollege (Arnoldo s.n., fr. March); Plantersrust (Suringar s.n., fr. Jan. [L]); Fort Nassau (Suringar s.n., fr. Jan. [L]); St. Michiel (Suringar s.n., fl. March [L]); Schottegat (Suringar s.n., fr. Feb. [L]).

**Abutilon hirtum** (Lam.) Sweet

SWEET, Hort. Brit. 53. 1826; DUSS, Fl. phan. Ant. franç. 67. 1897; URBAN, Symb. Ant. 4: 385. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 271. 1913; Fl. D.W. Ind. Isl. 2: 63. 1914; BRITTON & MILLSAUGH, Bahama Fl. 265. 1920; URBAN, Symb. Ant. 8: 409. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 547. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 98. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 74. 1929; LEON & ALAIN, Fl. Cuba 3: 265. 1953; ARNOLDO, Zakflora 76. 1954; Zakflora 156. 1964; GOODING *et al.*, Fl. Barbados 278. 1965; ADAMS, Flowering plants of Jamaica 463. 1972; FOURNET, Fl. Guadeloupe & Martinique 1494. 1978; — *Sida hirta* LAMARCK, Encycl. 1: 7. 1783.

Shrubby herb up to 1.5 m high, all parts covered with very long simple hairs, minute stellate hairs and glandular hairs. Leaves petiolate; blade suborbicular to ovate, very slightly palmately 3-lobed, acute to short-acuminate at the apex, cordate at the base, 3—14 cm long palmately 9—11-veined, margin irregularly crenate to dentate, the lower side more densely hairy than the upperside; petiole 3—18 cm long. Stipules linear-lanceolate, up to 11 mm long. Flowers solitary in the leafaxils; pedicels 3—6 cm long. Calyx campanulate, up to 14 mm long. Petals yellow with a brownish-red or purple base, 1.5—2 cm long. Carpels many, shortly pointed, tomentose at the back, 10—14 mm long. Seeds punctate by minute stellate hairs and long stellate hairs at the hilum, mostly 3 in each carpel.

West Indies; Florida, continental tropical America and Old World tropics.

In open vegetations.

Vernacular name: tres or (Leeward Group).

ARUBA: Playa (Arnoldo 268, fl. & fr. Dec.); without loc. (Boldingh s.n., fl. & fr.).

BONAIRE: along roads in Kralendijk (Stoffers 948, fl. & fr. Nov.).

CURAÇAO: San Juan (Burgers 148, fl. & fr. Feb.); Savonet (Suringar s.n., fl. Jan. [L]); Hato (Suringar s.n., fr. Jan. [L]).

SABA: Windwardside (Arnoldo 930, fl. & fr. Aug.).

**Abutilon indicum** (L.) Sweet

SWEET, Hort. Brit. 54. 1826; GRISEBACH, Fl. Br. W. Ind. Isl. 78. 1859 [‘1864’]; DUSS, Fl. phan. Ant. franç. 67. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 126. 1909; URBAN, Symb. Ant. 4: 385. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 272. 1913; URBAN, Symb. Ant. 8: 410. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 547. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 100. 1926; QUESTEL, Fl. Isl. St. Bartholomew 146. 1941; LEON & ALAIN, Fl. Cuba 3: 265. 1953; GOODING *et al.*, Fl. Barbados 278. 1965; ADAMS, Flowering plants of Jamaica 463. 1972; FOURNET, Fl. Guadeloupe & Martinique 1493. 1978; — *Sida indica* LINNAEUS, Cent. Plant. 2: 26. 1756.

Shrub or shrubby herb, up to 2 m high, all parts covered by stellate hairs, older branches sparsely stellate-haired, younger ones tomentose with very few long simple hairs. Leaves petiolate; blade suborbicular to ovate, very slightly palmately 3-lobed, the terminal lobe acute to acuminate, cordate at the base, palmately 9-veined, 3—10 cm long, margin

irregularly dentate, upper side sparsely stellate-haired, tomentose beneath; petiole 1.5—10 cm long, apex more densely provided with long simple hairs than in the lower part. Stipules linear, 3—7 mm long. Flowers solitary in the leafaxils; pedicels with long simple hairs at the apex. Calyx campanulate, tomentose outside, villous inside, 4—10 mm long. Petals yellow, 14—15 mm long. Carpels 12 or more, tomentose, mucronate at the back, in fruit dark, 12—14 mm long. Seeds minutely stellate-haired, glabrous at the hilum, mostly 3 in each carpel.

West Indies; tropics of both hemispheres.

SABA: The Bottom (Arnoldo 743, fl. Aug.).

ST. EUSTATIUS: along roads in Oranjestad (Boldingh 932, fl. & fr. June); Concordia (Suringar s.n., fr. May [L]); English Quarter (Suringar s.n., fr. May [L]); without loc. (Boldingh s.n., fr.).

ST. MARTIN: Philipsburg (Arnoldo 3137, fl. & fr. Dec.).

*Herissantia* Medikus, Phil. Bot. 1: 90. 1789; Vorles. Churpfälz Phys.-Oekon. Ges. 4: 244. 1789

Shrubby herbs, pubescent. Leaves petiolate; blades ovate-cordate, not lobed, margin crenate to serrate, palmately veined. Flowers solitary in the leaf-axils; pedicels geniculate, articulate. Epicalyx wanting. Calyx campanulate, reflexed in fruit. Petals whitish; margins ciliolate. Staminal column included by the petals; anthers on top of the column. Stylebranches as many as mericarps. Fruit a schizocarp. Mericarps inflated, membranaceous, apex rounded, 2—6-seeded, hairy, 10—15 mm long in fruit; at maturity valves of the mericarps opening completely and remaining connate.

Monotypic genus, native of tropical and subtropical America.

*Herissantia crispa* (L.) Brizicky

BRIZICKY, Journ. Arnold Arb. 49: 279. 1968; ADAMS, Flowering plants of Jamaica 463. 1972; FOURNET, Fl. Guadeloupe & Martinique 1492, fig. 705. 1978; — *Abutilon crispum* MEDIKUS, Malvenfam. 29. 1787; GRISEBACH, Fl. Br. W. Ind. Isl. 79. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 68. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 126. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; URBAN, Symb. Ant., 4: 385. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 271. 1913; FAWCETT & RENDLE, Fl. Jamaica 5(3): 98. 1926; QUESTEL, Fl. Isl. St. Bartholomew 146. 1941; — *Gayoides crispum* (L.) SMALL, Fl. S. E. Un. States 764. 1903; BRITTON & MILLSPAUGH, Bahama Fl. 266. 1920; URBAN, Symb. Ant. 8: 409. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 549. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 77. 1929; LEON & ALAIN, Fl. Cuba 3: 264. 1953; ARNOLDO, Zakflora 79. 1954; Zakflora 157. 1964; — *Sida crispa* LINNAEUS, Spec. Plant. 685. 1753.

Shrubby herb up to 1.5 m high, usually much branched; older branches glabrous, younger ones tomentose by stellate and simple hairs. Leaves petiolate; petiole 1—4.5 cm long; blade ovate, acuminate at the apex, cordate at the base, up to 5 cm long, palmately 7—9-veined, margin crenate to serrate, upper surface with sparsely stellate and simple hairs, lower surface tomentose. Stipules linear, sparsely hairy, up to 5 mm long. Flowers solitary in the leaf-axils; pedicels slender, articulate at 5 mm below the calyx, with long

simple hairs at the apex, up to 5 cm long. Calyx campanulate, reflexed in fruit, tomentose to villous, 4—6 mm long. Petals white, whitish or pale yellow, up to 9 mm long. Staminal column up to 3 mm long. Carpels about 12, membranaceous, inflated, 10—15 mm long in fruit.

Native of subtropical and tropical America; now widespread in the tropics.

CURAÇAO: Knip Plantation (Arnoldo 2162, fl. & fr. Jan.); Seroe Christoffel (Arnoldo 1772, fl. Dec.; 1134, fl. Sept.; 1925, fl. Feb.; Stoffers 1221, fl. Dec.; 1223, fl. Dec.).

ST. EUSTATIUS: English Quarter (Suringar s.n., fl. & fr. May [L]).

**Malvastrum** A. Gray, Mem. Amer. Acad. Arts Ser. 2. 4: 21. 1849. Nom. cons. 4995

Herbs, somewhat woody with simple or stellate hairs. Leaves petiolate; blades more or less ovate, serrate. Flowers axillary, solitary or in clusters or in terminal spikes, short pedicellate to sessile. Epicalyx of 3 narrow bracteoles. Calyx 5-lobed, campanulate. Petals yellow, hairy at the base. Staminal tube included by the petals, bearing anthers at the apex. Stylebranches as many as the carpels; stigmas capitate. Fruit a schizocarp, one whorl of mericarps; carpels 5—16, hairy, one-seeded. Seeds reniform.

About 12 species, natives of tropical and subtropical America, but nowadays a few species in both hemisphere.

Key to the species:

1. Flowers in dense, terminal spikes and solitary or a few together in the leaf-axils; mericarps blunt; indumentum tomentose by stellate hairs. . . . *M. americanum*  
Flowers solitary or in few-flowered clusters; mericarps with two dorsal spines and a larger one at the apex. . . . . *M. coromandelianum*

**Malvastrum americanum** (L.) Torr.

TORREY in EMORY, Rep. U.S. & Mex. Bound. Surv. 2: 38. 1859; GOODING *et al.*, Fl. Barbados 282. 1965; ADAMS, Flowering plants of Jamaica 459. 1972; FOURNET, Fl. Guadeloupe & Martinique 1496. 1978; — *Malva americana* LINNAEUS, Spec. Plant. 687. 1753; — *Malvastrum spicatum* (L.) A. GRAY, Mem. Am. Acad. Arts Sci. Ser. 2. 4: 22. 1849; GRISEBACH, Fl. Br. W. Ind. Isl. 72. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 62. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 126. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; URBAN, Symb. Ant. 4: 388. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 273. 1913; Fl. D.W. Ind. Isl. 2: 63. 1914; URBAN, Symb. Ant. 8: 413. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 550. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 77. 1929; QUESTEL, Fl. Isl. St. Bartholomew 147. 1941; LEON & ALAIN, Fl. Cuba 3: 267. 1953; ARNOLDO, Zakflora 75. 1954; Zakflora 158. 1964; — *Malva spicata* LINNAEUS, Syst. Nat. ed. 10. 1146. 1759.

Herb or shrubby herb, up to 2.5 m high; all parts tomentose by stellate hairs. Leaves petiolate; blade triangular to ovate, serrate to dentate, acute to obtuse at the apex, cuneate, truncate or slightly cordate at the base, up to 8 × 7 cm, palmately 7-veined pubescent; petiole up to 5 cm long. Stipules linear, up to 6 mm long. Flowers in dense terminal spikes or solitary or 2—3 together in the leaf-axils. Bracts deeply divided into 2

or 3 narrow lobes; bracteoles 3, narrow, adnate to the calyx, up to 8 mm long. Calyx campanulate with 5 acuminate lobes, up to 9 mm long; both bracteoles and calyx with long simple hairs besides stellate hairs. Petals obcordate, yellow to yellowish-orange, hairy at the base, up to 9 mm long. Staminal tube hairy. Mericarps 10—15, hairy at the apex, mucous, one-locular, one-seeded. Seeds with scattered hairs.

Of American origin, but now generally spread in the tropics and subtropics.

Common weed.

Vernacular names: yerba ia, yerba grawatado, teteko (Leeward Group).

**ARUBA:** slope of Seroe Sumpiña (Boldingh 6404, fl. & fr. Jan.); slope of Miralamar (Boldingh 6453, fl. & fr. Jan.; 6445, fl. Jan.); Sivi-sivi (Boldingh 6327, fl. Dec.); Oranjestad (Arnoldo 178, fl. & fr. Dec.; Suringar s.n., fl. & fr. Jan. [L]); along the road near Oranjestad (Stoffers 2060, fl. & fr. Feb.; 2076, fl. & fr. Feb.; 2150, fl. & fr. Feb.); Fontein Plantation (Stoffers 1731, fl. & fr. Jan.; 1689, fl. & fr. Jan.); N. E. of Jamanota (Stoffers 1649, fl. Jan.); Matoguerai (Stoffers 1418, fl. & fr. Jan.); Jamanota (Suringar s.n., fl. & fr. Feb. [L]); without loc. (Boldingh s.n., fl. & fr.; Koolwijk s.n., sub Suringar s.n., Jan. [L]).

**BONAIRE:** neighbourhood of Rincón (Boldingh 7012, fl. & fr. Jan.; 7024, fl. Jan.); Guatemala Plantation (Stoffers 804, fl. & fr. Nov.); Fontein (Suringar s.n., fl. & fr. Feb. [L]).

**CURAÇAO:** Cas Cora (Stoffers 252, fl. & fr. Oct.); Santa Catharina (Stoffers 179, fl. & fr. Oct.); Choloma (Stoffers 26, fl. & fr. Sept.); Noordkant Plantation (Stoffers 132, fl. & fr. Oct.; 146, fl. & fr. Oct.); Klein St. Michiel (Stoffers 275, fl. Oct.); Malpais (Stoffers 287, fl. Oct.); Mundo Nobo (Lens 703, fl. & fr. Sept.); road near Wacao (Boldingh 5105, fl. & fr. Nov.); hofje of Valentijn (Boldingh 5354, fl. Nov.); Savonet (Suringar s.n., fl. & fr. Jan. [L]); roadside near Willemstad (Britton & Shafer 2959, fl. & fr. March); Mahoema (Boldingh 4809, fl. & fr. Oct.); hofje of Barber (Boldingh 5237, fl. & fr. Nov.); Anthony Berg (Boldingh 5151, fl. & fr. Nov.); Santa Barbara (Went 1348, fr. Jan.), Gasparito (Lens 832, fl. & fr. Jan.); Museumgarden (Arnoldo 2008, fl. & fr. Ap.); abandoned hofje near Jan Thiel (Nagelkerken 334, fl. & fr. Jan.); hofje near Weis Afo (Nagelkerken 229, fl. & fr. Nov.; 102, fl. & fr. Nov.); Groot Piscadera (Burgers 122, fl. & fr. Jan.); Santa Rosa (de Wilde 55a, fl. & fr. Feb. [L]); Groot Kwartier (Suringar s.n., fl. & fr. Feb. [L]); Schottegat, Roode weg (Suringar s.n., fl. & fr. Feb. [L]); Zuikertuintje (Suringar s.n., fl. & fr. Feb. [L]); Fort Nassau (Suringar s.n., fl. & fr. Jan. [L]); Asiento (Suringar s.n., fl. & fr. Jan. [L]).

**SABA:** from Hellsgate to Mary's Point (Boldingh 2046, fl. & fr. July); along road between The Bottom and Windwardside, 200 m (Boldingh 1304, fl. & fr. June).

**ST. EUSTATIUS:** garden in Oranjestad (Boldingh 90, fl. & fr. July); roadsides in Oranjestad (Stoffers 3864, fl. & fr. July); Fort de Windt (Boldingh 799, fl. June).

**ST. MARTIN:** from Philipsburg to Guana Bay (Boldingh 2346, fl. & fr. Aug.); near Bethlehem (Boldingh 2663, fl. & fr. Aug.).

**Malvastrum coromandelianum (L.) Garcke**

GARCKE, *Bonplandia* 5: 295. 1857; URBAN, *Symb. Ant.* 4: 387. 1910; BOLDINGH, *Fl. Ned. W. Ind. Eil.* 272. 1913; *Fl. D. W. Ind. Isl.* 2: 63. 1914; BRITTON & MILLSAUGH, *Bahama Fl.* 267. 1920; URBAN, *Symb. Ant.* 8: 412. 1920; FOURNET, *Fl. Guadeloupe & Martinique* 1495, fig. 706. 1978; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 549. 1924; WILLIAMS, *Fl. Trinidad & Tobago* 1: 78. 1929; QUESTEL, *Fl. Isl. St. Bartholomew* 147. 1941; LEON & ALAIN, *Fl. Cuba* 3: 267. 1953; GOODING *et al.*, *Fl. Barbados* 282. 1965; ADAMS, *Flowering plants of Jamaica* 460. 1972; — *Malvastrum tricuspdatum* A. Gray, *Pl. Wright.* 1: 16. 1852; GRISEBACH, *Fl. Br. W. Ind. Isl.* 72. 1859 [1864]; DUSS, *Fl. phan. Ant. franç.* 63. 1897; BOLDINGH, *Fl. D. W. Ind. Isl.* 1: 127. 1909; — *Malva coromandelianum* LINNAEUS, *Spec. Plant.* 687. 1753.

Woody herb, up to 1 m high, all parts covered with stiff appressed simple and 2—4-curved-stellate hairs; younger parts tomentose. Leaves petiolate; blades ovate to lanceolate, acute or obtuse at the apex, cuneate or truncate at the base, palmately 5-veined, up to 6 cm long; petioles to 2 cm long. Stipules linear-lanceolate, up to 8 mm long. Flowers solitary or in clusters in the leafaxils or terminal, short-pedicellate. Epicalyx of 3 narrow bracteoles, up to 6 mm long. Calyx campanulate, its lobes acuminate, up to 7 mm long. Petals pale yellow, hairy at the base on the margins, c. 8 mm long. Staminal tube glabrous, shorter than the calyx, about 3 mm long. Mericarps 10, each with 2 dorsal awns at the back near the middle and a larger one at the apex, the upper part stiffly hairy, 1-seeded, (2—) 3 mm long.

Common in tropical and subtropical regions of both hemispheres, probably of American origine.

Roadsides and abandoned fields.

CURAÇAO: hofje near Mantancia (Nagelkerken 503, fl. & fr. Jan.); Hato (Boldingh 5347, fl. & fr. Nov.); Choloma (Arnoldo 1571, fl. & fr. Jan.); Zuurzak (Suringar s.n., fl. & fr. Jan. [L]).

SABA: Windwardside (Arnoldo 912, fl. & fr. Aug.); Ladder Gut, 100—200 m (Stoffers 2803, fl. & fr. Ap.).

ST. EUSTATIUS: along roads in Oranjestad (Stoffers 3860, fl. & fr. July); The Quill (Boldingh 901, fl. June).

ST. MARTIN: Experimental Garden Cul de Sac (Stoffers 2347, fl. & fr. March; 2359, fl. & fr. March).

*Sida* Linnaeus, *Spec. Plant.* 683. 1753

Herbs or undershrubs, annual or perennial, variously pubescent with mostly stellate hairs or glabrous. Leaves petiolate; blade simple, rarely divided or lobed, entire or serrate. Flowers solitary or a few together in the axils of the leaves or in terminal clusters, subsessile to long-pedicellate; pedicels sometimes adnate to the petiole of the subtending leaf or bract. Calyx campanulate, usually angled, more or less acrescent in fruit. Petals adnate to the base of the staminal tube, yellow, orange or white. Staminal tube bearing anthers at the top, usually shorter than the petals, filaments few to numerous. Ovary 5—many-locular; stylebranches as many as the carpels, free at least in the upper part;



stigmas capitate. Ovules solitary in each locule. Fruit a schizocarp; mericarps more or less trigonous, indehiscent or dehiscent at the top only, beaked, more or less reticulate. Seeds glabrous or variously pubescent.

About 200 species in tropics and subtropics, especially in the New World, but also in Australia and S.E. Asia.

**Key to the species:**

1. Pedicel adnate to the petiole of the subtending leaf or bract; flowers in terminal clusters of 2—8; carpels 5—8, shortly muricate; leaves linear-oblong to oblong-ovate, not more than 2 cm long ..... *S. ciliaris*  
 Pedicel free ..... 2
2. Carpels 5 ..... 3  
 Carpels more than 5 ..... 8
3. Stipules narrowly ovate, acuminate, several veined, 8—15 mm long; indument of long-appressed simple hairs; flowers in clusters; carpels with 2 short beaks ..... *S. glomerata*  
 Stipules not narrowly ovate, acuminate, several veined and 8—15 mm long . . . 4
4. Leaves ovate, more or less oblique, obtuse at the base; flowers short-pedicellate; carpels short beaked, minutely stellate puberulous on back and beaks ..... *S. jamaicensis*  
 Leaves cordate, truncate or rounded at the base; pedicels slender ..... 5
5. One or two minute spines below the insertion of the petiole; carpels with 2 short reticulate and pubescent beaks ..... *S. spinosa*  
 One or two spines below the insertion of the petioles wanting ..... 6
6. Stems erect; indument sparse or stems glabrous; leaves up to 6 cm long; beaks of the mericarp 1.5—2 mm long, antrorsely hispid ..... *S. glabra*  
 Stems procumbent; leaves up to 2 cm long ..... 7
7. Indument densely pubescent by minute stellate hairs and long simple patent hairs; leaf apex obtuse to rounded ..... *S. procumbens*  
 Indument sparingly stellate-haired or plant glabrous; leaf apex acute to acuminate ..... *S. veronicifolia*
8. Leaves ovate to broad-ovate, cordate or truncate at the base; pedicels often shorter than the subtending petiole; indumentum densely tomentose by minute stellate hairs intermingled with longer simple hairs; carpels with long, retrorsely, hispid beaks or short-beaked to nearly blunt ..... *S. cordifolia*  
 Leaves cuneate to rounded at the base ..... 9
9. Flowers short-pedicellate; indumentum of simple hairs and minute stellate hairs; stipules linear to lanceolate, unequal in a pair, 3-veined, ciliate, 4—15 mm long; beaks short ..... *S. acuta*  
 Flowers on long, slender pedicels; leaves rhombic, ovate-lanceolate or linear; indumentum of stellate hairs; stipules up to 5 mm long ..... 10

10. Leaves oblong or lanceolate to linear, margins serrulate; beaks long, erect, retrorsely hispid, c. 2 mm long. . . . . *S. salviifolia*  
 Leaves rhombic, ovate or lanceolate, margin serrate above the base; calyx with thickened and yellowish ribs; beaks glabrous or with minute stellate hairs, about 1 mm long. . . . . *S. rhombifolia*

***Sida ciliaris* L.**

LINNAEUS, Syst. Nat. ed. 10. 1145. 1759; GRISEBACH, Fl. Br. W. Ind. Isl. 73. 1859 [‘1864’]; DUSS, Fl. phan. Ant. franç. 64. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 127. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; URBAN, Symb. Ant. 4: 388. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 274. 1913; Fl. D.W. Ind. Isl. 2: 64. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 267. 1920; URBAN, Symb. Ant. 8: 414. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 551. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 115. 1926; QUESTEL, Fl. Isl. St. Bartholomew 148. 1941; LEON & ALAIN, Fl. Cuba 3: 271. 1953; ARNOLDO, Zakflora 141. 1954; Zakflora 158. 1964; GOODING *et al.*, Fl. Barbados 285. 1965; ADAMS, Flowering plants of Jamaica 465. 1972; FOURNET, Fl. Guadeloupe & Martinique 1498. 1978.

**var. *ciliaris***

Perennial herb or subshrub up to 30 cm high, much branched; branches prostrate to ascending, strigose by stellate or 2—4-armed hairs, hirsute towards the top. Leaves petiolate; blade linear-oblong to oblong-ovate, obtuse to truncate at the apex, rounded to slightly cordate at the base, margin serrate above the middle, 3—5-palmateveined, the upper surface glabrous or nearly so, the lower surface strigose by stellate or 2—4-awned hairs, sometimes ciliate, up to 2 cm long and 9 mm wide; petiole more or less geniculate near the apex, strigose by stellate 2—4-forked or simple hairs, about 10 mm long. Stipules linear, ciliate, up to 9 mm long. Flowers in 2—8-flowered terminal clusters subtended by the upper leaves and stipule-like ciliate bracteoles, rarely solitary in the leafaxils; pedicel adnate to the petiole of the subtending leaf, 1—2 mm long. Calyx with triangular lobes, hirsute by stellate and simple hairs at the inner side also hirsute by simple hairs near the margin, 4—5 mm long. Petals more or less obovate-oblique, white, yellow, orange or rosa to purple, about 8 mm long. Staminal tube glabrous, about 2—3 mm long. Carpels 5—8, trigonous with 2 short beaks, the back muricate, lateral walls strongly reticulate, membranaceous between the reticulations, glabrous to minutely stellate haired, 2—3 mm long. Seeds trigonous-subrotund, glabrous or with scattered stellate hairs, 1.5 mm long.

Southern United States to Bolivia and Argentina; West Indies.

Rather common weed.

Vernacular name: yerba di pinda (Leeward Group).

ARUBA: Companashi (Arnoldo 144, fl. & fr. Dec.; 83. fl. & fr. Dec.); without loc. (Boldingh s.n., fl. & fr.; Koolwijk s.n., sub Suringar s.n., fl. & fr.).

BONAIRE: Playa (Arnoldo 37, fl. & fr. Nov.).

CURAÇAO: hofje of Siberië (Boldingh 5034, fl. & fr. Nov.); Rif Hill (Boldingh 5328, fl. Oct.); road near Wacao (Boldingh 5105, fr. Nov.); Veeris Berg (Boldingh 4723, fl. & fr. Oct.); Willemstad (Went 1100, fl. & fr. Oct.); Piscadera Baai (Britton & Shafer 3125, fl. & fr. March; de Wilde 35a, fl. & fr. Dec.); Domi (Stoffers 314, fl. & fr. Oct.); hofje near Weis Afo (Nagelkerken 105, fl. & fr. Feb.); Coppermines (Suringar s.n., fr. Jan. [L]); Brakke Put (Suringar s.n., fl. & fr. Jan. [L]); Hato (Suringar s.n., fr. Jan. [L]); Priester Berg (Suringar s.n., fr. Jan. [L]).

ST. EUSTATIUS: near Mary Glory, 150 m (Boldingh 1153, fl. & fr. June); near Boven, 200 m (Boldingh 1245, fl. & fr. June); Cultuurvlakte between Oranjestad and Fort de Windt on top of the Cliff, 40 m (Boldingh 756, st. June); without loc. (Boldingh s.n., fl.).

ST. MARTIN: from Philipsburg to Belvedere (Boldingh 2562, fl. Aug.); between Mont Vernon and Orient Bay (Boldingh 2938, fl. & fr. Aug.); Cole Bay Hill (Suringar s.n., fl. & fr. May [L]).

#### *Sida glomerata* Cav.

CAVANILLES, Diss. 1: 18, t. 2, f. 6. 1785; GRISEBACH, Fl. Br. W. Ind. Isl. 73. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 64. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 128. 1909; URBAN, Symb. Ant. 4: 389. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 268. 1920; URBAN, Symb. Ant. 8: 415. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 552. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 109. 1926; QUESTEL, Fl. Isl. St. Bartholomew 149. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 485. 1947; LEON & ALAIN, Fl. Cuba 3: 273. 1953; ADAMS, Flowering plants of Jamaica 466. 1972; FOURNET, Fl. Guadeloupe & Martinique 1499. 1978.

Shrubby herb, up to 1 m high; branches on one side hirsute by long simple hairs and smaller stellate hairs. Leaves petiolate; blade narrowly ovate, rhomboid, acute at the apex, obtuse or cuneate at the base, up to 6 cm long and 2 cm wide, 3—5-palmateveined, the margin serrate, ciliate, both surfaces sparingly covered by appressed simple hairs and a few stellate hairs especially on the veins; petiole pubescent, 5—7 mm long. Stipules conspicuous, narrowly ovate to broadly lanceolate, acuminate, ciliate, persistent, 3—several veined, 8—15 mm long. Flowers solitary in the leafaxils or terminal, short-pedicellate or subsessile, mostly accompanied by a short to very short flowering branchlet forming a subsessile cluster. Calyx 5-angled, the lobes acuminate with long hairs on the veins and the margin, up to 5—7 mm long. Petals yellow or whitish, slightly longer than the calyx. Staminal tube glabrous, 2—3 mm long. Stylebranches connate below the middle. Carpels 5, trigonous, with 2 short beaks, glabrous, back and lateral walls reticulate, 1—1.5 mm long. Seeds hairy on the hilum, 1—1.5 mm long.

Southern Mexico to Paraguay, Bahamas, and West Indies.

ST. EUSTATIUS: slope of The Quill near Glass Bottle (Stoffers 3846, 3853, fl., July); without loc. (Van Groll-Meyer 275, fl. & fr.).

#### *Sida glabra* Mill.

MILLER, Gard. Dict. ed. 8. 1768; URBAN, Symb. Ant. 8: 417. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 554. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 113. 1926; QUESTEL, Fl. Isl. St. Bartholomew 148. 1941; LEON & ALAIN, Fl. Cuba 3: 275. 1953; ADAMS, Flowering plants of Jamaica 466. 1972; — *Sida ulmifolia* CAVANILLES, Diss. 1: 15, t. 2, f. 4. 1785; GRISEBACH, Fl. Br. W. Ind. Isl. 75. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 66. 1897; BOLDINGH, Fl. Ned. W. Ind. Eil. 276. 1913; URBAN, Symb. Ant. 4: 392. 1910; FOURNET, Fl. Guadeloupe & Martinique 1502. 1978.

Shrubby herb or shrub, up to 90 cm high; branches slender, sparsely stellate- and simple-haired to glabrous. Leaves petiolate; blade ovate, acuminate at the apex, cordate at the base, up to 6 cm long and 3 cm wide, 5—7-palmateveined, margin serrate-crenate,

sparsely stellate- and simple-haired on both sides; petiole slender, up to 2 cm long, adaxially more densely pubescent. Stipules linear, c. 4 mm long, minutely pubescent. Flowers solitary in the leafaxils, often with a second flower and sometimes a short flowering branchlet appearing later in the same axil; pedicel slender, obscurely articulated, in fruit longer and articulation becoming more conspicuous, short, up to 1.5 cm long in fruit. Calyx 5-angled, minutely tomentose, about 5—6 mm long, lobes acuminate, green-margined, about as long as the tube. Petals yellow, about as long as the calyx. Staminal tube short. Carpels 5, trigonous, narrow, 2-beaked at the top, antrorsely hispid towards the apex and the beaks, back and lateral walls reticulate, about 4 mm long beaks included; beaks 2 mm. Seeds hairy at the hilum.

West Indies south to Martinique; from Mexico to Venezuela.

Roadside weed.

ST. EUSTATIUS: along roads in Oranjestad (Boldingh 918, fl. June); near Mary Glory, 150 m (Boldingh 1115, fl. & fr. June); Little Mountains (Stoffers 3754, fl. & fr. July).

ST. MARTIN: along roads in Cul de Sac (Boldingh 2967, fl. & fr. Aug.); lower part of Milldrum Hill (Boldingh 3168, fl. & fr. Sept.); Marigot (Arnoldo 3161, fl. & fr. Aug.).

*Sida javensis* Cav.

CAVANILLES, Diss. 1: 10, t. 1., f. 5. 1785 emend. VAN BORSSUM WAALKES, Blumea 14: 184. 1966; —? *Sida hederifolia* CAVANILLES, Diss. 1: 8, t. 9, f. 3. 1785; — *Sida humilis* auct. non CAV.; BOLDINGH, Fl. D. W. Ind. Isl. 1: 128. 1909 p.p.; URBAN, Symb. Ant. 4: 391. 1910; Symb. Ant. 8: 417. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 553. 1924; — *Sida veronicifolia* auct. non LAM.; LEON & ALAIN, Fl. Cuba 3: 274. 1953; — *Sida procumbens* auct. non SW.; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913 p.p.

Herb, up to 40 cm high; branches slender, procumbent, sparingly stellate-haired or glabrous. Leaves petiolate; blade broad-ovate to orbicular, acute or acuminate at the apex, cordate at the base, up to 2.5 cm long and 2 cm wide, 5—7(—9)-palmateveined, margin serrate to crenate, glabrescent or with stellate and long, simple hairs above, more densely haired beneath; petiole slender with a band of small hairs adaxially, up to 4 cm long. Stipules linear, 1—2 mm long. Flowers solitary, axillary, on slender 1.5—2.5 cm long pedicels, accrescent to 3.5 cm in fruit. Calyx angled, lobes ovate, acute to acuminate, with hispid stellate and simple hairs especially on the veins and the margins, at the inner side hirsute near the margin by simple hairs, 4—5 mm long. Petals obovate, yellow, longer than the calyx, c. 6 mm long. Staminal tube glabrous or with a few simple hairs, 2—3 mm long. Stylebranches connate above the middle. Carpels 5, trigonous-subrotund, back and lateral walls reticulate, glabrous, somewhat hairy at the apex, with 2 short beaks of 0.5 mm length, 2 mm long. Seeds ovoid, glabrous, about 2 mm long; hairy at the hilum.

Cuba, Hispaniola, Puerto Rico & Virgin Islands, St. Martin, Saba, Grenada; continental tropical America.

In drier parts of the islands.

SABA: between The Bottom and Mary's Point, 100—200 m (Boldingh 1457, fr. July); The Bottom (Arnoldo 925, fl. & fr. Aug.); Ladder Gut, 200 m (Boldingh 2005, fr. July; Stoffers 2824, fl. & fr. Ap.; 2768, fl. & fr. Ap.); lower part of Bottom Mountain, 250 m (Boldingh 1396, fr. July); along road from The Bottom to Crispine (Stoffers 2975, fl. & fr. Ap.).

ST. MARTIN: along road in Cul de Sac (Stoffers 2444, fl. & fr. Ap.).

#### *Sida procumbens* Sw.

SWARTZ, Prodr. 101. 1788; URBAN, Symb. Ant. 4: 390. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913; Fl. D.W. Ind. Isl. 2: 64. 1914; BRITTON & MILLSAUGH, Bahama Fl. 269. 1920; URBAN, Symb. Ant. 8: 416. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 553. 1924; QUESTEL, Fl. Isl. St. Bartholomew 149. 1941; LEON & ALAIN, Fl. Cuba 3: 274. 1953; ARNOLDO, Zakflora 140. 1954; Zakflora 159. 1964; ADAMS, Flowering plants of Jamaica 466. 1972; FOURNET, Fl. Guadeloupe & Martinique 1501. 1978; — *Sida supina* L'HERITIER, Stirp. Nov. 109 bis, t. 52. 1784; GRISEBACH, Fl. Br. W. Ind. Isl. 75. 1859 ['1864']; BOLDINGH, Fl. D.W. Ind. Isl. 1: 128. 1909.

Herb, up to 60 cm high, branched at the base; branches slender, procumbent. Branches, petioles and pedicels densely pubescent to pilose by minute stellate hairs and long, simple patent hairs, the latter sometimes very few; the older parts somewhat glabrescent. Leaves petiolate; blade ovate to ovate-orbicular, obtuse to rounded at the apex, cordate to truncate at the base, up to 2 cm long and 1.8 cm wide, palmately 5—7-veined, margin crenate-serrate, minutely tomentose on both sides, long hairs on the veins beneath; petiole slender, up to 2 cm long. Stipules minute, about 1 mm long, pubescent. Flowers solitary in the leafaxils, pedicellate; pedicels slender, up to 3.5 cm long. Calyx angled with 5 acuminate lobes, pubescent to pilose, about 5 mm long. Petals pale yellow or whitish, 4—6 mm long. Staminal tube short; anthers numerous. Carpels 5, wrinkled, 2-beaked, about 3.5 mm long the beaks included, lateral walls rugose-reticulate, pubescent by short, simple hairs. Seeds glabrous, about 1.5 mm long.

Florida, Bahamas, Greater Antilles and several islands of the Lesser Antilles.

#### Common weed.

ARUBA: along roads in Oranjestad (Stoffers 2133, fl. & fr. Feb.); neighbourhood of Matoguera (Stoffers 1445, fl. & fr. Jan.); Jamanota (Stoffers 1653, fl. & fr. Jan.); Playa (Arnoldo 168, fl. & fr. Dec.); seashore near Savaneta (Boldingh 6557, fr. Jan.); Sivi-Sivi (Boldingh 6306, fr.); slope of Miralamar (Boldingh 6453, fr. Jan.; Stoffers 2185, fl. & fr. Feb.); calcareous hills and plateau near Belashi (Boldingh 6421, fr. Jan.).

BONAIRE: Guatemala Plantation (Stoffers 806, fl. & fr. Nov.); Sabana (Arnoldo 478, fl. & fr. Dec.); Labra Plantation (Stoffers 587, fl. & fr. Nov.); along the coast in Kralendijk (Stoffers 944, fl. & fr. Dec.); Slagbaai Plantation (Stoffers 595, fl. & fr. Nov.); airfield (Stoffers 786, fl. & fr. Nov.); Tanki Marakka (Stoffers 849, fl. Dec.); near Fontein (Stoffers 617, fl. & fr. Nov.); Dos Pos (Stoffers 566, fl. Nov.).

CURAÇAO: road near Wacao (Boldingh 5105, fl. & fr. Nov.); hofje of Siberië (Boldingh 5033, fl. & fr. Nov.); calcareous hills near Mahoema (Boldingh 4818, fl. Oct.); hills near Blein (Boldingh 4770, fl. Oct.); Veeris Berg (Boldingh 4725, fl. & fr. Oct.); from Wacao to Playa Grande (Britton & Shafer 3048, fl. & fr. March); Mundo Nobo (Lens 704, fl. & fr. Dec.); Patattentuin (Burgers 58, fl. & fr. Jan.); Grote Berg (Arnoldo 1916, fl. & fr.

Feb.); Santa Catharina (Stoffers 175, fl. & fr. Oct.); hofje near Jan Thiel (Nagelkerken 319, fl. & fr. Nov.; 386, fl. Jan.); hofje near Weis Afo (Nagelkerken 156, fr. March).

ST. EUSTATIUS: top of the cliff between Gallows Bay and White Wall (Boldingh 761, st.).

ST. MARTIN: near Fort Willem (Boldingh 2793, fl. Aug.; 2542, st. Aug.).

**Sida spinosa L.**

LINNAEUS, Spec. Plant. 683. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 74. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 64. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 128. 1909; URBAN, Symb. Ant. 4: 389. 1910; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913; Fl. D.W. Ind. Isl. 2: 64. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 551. 1914; FAWCETT & RENDLE, Fl. Jamaica 5(3): 111. 1926; QUESTEL, Fl. Isl. St. Bartholomew 148. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 485. 1947; LEON & ALAIN, Fl. Cuba 3: 273. 1953; ARNOLDO, Zakflora 81. 1954; Zakflora 159. 1964; GOODING *et al.*, Fl. Barbados 285. 1965; ADAMS, Flowering plants of Jamaica 467. 1972; FOURNET, Fl. Guadeloupe & Martinique 1500, fig. 707. 1978.

Shrubby, erect herb, up to 1.20 m high, densely pubescent by stellate hairs of different length; older parts glabrous or glabrescent. Leaves petiolate; blade ovate-elliptic, oblong-lanceolate or linear-lanceolate, acute or obtuse at the apex, subcordate, truncate or rounded at the base, up to 4 cm long and 2.5 cm wide, 3(—5)-palmateveined, the margin serrate-crenate, the upper surface more or less covered with very minute stellate hairs, brownish when dry, lower surface stellate-tomentose with prominent venation; petiole slender, up to 1.5 cm long, mostly with 1 or 2 minute spines below the insertion. Stipules linear, about 5 mm long. Flowers solitary in the leafaxils, often with a very short accompanying flowering branchlet in the same axil, at the apex in clusters; pedicels articulate above the middle, up to 7 mm long, accrescent in fruit. Calyx 5-lobed, angled, the lobes triangular, acute or acuminate. Petals yellow or whitish, turning orange, about 9 mm long. Staminal tube short-hairy, about 3 mm long. Carpels 5, trigonous, with 2 short beaks at the apex, the upper part and spines pubescent, lateral walls reticulate, about 4 mm long spines included, the latter 0.5—1 mm long. Seeds trigonous, glabrous, somewhat hairy on the hilum, 2 mm long.

Eastern United States, West Indies south to Barbados, Grenada, and Aruba; continental tropical America and Old World tropics.

Vernacular name: yerba di fuku (Leeward Group).

A weed, especially on moist soil.

BONAIRE: Sabana (Arnoldo 399, fl. & fr. Jan.).

CURAÇAO: hofje of Siberië (Boldingh 5060, fr. Nov.); calcareous hills near Mahoema (Boldingh 4817, fl. & fr. Oct.); seashore near Caracas Baai (Boldingh 4805, fl. & fr. Jan.); Groot St. Joris (Went 1343, fl. & fr. Dec.); near Santa Cruz (Britton & Shafer 3007, fl. & fr. March); Zuikertuintje (Arnoldo 1880, fl. & fr. Jan.); Choloma (Arnoldo 1572, fl. & fr. Jan.); hofje near Weis Afo (Nagelkerken 112, fl. & fr. Feb.); without loc (Aschenberg s.n., st.).

ST. EUSTATIUS: hills near Concordia, 100 m (Boldingh 945, fl. June); Bengalen (Boldingh 617, fl. June).

ST. MARTIN: Cul de Sac (Boldingh 2616, fl. Aug.); near Bethlehem (Boldingh 2664, fl. Aug.).

**Sida jamaicensis L.**

LINNAEUS, Syst. Nat. ed. 10. 1145. 1759; GRISEBACH, Fl. Br. W. Ind. Isl. 74. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 64. 1897; URBAN, Symb. Ant. 8: 414. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 552. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 111. 1926; QUESTEL, Fl. Isl. St. Bartholomew 149. 1941; LEON & ALAIN, Fl. Cuba 3: 273. 1953; ARNOLDO, Zakflora 79. 1954; Zakflora 159. 1964; ADAMS, Flowering plants of Jamaica 467. 1972; FOURNET, Fl. Guadeloupe & Martinique 1500. 1978.

Herb or undershrub, up to 1 m high, branched; all parts more or less stellate pubescent, more or less intermingled by simple hairs. Leaves short-petiolate; blade broad-ovate to ovate-oblong, obtuse or acute at the apex, more or less oblique at the base, up to 5 cm long and 3.5 cm wide, margin serrate-crenate above the base, upper surface sparsely stellate- and more or less simple-haired, the lower surface pubescent, palmately 5-veined; petiole up to 5 mm long. Stipules linear, about as long as the petiole. Flowers solitary in the leafaxils, often with a second flower and a small flowering branchlet appearing later, short-pedicellate; pedicels not articulate, up to 4 mm long. Calyx 5-angled, 8 mm long, its lobes acuminate, 5—6 mm long. Petals obovate, oblique, white to light yellow, slightly exceeding the calyx. Staminaltube somewhat hairy, c. 3 mm long. Stylebranches 5, connate halfway, about 5 mm long. Carpels 5, trigonous, 2-beaked, the lateral walls and lower part of the beak rugose-reticulate and glabrous, the upper part of the back and beaks minutely stellate-puberulous, 4—4.5 mm long; the beaks about 1.5 mm long. Seeds trigonous, hairy on the hilum.

Mexico to Colombia; Jamaica, Cuba, Hispaniola, St. Bartholomew, Guadeloupe, Antigua, Bonaire, Curaçao, and Saba.

In dry woodlands.

BONAIRE: Rooi Sangu near Dos Pos (Arnoldo 442, fl. & fr. Feb.); without loc. (Boldingh s.n., fl. & fr.).

CURAÇAO: Seroe Christoffel (Arnoldo 1800, fl. & fr. Dec.; Stoffers 1206, fl. & fr. Dec.); foot of Seroe Christoffel (Arnoldo 19, fl. & fr. March); id. near Piedra Moelina (Stoffers 1300, fl. & fr. Dec.); hills of Knip Plantation (Stoffers 1112, fl. Dec.; 1146, fl. & fr. Dec.).

SABA: Booby Hill (Arnoldo 794, fl. & fr. Dec.).

**Sida acuta Burman fil.**

BURMAN FIL., Fl. Ind. 147. 1768; emend. K. Schumann, Fl. Bras. 12(3): 326. 1891.

ssp. *carpinifolia* (K. Schum.) Borss.

BORSSUM WAALKES, Blumea 14: 188. 1966; ADAMS, Flowering plants of Jamaica 467. 1972; — *Sida carpinifolia* LINNAEUS FIL., Suppl. 307. 1781; GRISEBACH, Fl. Br. W. Ind. Isl. 73. 1859 ['1864'];

DUSS, Fl. phan. Ant. franç. 63. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 127. 1909; BRITTON & MILLSPAUGH, Bahama Fl. 268. 1941; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 552. 1924; QUESTEL, Fl. Isl. St. Bartholomew 147. 1941; — *Sida acuta* BURMAN FIL. var. *carpinifolia* (L. F.) K. SCHUMANN, Fl. Bras. 12(3): 326. 1891; — as *Sida acuta* BURMAN FIL., Fl. Ind. 147. 1768; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; URBAN, Symb. Ant. 4: 389. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 274. 1913; Fl. D.W. Ind. Isl. 2: 64. 1914; FAWCETT & RENDLE, Fl. Jamaica 5(3): 119. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 80. 1929; 486. 1947; LEON & ALAIN, Fl. Cuba 3: 273. 1953; ARNOLDO, Zakflora 76. 1954; Zakflora 158. 1964; GOODING *et al.*, Fl. Barbados 284. 1965.

Herb or undershrub, up to 1—1.5 m high, more or less densely covered with simple hairs and minute stellate hairs, glabrescent. Leaves petiolate; blade ovate to oblong, acute at the apex, rounded or acute at the base, 2—15 cm long and 0.5—6 cm wide, 3—5-palmately veined, margin finely serrate, the teeth ending in a simple hair, both surfaces with simple hairs and minute stellate hairs, glabrescent, lower surface more densely covered than the upper surface; petiole up to 8 mm long. Stipules conspicuous, linear to lanceolate, unequal in a pair, 3-veined, ciliate, 7—15 mm long. Flowers in clusters of up to 8 but mostly solitary or a few together in the leafaxils, pedicels articulate below the middle but not always conspicuous, as long as or longer than the subtending petiole. Calyx 5-angled, about 7 mm long, slightly accrescent in fruit, lobes acuminate, more or less minutely stellate-pubescent and with simple hairs on margins and veins. Petals obovate, oblique, ciliate at the base, light yellow or white, 8—10 mm long. Staminal tube hairy, rarely glabrous, 2 mm long; filaments numerous. Stylebranches connate at the base. Carpels 6—10, trigonous with 2 longitudinal crests terminating into a short beak up to 1 mm long; back and lateral walls reticulate, glabrous, towards the apex and beak hairy, 2—2.5 mm long. Seeds trigonous-subrotund, hairy at the hilum, 1.5—2 mm long.

South-eastern United States, Bermuda, West Indies, continental tropical America and Old World tropics.

In open shrub vegetations and on roadsides.

CURAÇAO: without loc. (Aschenberg s.n., fr.).

SABA: Ladder Gut (Boldingh 2018, fl. & fr. July); Windwardside (Boldingh 1901, st. July); between The Bottom and Mary's Point (Boldingh 1503, fl. & fr. July); along roads between The Bottom and Windwardside (Boldingh 1340, fl. & fr. July); top of the cliff near the sea-side of Booby Hill (Boldingh 1601, fl. & fr. July); gut between Hellsgate and Mastic Gut, 300—400 m (Boldingh 2028, fl. July); The Bottom (Arnoldo 554, fl. & fr. Aug.); Windwardside (Arnoldo 585, fl. & fr. Aug.); Booby Hill (Stoffers 4271, fl. & fr. Aug.); Bottom Hill (Stoffers 3145, fl. & fr. May); Great Rendez-Vous (Stoffers 3067, fl. & fr. Ap.).

ST. EUSTATIUS: along roads in Oranjestad (Boldingh 568, fl. & fr. June); in a garden in Oranjestad (Boldingh 91, fl. May); along roads in Cultuurvlakte (Stoffers 3805, st. July; 3791, fl. & fr. July); without loc. (van Groll-Meyer 16, fl.).

ST. MARTIN: from Guana Bay to Philipsburg (Boldingh 2439, fr. Aug.); lower part of Milldrum Hill (Boldingh 3170, fr. Sept.); Prince's Quarter (Arnoldo 3175, fl. & fr. Dec.); hills on the northern side of Cul de Sac (Stoffers 2614, fl. & fr. Ap.).



**Sida cordifolia L.**

LINNAEUS, Spec. Plant. 684. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 76. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 67. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 128. 1909; URBAN, Symb. Ant. 4: 391. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 274. 1913; BRITTON & MILLSAUGH, Bahama Fl. 509. 1920; URBAN, Symb. Ant. 8: 416. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 553. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 116. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 82. 1929; QUESTEL, Fl. Isl. St. Bartholomew 148. 1941; LEON & ALAIN, Fl. Cuba 3: 274. 1953; GOODING *et al.*, Fl. Barbados 286. 1965; ADAMS, Flowering plants of Jamaica 467. 1972; FOURNET, Fl. Guadeloupe & Martinique 1502. 1978.

Undershrub, up to 1 m high; stems, petioles and pedicels more or less densely tomentose by minute stellate hairs intermingled with longer simple hairs. Leaves petiolate; blade ovate to broadly ovate, acute or obtuse at the apex, cordate or truncate at the base, margin irregularly serrate to crenate, 5—7-palmateveined, upper surface tomentose to velutinous, lower surface more densely tomentose to velutinous, veins prominent beneath; petiole up to 3 cm long. Stipules linear, tomentose, up to 10 mm long. Flowers solitary or in clusters in the leafaxils or terminal, sometimes with a short flowering branchlet in the same axil; pedicels short, jointed above the middle, about 5 mm long, accrescent in fruit. Calyx 5-angled, 8 mm long; lobes acute to acuminate, velutinous, 3—4 mm long. Petals obovate-oblique, white or light yellow, ciliate near the base, about 10 mm long. Staminaltube with a few simple hairs. Stylebranches connate below the middle; stigmas capitate. Mericarps 7—12, trigonous, with 2 beaks at the apex; beaks retrorsely hispid with simple hairs, about 2—3 mm long; upper part of the back stellate-haired, lower part and lateral walls reticulate (4—) 6.5—7 mm long the beaks included. Seeds semirotund, glabrous, hairy at the hilum, 2—2.5 mm long.

Common in the tropics and subtropics.

**Key to the varieties:**

1. Mericarps with erect aristate retrorsely hispid awns; leaves up to 10 × 6 cm ..... *var. cordifolia*  
Mericarps with very short beaks or awns almost wanting; leaves up to 7 × 5 cm; plant more robust than in the typical variety..... *var. althaeifolia*

**var. cordifolia**

SABA: Hellsgate (Boldingh 1695, fl. & fr. July); road from Windwardside to Hellsgate (Boldingh 1662, fl. & fr. July); road to Windwardside (Arnoldo 705, fl. & fr. Aug.); Booby Hill, 100 m (Arnoldo 3283, fl. & fr. Dec.); gut near St. Johns (Stoffers 2992, fl. & fr. Ap.); between The Bottom and Mary's Point (Stoffers 3487, fl. & fr. June); Jenkins Hill near St. Johns (Stoffers 3149, fl. & fr. May); The Bottom (Stoffers 3299, fl. & fr. May).

ST. EUSTATIUS: Bengalen (Boldingh 623, fr. June); The Quill (Stoffers 4012a, fl. & fr. July); between Oranjestad and Fort de Windt, on the cliff (Stoffers 3523, fl. & fr. July; 3497, fl. July); along roads in Oranjestad (Stoffers 3868, fl. & fr. July); without loc. (van Groll-Meyer 182, fl.).

ST. MARTIN: from Philipsburg to Belvedere (Boldingh 2559, fl. & fr. Aug.); Naked Boy Hill, 50—200 m (Boldingh 2679, fl. & fr. Aug.); from Belvedere to Oyster Pond (Boldingh 3048, fl. Aug.); along roads from Grande Case to Marigot (Boldingh 3094, fl. Nov.); Prince Quarter (Coll. George s.n. sub Boldingh 2462, fl. & fr. Aug.); Philipsburg (Arnoldo 1332, fl. & fr. March); without loc. (Boldingh 3597, fr; 3594, fl. & fr.).

var. *althaeifolia* (Sw.) Griseb.

GRISEBACH, Fl. Br. W. Ind. Isl. 76. 1859 ['1864']; ADAMS, Flowering plants of Jamaica 467. 1972; — *Sida althaeifolia* SWARTZ, Prodr. 101. 1788.

SABA: along path from The Bottom to Crispine (Stoffers 2950, fl. Ap.); gut near St. Johns (Stoffers 3017, fl. Ap.).

ST. EUSTATIUS: from Schotsen Hoek to Little Mountains (Stoffers 3542, fl. July); Little Mountains (Stoffers 3002, 3532, fl. July).

ST. MARTIN: Pointe Blanche (Stoffers 2562 fl. & fr. Ap.); hills along western side of Cul de Sac, north of Sentry Hill (Stoffers 2570, fl. & fr. Ap.; 2706, fl. Ap.).

*Sida salviifolia* C. Presl

PRESL, Reliq. Haenk. 2: 110. 1835; FAWCETT & RENDLE, Fl. Jamaica 5(3): 117. 1926; QUESTEL, Fl. Isl. St. Bartholomew 149. 1941; ARNOLDO, Zakflora 81. 1954; Zakflora 159. 1964; ADAMS, Flowering plants of Jamaica 468. 1972; FOURNET, Fl. Guadeloupe & Martinique 1501. 1978; — *Sida spinosa* LINNAEUS var. *angustifolia* (LAM.) GRISEBACH, Fl. Br. W. Ind. Isl. 74. 1859 ['1864']; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913; Fl. D. W. Ind. Isl. 2: 64. 1914; — *Sida erecta* MACFADYEN, Fl. Jamaica 1: 80. 1837; URBAN, Symb. Ant. 4: 388. 1910; Symb. Ant. 6: 92. 1909; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 551. 1924.

Shrubby, erect herb, not much branched, tomentose by stellate hairs, up to 90 cm high; younger parts pilose. Leaves short-petiolate; blade oblong or lanceolate to linear, obtuse or acute at the apex, crenate to rounded at the base, margin serrulate, 3-palmateveined, up to about 4.5 cm long and 1 cm wide; petiole up to 1.3 cm long. Stipules linear, about 5 mm long. Flowers solitary or a few together in the leafaxils and in terminal clusters, pedicellate; pedicels short but usually longer than the petiole. Calyx angled, 5—6 mm long; lobes acuminate, with prominent central and marginal veins, tomentose. Petals white to light yellow, slightly exceeding the calyx. Staminaltube sparsely stellate-haired, short. Mericarps 7—10, with 2 long beaks at the top; beaks covered with retrorsely hispid hairs; back and lateral walls rugose-reticulate, about 4 mm long, the beaks included. Seeds somewhat rounded, with a few hairs near the hilum.

Mexico, Columbia, Venezuela, Puerto Rico & Virgin Islands, Jamaica; Aruba, Bonaire, and Curaçao.

Vernacular names: basora di pleinchi, funfun homber (Leeward Group).

ARUBA: calcareous soil near Oranjestad (Boldingh 6234, fl. & fr. Dec.); Sivi Sivi (Boldingh 6321, fl. & fr.); slope of Miralamar (Boldingh 6452, st., 6445, st. Jan.); along road in the neighbourhood of Noord (Stoffers 1542, fl. & fr., 1584, st. Jan.); along road in Oranjestad

(Stoffers 2040, fr., 2131, fl. & fr. Feb.); along the road from Noord to Westpunt (Stoffers 1780, fl. & fr. Jan.); neighbourhood of Matoguerai (Stoffers 1444, fl. & fr. Jan.); Andicouri (Stoffers 1815, fl. & fr. Jan.); Savaneta (Stoffers 1758, fl. & fr. Jan.); in garden in Savaneta (Stoffers 1913, fl. Jan.); Companashi (Arnoldo 140, fl. & fr. Dec.); eastern side of Sabana Serveta (Stoffers 1401, fr. Jan.).

**BONAIRE:** Guatemala Plantation (Stoffers 805, fl. & fr. Nov.); Slagbaai Plantation (Stoffers 596, fl. & fr. Nov.); neighbourhood of Rincón (Boldingh 7085, fl. & fr., 7101, fl. & fr. Jan.).

**CURAÇAO:** hofje of Siberië (Boldingh 5054, fl. & fr.; 5195, fr.); Mahoema (Boldingh 4815, fl. & fr. Oct.); near San Pedro (Boldingh 5307, fl. & fr. Nov.); without loc. (Aschenberg s.n., fl.).

### ***Sida rhombifolia* L.**

LINNAEUS, Spec. Plant. 684. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 74. 1859 ['1864']; Duss, Fl. phan. Ant. franç. 65. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 128. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; URBAN, Symb. Ant. 4: 390. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 275. 1913; URBAN, Symb. Ant. 8: 415. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 552. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 117. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 81. 1929; QUESTEL, Fl. Isl. St. Bartholomew 148. 1941; LEON & ALAIN, Fl. Cuba 3: 274. 1953; GOODING *et al.*, Fl. Barbados 285. 1965; ADAMS, Flowering plants of Jamaica 468. 1972; FOURNET, Fl. Guadeloupe & Martinique 1499. 1978.

#### **var. *rhombifolia***

Herb or small shrub, usually much-branched, minutely stellate pubescent, sometimes also hirsute with mostly simple hairs, 30—120 cm high; older parts less densely pubescent than the younger parts; branches slender. Leaves short-petiolate; blade variable, rhombic-ovate to lanceolate, acute or obtuse at the apex, cuneate to obtuse at the base, 2—8 cm long and up to 3.5 cm wide, palmately 3(—5)-veined, margin serrate above the base, upper surface dark-green, discolouring when dry, sparsely stellate-haired to almost glabrous, lower surface greyish, stellate-tomentose; petiole 2—5 mm long. Stipules linear, about as long as the petiole. Flowers solitary in the axils of the leaves; pedicels up to 3.5 cm long, articulate above the middle, enlarging in fruit. Calyx 5-angled, 6—7 mm long, somewhat enlarging in fruit; lobes short-acuminate, with a thickened, yellowish midrib and marginal ribs at the base. Petals broadly ovate, yellow or sometimes orange or white, slightly exceeding the calyx, 7—8.5 mm long. Staminal tube sparsely and minutely stellate-pubescent, c. 3.5 mm long. Carpels 7—14, 2-beaked at the apex, 2.2—5.5 mm long, glabrous or with minute stellate hairs; beaks about 1—4 mm long. Seeds subrotund, glabrous, or with a few stellate hairs on the hilum.

South-eastern United States, Bermuda, and West Indies; continental tropical America and Old World tropics.

Weed in wet areas.

**SABA:** from Hellsgate to Sandy Cruz (Stoffers 3169a, fl. & fr. May); Windwardside (Arnoldo 584, fr. Aug.; Boldingh 2143, fr. July); Rendez-Vous (Stoffers 3258a, fl. May); between Crispine and Small Rendez-Vous (Stoffers 3066, fl. Ap.).

**ST. MARTIN:** Mount Paradise (Boldingh 3203, fr. Sept.).

**Bastardia** Kunth, in Humboldt, Bonpland & Kunth, Nov. Gen. & Spec. ed. quart. 5: 254. 1822

Herbs or shrubs, indumentum by simple, stellate and sometimes glandular hairs. Leaves petiolate; blade simple, unlobed or slightly palmately 3-lobed, cordate at the base, margin crenate to dentate. Flowers solitary or a few together in the leafaxils, pedicellate. Epicalyx wanting. Calyx with 5 lobes, deeply incised. Petals white to yellow, adnate to the base of the staminal tube. Staminal tube included, ventricose below with anthers on the top. Ovary 5—8-locular, the carpels in a single whorl; stylebranches as many as mericarps; stigmas capitate. Ovules one in each locule. Fruit a loculicidally dehiscent capsule of 5—8 beakless or apically awned mericarps.

Six species in the West Indies, Central and South America.

**Bastardia viscosa** (L.) Kunth

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 5: 256. 1822; GRISEBACH, Fl. Br. W. Ind. Isl. 80. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 69. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; URBAN, Symb. Ant. 4: 393. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 276. 1913; Fl. D. W. Ind. Isl. 2: 65. 1914; BRITTON & MILLSAUGH, Bahama Fl. 270. 1920; URBAN, Symb. Ant. 8: 419. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 556. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 120. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 83. 1929; QUESTEL, Fl. Isl. St. Bartholomew 150. 1941; LEON & ALAIN, Fl. Cuba 3: 268. 1953; ARNOLDO, Zakflora 77. 1954; Zakflora 156. 1964; GOODING *et al.*, Fl. Barbados 279. 1965; ADAMS, Flowering plants of Jamaica 468. 1972; FOURNET, Fl. Guadeloupe & Martinique 1497. 1978; — *Sida viscosa* LINNAEUS Syst. Nat. ed. 10.1145.1759.

Perennial herb or subshrub, up to 1 m high; stems, petioles, and pedicels usually densely glandular and moderately to densely pubescent with patent, simple hairs to 3 mm long, and sparse stellate hairs. Leaves alternate; blades ovate, acute to acuminate at the apex, cordate at the base, 2—6.5 (—8) × 2—5 cm, unlobed, the margin entire to serrulate, or sinuate-denticulate, sparsely to densely stellate-tomentose; petioles slender, about as long as the blade or shorter. Flowers solitary or few together on a peduncle in the axils of the leaves; peduncle elongate, articulate at the top, filiform, usually longer than the petioles; pedicels often very small. Calyx 4—5 mm long, campanulate, its lobes oblong-ovate, tomentose, 2.5—3 mm long. Petals pale to deep yellow or yellow-orange, 5—6 mm long, obovate. Staminal column divided into several to many filaments at the top, to 2.5 mm long; anthers about 20, small. Ovary 5-locular; stylebranches 5; stigmas capitate. Capsule depressed-globose, 5-angled, beakless, copious stellate; mericarps asymmetrical, ovoid, chartaceous, 3.5—4 mm long, lateral walls of adjacent mericarps remaining coherent, the valves falling away together. Seeds rounded-triangular, 2 mm long and wide, brownish, silky puberulent.

From Texas through Mexico and Central America south to Argentine and Peru; West Indies and Galápagos Islands.

In open vegetations and along roadsides.

ARUBA: slope of Miralamar (Boldingh 6457, st. Jan.); Rooi near Fontein (Arnoldo 336, fl. Dec.); vicinity of Noord (Stoffers 1553, fl. & fr. Jan.); Playa (Arnoldo 177, fl. & fr. Dec.); Jamanota (Suringar s.n., fr. Feb. [L]).

**BONAIRE:** vicinity of Rincón (Boldingh 7006, fl. & fr. Jan.); slope of Caracao (Boldingh 7305, fl. & fr. Feb.); Fontein Plantation (Stoffers 558, fl. & fr. Nov.; Suringar s.n., Feb. [L]); Brandaris (Suringar s.n., st. Feb. [L]); Brandaris (Suringar s.n., st. Feb. [L]).

**CURAÇAO:** hofje of Barber (Boldingh 5236, fl. & fr. Nov.); Anthony Berg (Boldingh 5157, fl. & fr. Nov.); hofje of Siberië (Boldingh 5031, fl. & fr. Nov.); hills near Blein (Boldingh 4760, fl. & fr. Oct.); from Cas Chiquito to Veeris Berg (Boldingh 4720, fl. & fr. Oct.); Veeris (Suringar s.n., fl. & fr. Jan. [L]); hofje of Valentijn (Boldingh 5354, fl. & fr. Nov.); Fort Nassau (Suringar s.n., fr. Jan. [L]); Patattentuin (Burgers 67, fl. & fr. Jan.); Santa Marta (Britton & Shafer 2976, fl. & fr. March); Santa Catharina (Stoffers 178, fl. & fr. Oct.); Cholome (Stoffers 6, fl. & fr. Nov.); Hato (Stoffers 55, fl. & fr. Sept.); Willemstad (Arnoldo 33, fl. & fr. March); abandoned hofje of Jan Thiel (Nagelkerken 365, fr. Jan.).

**ST. EUSTATIUS:** Bengalen (Boldingh 627, st. Jan.).

**ST. MARTIN:** Mount Paradise (Boldingh 3204, fl. Sept.); along road from Bethlehem to Mount Chambord (Boldingh 295, fr. Aug.); Rolands Canal (Stoffers 2264, fl. & fr. March).

**Malachra** Linnaeus, Syst. Nat. ed. 12. 458. 1767

Herbs or shrubs often with hispid indumentum. Leaves petiolate; blades palmately lobed or sometimes unlobed. Flowers in axillary or terminal subsessile heads which are subtended by 3 large leafy bracts, each bract with 2 filiform outgrowths at the base. Epicalyx wanting. Calyx campanulate, 5-lobed. Petals adnate to the base of the staminal tube, variously coloured. Staminal tube included by the corolla, anthers on the outside of the tube on short filaments. Stylebranches twice as many as the carpels; stigmas capitate. Fruit a schizocarp, subglobose. Mericarps 5, glabrous or pubescent, each with one seed.

About 8 species of American origine, now also distributed in the Old World tropics.

**Malachra alceifolia** Jacq.

JACQUIN, Coll. Bot. 2: 350. 1789; GRISEBACH, Fl. Br. W. Ind. Isl. 80. 1859 [‘1864’]; DUSS, Fl. phan. Ant. franç. 70. 1897; BOLDINGH, Fl. Ned. W. Ind. Eil. 276. 1913; URBAN, Symb. Ant. 4: 394. 1910; BOLDINGH, Fl. D.W. Ind. Isl. 2: 65. 1914; URBAN, Symb. Ant. 8: 420. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 557. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 124. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 83. 1929; LEON & ALAIN, Fl. Cuba 3: 243. 1953; ARNOLDO, Zakflora 149. 1954; Zakflora 158. 1964; GOODING *et al.*, Fl. Barbados 281. 1965; ADAMS, Flowering plants of Jamaica 470. 1972; FOURNET, Fl. Guadeloupe & Martinique 1504. 1978.

Woody herb or undershrub up to 2.5 m high; stems, branches, petioles, stipules and bracts more or less densely hispid with long simple or forked hairs and a copious to sparse indumentum, restricted to bands on branches and petioles, of minute stellate hairs. Leaves petiolate; blade nearly orbicular to ovate, sometimes a little broader than long, mostly shallowly 3—5 (—7)-lobed or sometimes unlobed, subcordate to obtuse at the base, margin irregularly serrate, crenate to dentate with sparsely minute stellate hairs and sometimes hispid hairs on the veins, up to 8 cm long and broad; petiole as long as

the blades. Stipules filiform, forked or entire, up to 20 mm long. Flowers in axillary few-flowered subsessile or up to 5 cm long pedunculate heads. Bracts sessile to short-petiolate, triangular to ovate, acute to acuminate at the apex, cordate at the base, veins prominent beneath, hairs pustular at the base, in fruit brownish, scarious, up to 2 cm long, subtended by 2 filiform outgrowths. Calyx narrow-campanulate with deep acute lobes, whitish with brownish veins, hispid, up to 8 mm long. Petals white to yellow, puberulous on the outside, 11 mm long. Staminal tube with toothed apex, hairs longer and denser at the base of the c. 7 mm long tube. Mericarps reddish-veined, glabrous or puberulous, 3—3.5 mm long and 2 mm wide. Seeds dark-brown, glabrous or with some hairs about the hilum, 2.5 mm long.

West Indies (except Bahamas), continental tropical and subtropical America, now naturalized in parts of the Old World tropics.

Herb of wet sites.

Vernacular name: giambo shimaron (Leeward Group).

ARUBA: hofje of Fontein (Boldingh 6475d, fl. & fr. Jan.; Suringar s.n., fl. & fr. Jan. [L]); without loc. (Boldingh s.n., fl. & fr.; Koolwijk s.n. sub Suringar s.n., fl. [L]).

BONAIRE: Sabana (Arnoldo 390, fl. & fr. Jan.); without loc. (Boldingh 7325, fl. & fr.).

CURAÇAO: hofje of Barber (Boldingh 5229, fl. Nov.); hofje of Siberië (Boldingh 5047, fl. Dec.); Noordkant Plantation (Stoffers 157, fl. & fr. Oct.); Groot Santa Marta (Arnoldo 1906, fl. & fr. Jan.); Tanki Marta Koosje (Burgers 137, fl. & fr. Feb.); Museum Garden (Arnoldo 1822, fl. & fr. Jan.); without loc. (Aschenberg s.n., fl.).

*Urena* Linnaeus, Spec. Plant. 692. 1753

Herbs or shrubs. Leaves petiolate; blade lobed, palmately veined; main veins provided with a narrow gland at the base. Flowers solitary or a few together in the leafaxils, pedicellate. Epicalyx campanulate, 5-parted. Petals pink. Staminal tube with anthers on the outside. Stigmas 10. Fruit an indehiscent schizocarp. Seeds trigonous-reniform.

Only one species, general in tropical and subtropical regions.

*Urena lobata* L.

LINNAEUS, Spec. Plant. 692. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 81. 1859 [\*1864\*]; DUSS, Fl. phan. Ant. franç. 70. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 129. 1909; URBAN, Symb. Ant. 4: 395. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 276. 1913; BOLDINGH, Fl. D.W. Ind. Isl. 2: 65. 1914; URBAN, Symb. Ant. 8: 421. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 558. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 126. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 84. 1929; LEON & ALAIN, Fl. Cuba 3: 68. 1953; ARNOLDO, Zakflora 68. 1954; Zakflora 160. 1964; GOODING *et al.*, Fl. Barbados 287. 1965; ADAMS, Flowering plants of Jamaica 470. 1972; FOURNET, Fl. Guadeloupe & Martinique 1506, fig. 709. 1978.

Shrub or shrubby herb, up to 1.5 m high, all parts covered with stellate hairs intermingled with simple hairs. Leaves petiolate; blade palmately 3-lobed with the terminal lobe much larger than the lateral ones, lobes obtuse, base rounded or cordate or narrowed,

4—7.5 cm long, margin serrate to dentate, tomentose by stellate hairs beneath, sparsely stellate-haired above, smaller leaves often ovate in outline and not or only slightly lobed, midvein provided with a large narrow gland on the basal part on the lower side; petioles 1.5—7.5 cm long. Stipules lanceolate to linear. Flowers solitary or sometimes a few together in the leafaxils; pedicels 1—6 mm long. Epicalyx 5-parted nearly to the base, up to 6 mm long. Calyx about as long as the epicalyx-lobes, narrowly ovate, acute. Petals free or connate at the very base, obovate-oblique, pink and provided with a dark red spot at the base, 1.5—2.5 cm long. Staminal tube about as long as the petals. Style terminated by 10 hairy stigmas. Mericarps provided with glochidiate spines, 1-seeded. Fruit up to 6 mm long. Seeds 2—3 mm long.

Florida, West Indies; continental tropical America and Old World tropics.

SABA: slope of The Mountain (Boldingh 1799, fr. July; 1603, fr. July); between The Bottom and Mary's Point (Boldingh 1559, fl. & fr. July; 1472, fr. July); road to Hellsgate (Arnoldo 1350, fl. & fr. March); Windwardside, 500 m (Arnoldo 3230, fl. & fr. Dec.); road to The Mountain (Arnoldo 766, fr. Aug.; 946, fr. Aug.); between Crispine and Small Rendezvous, 375–450 m (Stoffers 2939, fl. & fr. Ap.); between Hellsgate and Sandy Cruz, 500–600 m (Stoffers 3170, fl. & fr. May); Castle Hill, seaside, 300–350 m (Stoffers 4166, st. Aug.); between The Bottom and The Saddle, 220–300 m (Stoffers 3100, fl. & fr. Aug.); Small Rendezvous, 350–380 m (Stoffers 3357, fl. & fr. May); without loc. (Suringar s.n., fl. & fr. Ap. [L]).

*Pavonia* Cavanilles, Diss. 2: (App. 2) 1786; 3: 132. 1787. Nom. cons. 5007

Herbs or shrubs, glabrous or hairy by stellate hairs. Leaves petiolate; blades mostly dentate. Flowers solitary in the leafaxils or in terminal clusters, pedicellate. Epicalyx of 5—8 bracteoles. Calyx campanulate or cupuliform, 5-lobed. Petals adnate to the base of the staminal tube, variously coloured. Staminal tube shorter to longer than the corolla with anthers on the outside, usually on the upper part only, toothed. Stylebranches twice as many as carpels; stigmas capitate or discoid. Fruit a schizocarp; mericarps 5, blunt or awned, glabrous or not, each with one seed.

Over 200 species in tropical and subtropical regions but particularly well represented in South America.

*Pavonia spinifex* (L.) Cav.

CAVANILLES, Monad. Cl. Diss. Dec. 3: 133, t. 45, f. 2. 1787; GRISEBACH, Fl. Br. W. Ind. Isl. 82. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 72. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 129. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 236. 1909; URBAN, Symb. Ant. 4: 396, 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 277. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 270. 1920; URBAN, Symb. Ant. 8: 422. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 559. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 128. 1926; QUESTEL, Fl. Isl. St. Bartholomew 150. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 487. 1947; LEON & ALAIN, Fl. Cuba 3: 247. 1953; GOODING *et al.*, Fl. Barbados 284. 1965; ADAMS, Flowering plants of Jamaica 471. 1972; FOURNET, Fl. Guadeloupe & Martinique 1507, fig. 710. 1978; — *Hibiscus spinifex* LINNAEUS, Syst. Nat. ed. 10. 1149. 1759.

Shrub, up to 5 m high but usually much smaller, sparsely stellate-haired. Leaves petiola-

te; blade broadly ovate to oblong-ovate, acute to acuminate at the apex, cordate to obtuse at the base, palmately 3—5-veined, up to 12 cm long and 7 cm wide, margin irregularly crenate-dentate, sparsely stellate-haired beneath and almost glabrous above except the veins; petiole up to 5 cm long. Stipules subulate, linear, up to 13 mm long. Flowers solitary in the leafaxils, pedicellate; pedicel up to 5 cm long. Epicalyx of 5—8 bracteoles, these linear-lanceolate, acute, up to 13 mm long, 1.3 mm wide. Calyx cupuliform, lobed to below the middle, up to 13 mm long, the lobes ovate-lanceolate, acute to acuminate. Epicalyx and calyx ciliate by simple and stellate hairs. Petals yellow, up to 3 cm long. Staminal tube with anthers in the upper half, 5-toothed, equaling or a little longer than the corolla; filaments 2—2.5 mm long. Stigmas capitate and fimbriate. Schizocarp of 3-angled mericarps with 3 longitudinal ribs on the back and each bearing a stout barbed awn, 14 mm long the awn included, 1-seeded. Seeds up to 4 mm long.

South Carolina to Florida, Bermuda, West Indies, continental tropical America.

Vernacular name: ginger bush (Windward Group).

**SABA:** Lower part of the Bottom Mountain, 250 m (Boldingh 1401, fl. & fr. July); Windwardside (Boldingh 1592, fl. & fr. July; Arnaldo 635, fl. & fr. Aug.); Mountain near Windwardside, 400—475 m (Stoffers 3344, fl. May); between Windwardside and Hellsgate, 400—450 m (Stoffers 3365, fr. May); Ladder Gut, 100—200 m (Stoffers 2794, fl. Ap.; 2756, fl. Ap.; 2812, fr. Ap.); Great Rendez-Vous, 475 m (Stoffers 3084, fl. Ap.); slope of The Mountain near Rendez-Vous, 550 m (Stoffers 4265, fl. Aug.); idem 600—680 m (Stoffers 3244, fl. May); between The Bottom and Crispine, 200—350 m (Stoffers 3026, fl. & fr. Ap.); from Crispine to Rendez-Vous (Suringar s.n., fl. & fr. Ap. [L]); Middle region (Suringar s.n., fl. Ap. [L]).

**ST. EUSTATIUS:** slope of The Quill, 200 m (Arnaldo 3196, fl. & fr.).

**ST. MARTIN:** Mount Paradise (Boldingh 3302, fl. Sept.); lower part of Mount Paradise (Boldingh 3188, fl. Sept.); Colombier (Arnaldo 1340, fl. & fr. Jan.); Marigot Hill to Marigot, 200—0 m (Boldingh 2650, fl. Aug.).

*Hibiscus* Linnaeus, Spec. Plant. 693. 1753. Nom. cons. 5013

Herbs, shrubs or trees with an indumentum of simple or stellate hairs or plants glabrous. Leaves petiolate; blade simple to palmately-3-lobed, palmately-veined, sometimes with a gland on central veins at the lower leaf-surface. Flowers solitary or a few together in the leafaxils, pedicellate, often showy. Bracteoles usually numerous, mostly united and forming an epicalyx, sometimes adnate to the calyx, persistent. Calyx 5-lobed, the midvein of each lobe sometimes with a gland at the base. Petals adnate to the base of the staminal tube, various in colour. Staminal tube bearing anthers on the outside throughout or only in the upper half; filaments very short to long; anthers numerous. Ovary 5-locular; stylebranches 5; stigmas capitate. Ovules 3—many in each locule. Fruit a loculicidally dehiscent capsule. Seeds reniform, 2—numerous.

A very large genus, widely distributed in the tropical and subtropical regions, and with a few species in the temperate regions; many species are cultivated as ornamentals.



**Key to the species:**

- Tree or large shrub; leaves orbicular, acuminate at the apex, cordate at the base; mostly in seashore situations. . . . . *H. tiliaceus*  
Herb or shrub; leaves triangular to deltoid, stellate-pubescent; corolla 1.2—2 cm long  
. . . . . *H. brasiliensis*

***Hibiscus tiliaceus* L.**

LINNAEUS, Spec. Plant. 694. 1753; BOLDINGH, Fl. D.W. Ind. Isl. 1: 130. 1909; URBAN, Symb. Ant. 4: 398. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 278. 1913; URBAN, Symb. Ant. 8: 424. 1920; FAWCETT & RENDLE, Fl. Jamaica 5(3): 140. 1926; LEON & ALAIN, Fl. Cuba 3: 254. 1954; Arnoldo, Gekw. & nutt. pl. Ned. Ant. 186. 1964; ADAMS, Flowering plants of Jamaica 475. 1972; FOURNET, Fl. Guadeloupe & Martinique 1509, fig. 711. 1978; — *Paritium tiliaceum* (L.) A. JUSSEU, in ST. HILAIRE, Fl. Bras. Merid. 1: 256. 1827; GRISEBACH, Fl. Br. W. Ind. Isl. 86. 1859 [‘1864’]; DUSS, Fl. phan. Ant. franç. 79. 1897; BRITTON & MILLSAUGH, Bahama Fl. 273. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 564. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 87. 1929; QUESTEL, Fl. Isl. St. Bartholomew 150. 1941; GOODING *et al.*, Fl. Barbados 283. 1965.

Shrub or tree, up to 10 m high; branches and petioles stellate-tomentose. Leaves long-petiolate; blades orbicular or nearly so, acuminate at the apex, broadly cordate at the base, up to 20 cm long and wide, margin entire or crenulate, main veins 3—5, with an elongate gland near the base, lower surface stellate-tomentose, upper surface glabrescent. Stipules large, oblong-ovate, acute, stellate-tomentose, up to 20 mm long, caducous, leaving a conspicuous scar. Flowers solitary or a few together in the axils of the leaves, on pedicels up to 1.8 cm long. Epicalyx cupuliform with 8—10 acute lobes, stellate-tomentellous, up to 20 mm long. Calyx up to 35 mm long with 5 acute lobes, the lobes 3-veined, the central one prominent, stellate tomentose. Petals obovate, rounded at the apex, 4—8 cm long, yellow turning orange, red or greenish, with minute stellate hairs. Staminal tube antiferous throughout, 5-toothed, shorter than the corolla, up to 6 cm long. Style up to 7 cm long, with 5 branches; stigmas fimbriate. Capsule ovoid, apiculate, stellate-tomentose, up to 4 cm long. Seeds reniform with stellate hairs, 4—4.5 mm long.

Florida, Bermuda, West Indies; continental tropical America and Old World tropics.

Along seashores.

Vernacular name: waru (Windward Group).

CURAÇAO: Cas Cora (Arnoldo 965, fl. Sept.).

ST. EUSTATIUS: near Concordia Bay (Boldingh 1089, fl. June).

ST. MARTIN: Mount Paradise, 300—400 m (Boldingh 3326, st. Sept.).

***Hibiscus brasiliensis* L.**

LINNAEUS, Spec. Plant. ed. 2. 977. 1762; URBAN, Symb. Ant. 4: 398. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 277. 1913; Fl. D.W. Ind. Isl. 2: 65. 1914; URBAN, Symb. Ant. 8: 424. 1920; BRITTON

& WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 561. 1924; FAWCETT & RENDLE, *Fl. Jamaica* 5(3): 136. 1929; QUESTEL, *Fl. Isl. St. Bartholomew* 151. 1941; LEON & ALAIN, *Fl. Cuba* 3: 256. 1953; ARNOLDO, *Zakflora* 78. 1954; *Zakflora* 157. 1964; *Gekw. en nutt. pl. Ned. Ant.* 477. 1972.

Herb or shrub up to 1.5 m high, almost glabrous or sparsely appressed stellate haired, sometimes with a longitudinal band of woolly simple hairs on the branches, changing side at each node. Leaves petiolate; petiole slender, indumentum of sparsely stellate hairs and adaxially a band of mostly simple hairs up to 2 cm. Stipules linear-subulate, up to 6 mm long; blade triangular, deltoid to ovate, sometimes slightly 3-lobed, acute to subacuminate at the apex, obtuse to truncate at the base, up to 9 cm long, margin irregularly serrate, pubescent to glabrescent with appressed simple but mostly stellate hairs, hispidulous. Flowers solitary in the leafaxils, pedicellate. Epicalyx of about 10 bracteoles, these linear, acute, appressed stellate and simple hispidulous equaling or longer than the calyx, up to 2.5 cm long. Calyx up to 12 mm long, the 5 lobes ovate, acute, hispidulous. Petals crimson or white, 1.2—2 cm long, appressed stellate hispidulous outside. Staminal tube shorter or equaling the corolla. Stylebranches exceeding the petals; stigmas capitate, fimbriate. Capsule subglobose, apiculate, hispidulous with appressed simple hairs. Seeds woolly by long white hairs, 2—3 mm long.

Greater Antilles, Aruba, Bonaire, Curaçao, St. Eustatius, and St. Bartholomew; continental tropical America.

Vernacular name: rosita (Leeward Group).

In open vegetations.

ARUBA: Playa (Arnoldo 54, fl. Dec.).

CURAÇAO: Anthony Berg (Boldingh 5156, fl. & fr. Nov.; 5144, fl. Nov.); calcareous hills near Mahoema (Boldingh 4822, fl. Oct.); road from Cas Chiquito to Veeris Berg (Boldingh 4709, fl. Oct.); Rooi Beru (Stoffers 213, fl. Oct.); Brakkeput Mei Mei (Stoffers 191, fl. Oct.); foot of Seroe Christoffel at the Savonet side (Stoffers 1272, fl. & fr. Dec.); Groot Santa Marta (Arnoldo 1905, fl. & fr. Jan.).

ST. EUSTATIUS: top of The Quill, 400 m (Boldingh 187, fl. June).

*Thespesia Solander* ex Correa, *Ann. Mus. Natl. Hist. Nat. Paris* 9: 290. 1807. Nom. cons. 5018

Trees or sometimes shrubs. Leaves petiolate; blade simple, sometimes lobed, palmately veined. Flowers solitary in the axils of the leaves, large. Bracteoles adnate to the calyx, narrow, deciduous. Staminal tube included by the corolla. Pistil 5-carpellary; stigmas 5. Fruit an indehiscent leathery capsule. Seeds several in each locule.

Genus of about 8 species, mainly in the Old World.

*Thespesia populnea* (L.) Soland.

SOLANDER ex CORREA, *Ann. Mus. Natl. Hist. Nat. Paris* 9: 290. 1807; GRISEBACH, *Fl. Br. W. Ind. Isl.* 87. 1859 [1864]; DUSS, *Fl. phan. Ant. franç.* 79. 1897; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 130. 1909; JOHNSTON, *Proc. Bost. Soc. Nat. Hist.* 34(7): 236. 1909; URBAN, *Symb. Ant.* 4: 401. 1910;

BOLDINGH, Fl. Ned. W. Ind. Eil. 279. 1913; Fl. D. W. Ind. Isl. 2: 66. 1914; BRITTON & MILLSAUGH, Bahama Fl. 273. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 565. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 144. 1928; QUESTEL, Fl. Isl. St. Bartholomew 150. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 90. 1929; LEON & ALAIN, Fl. Cuba 3: 261. 1953; ARNOLDO, Zakflora 33. 1954; Gekw. & nutt. pl. Ned. Ant. 133. 1954; Zakflora 160. 1964; Gekw. en nutt. pl. Ned. Ant. 187. 1971; GOODING *et al.*, Fl. Barbados 286. 1965; ADAMS, Flowering plants of Jamaica 472. 1972; FOURNET, Fl. Guadeloupe & Martinique 1516, fig. 714. 1978; — *Hibiscus populneus* LINNAEUS, Spec. Plant. 694. 1753.

Tree or tall shrub, up to 5 m or more high; twigs with scattered brown scales, lenticellate, finely pubescent, glabrescent in age. Leaves petiolate; blades broadly ovate, acuminate at the apex, deeply cordate at the base, entire, glabrous, palmately 5-veined, 2—15 cm long and 1.5—12 cm wide; petiole stout, up to 3—12 cm long. Stipules caducous, up to 10 mm long. Flowers solitary in the axils of the leaves, large; pedicels stout, 1—4 cm long. Bracts linear, 4—8 mm long; bracteoles lanceolate, adnate to the calyx, 5—15 mm long. Calyx cupular to patelliform with 5 short tips, tomentose to villous, 5—9 mm long. Corolla campanulate; petals obovate, pale to bright yellow with 5 maroon blotches in the centre, puberulous at the base, about 5 cm long. Staminal tube included by the corolla, about 3 cm long; anthers with longitudinal dehiscence. Style twisted. Fruit an indehiscent leathery capsule, 1.5—2 cm long and 3—4.5 cm in diam. Seeds several in each locule, broadly obovoid, slightly angled, covered with closely matted silky hairs, these looser and more prominent on the angles, about 1 cm long.

Pantropic species; sometimes cultivated.

In littoral woodland.

Vernacular names: ota heita, palu santa (Leeward Group).

ARUBA: Playa (Arnoldo 269, fl. Dec.); Fontein plantation (Stoffers 1686, fl. Jan.).

BONAIRE: along coast in Kralendijk (Stoffers 498, fl. Nov.).

CURAÇAO: Rif (Boldingh 4642, fl. & fr. Oct.); San Juan, near coast (Suringar s.n., fl. & fr. Jan. [L]); Fuik (Suringar s.n., fl. & fr. Feb. [L]); Brakkeput (Suringar s.n., fl. & fr. Jan. [L]).

SABA: The Bottom (Suringar s.n., fr. Ap. [L]); Boldingh 2246, fl. July); Fort Bay (Stoffers 2898, fl. Ap.).

ST. EUSTATIUS: seashore near Oranjestad (Boldingh 30, fr. June); seashore near Tumble Down Dick Bay (Boldingh 154, st. June); slope of The Quill, 50 m (Suringar s.n., fr. Ap. [L]).

ST. MARTIN: Cul de Sac - Marigot Hill, 0—200 m (Boldingh 2625, fl. Aug.).

*Abelmoschus* Medicus, Malvenfam. 45. 1787

Herbs or undershrubs; indumentum bristly hirsute with simple hairs. Leaves long-petiolate; blade suborbicular, palmately lobed, -fid or -angled. Flowers solitary in the leafaxils or terminal, pedicellate, large. Bracteoles usually numerous, forming an epi-

calyx. Calyx spathaceous, splitting along one side, deciduous, irregularly toothed or lobed. Petals obovate, adnate to the base of the staminal tube, yellow with red or purple at the base. Staminal tube bearing numerous anthers on the outside throughout; filaments short. Ovary 5-locular; stylebranches short, 5; stigmas capitate. Ovules many in each locule. Fruit a longitudinally dehiscent capsule. Seeds numerous.

About 20 species, native of the Old World; some species now widely cultivated in warm regions.

Key to the species:

1. Indumentum sparsely hirsute; pedicels 1.5 cm long enlarging to 3 cm in fruit; bracteoles caducous; petals 4—6 cm long; capsule 6—16 cm long..... *A. esculentus*
- Indumentum long-hirsute; pedicel up to 4 cm long, in fruit up to 10 cm long; bracteoles persistent; petals 4—8 cm long, capsule 5—8 cm long..... *A. moschatus*

**Abelmoschus esculentus (L.) Moench**

MOENCH, Meth. Plant. 617. 1794; GRIEBACH, Fl. Br. W. Ind. Isl. 84. 1859 [‘1864’]; DUSS, Fl. phan. Ant. franç. 73. 1897; BRITTON & MILLSAUGH, Bahama Fl. 272. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 564. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 89. 1929; QUESTEL, Fl. Isl. St. Bartholomew 151. 1941; LEON & ALAIN, Fl. Cuba 3: 258. 1953; GOODING *et al.*, Fl. Barbados 287. 1965; ROBINS, Ann. Miss. Bot. Gard. 52: 514. 1965; ADAMS, Flowering plants of Jamaica 478. 1972; — *Hibiscus esculentus* LINNAEUS, Spec. Plant. 696. 1753; BOLDINGH, Fl. D.W. Ind. Isl. 1: 129. 1909; URBAN, Symb. Ant. 4: 401. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 278. 1913; Fl. D.W. Ind. Isl. 2: 65. 1914; URBAN, Symb. Ant. 8: 426. 1920; FAWCETT & RENDLE, Fl. Jamaica 5(3): 142. 1926; FOURNET, Fl. Guadeloupe & Martinique 1513, fig. 712. 1978.

Herb or undershrub, 1—2.5 m high, glabrous or all parts sparsely bristly hirsute by simple hairs, younger parts more densely hirsute. Leaves long-petiolate; blade suborbicular, up to 20 cm in diam., 3—5 (—7)-palmately lobed or -fid, acute or obtuse at the apex, cordate, truncate or cuneate at the base, lobes broad-ovate to lanceolate, more or less irregularly serrate; petiole with a longitudinal band of softer hairs adaxially, 5—18 cm long. Stipules linear, up to 12 mm long. Flowers solitary, axillary or terminal, on short pedicels of 5—15 mm length, thickening and up to 3 cm long in fruit. Epicalyx bracteoles 8—12, linear-lanceolate, caducous, 10—17 mm long. Calyx 5-toothed, puberulous, 1.5—3.5 cm long. Petals obovate, rounded at the apex, yellow with red or purple basal spots, 3—6 cm long. Staminal tube about half as long as the corolla. Capsule oblong to oblong-ovoid, 5-angulate, puberulous, 6.5—16 cm long. Seeds globose, reniform, glabrous or puberulous or pilose, 3—6 mm in diam.

Native of the Old World tropics, now widely cultivated and occasionally escaped in tropical and subtropical regions.

Vernacular names: ochro, giambo (Leeward Group).

ARUBA: Fonteín (Stoffers 1724, fl. & fr. June).

BONAIRE: without loc. (Boldingh 9205, fl. & fr.).

CURAÇAO: Malpais (Stoffers 285, fl. & fr. Oct.).

SABA: The Bottom (Boldingh 1847a, fl.); without loc. (Lionarons 322, fl. & fr.).

**Abelmoschus moschatus** Medic.

MEDICUS, Malvenfam. 46. 1787; GRIEBACH, Fl. Br. W. Ind. Isl. 84. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 73. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 130. 1909; CHEESMAN in Fl. Trinidad & Tobago 1: 487. 1947; ROBINS, Ann. Miss. Bot. Garden 52: 515. 1965; ADAMS, Flowering plants of Jamaica 478. 1972; — *Hibiscus abelmoschus* LINNAEUS, Spec. Plant. 696. 1753; URBAN, Symb. Ant. 4: 401. 1910; Symb. Ant. 8: 426. 1920; FAWCETT & RENDLE, Fl. Jamaica 5(3): 142. 1926; FOURNET, Fl. Guadeloupe & Martinique 1513. 1978; — *Abelmoschus abelmoschus* KARSTEN, Fl. Deutschland ed. 2. 2: 157. 1894; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 564. 1924.

Herb or undershrub up to 3 m high, bristly hispid-hirsute with long simple hairs. Leaves long-petiolate; blade suborbicular, cordate or sagittate at the base, 16—20 × 18—24 cm, 3—5-palmately lobed, -fid, or -angled, the lobes deltoid to narrowly ovate; petiole up to 15 cm long. Stipules subulate. Flowers solitary, axillary or terminal, pedicellate; pedicels up to 4 cm long, thickening and up to 10 cm in fruit. Epicalyx bracteoles 8—10, linear-lanceolate, persistent, 10—17 mm long. Calyx 5-toothed, up to 3.5 cm long. Petals obovate, yellow with a purple spot at the base, 4—8 cm long. Staminal tube less than half as the corolla. Capsule oblong to ovate, 5—8 cm long. Seeds globose-reniform, glabrous, 3—4 mm in diam.

Native of south-eastern Asia, sometimes cultivated and naturalized in tropical America.

SABA: road to The Mountain (Arnoldo 805, fl. & fr. Aug.).

**Cienfuegosia** Cavanilles, Diss. 2 (App. 3). 1786; 3: 174. 1787

Perennial herbs or undershrubs; stems usually angled, more or less punctate; indumentum pubescent or glabrous. Leaves petiolate; blades linear to lobed, entire or serrate. Flowers solitary, axillary. Bracteoles 5—12, often minute or prominent. Calyx 5-lobed, usually punctate. Petals convolute, rounded or obcordate, of various colour. Staminal tube much shorter than the corolla. Style filiform, 3—5-lobed; stigmas capitate; ovary 3—4-locular. Ovules 3—5 in each locule. Fruit an ovoid capsule, loculicidal, 3—4-valved; the valves sometimes with hairs on the inner suturemargins. Seeds pubescent or woolly.

About 25 species in tropical and subtropical regions.

**Cienfuegosia heterophylla** (Vent.) Garcke

GARCKE, Bonplandia 8: 150. 1860; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 259. 1913; Fl. D.W. Ind. Isl. 2: 66. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 566. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 90. 1929; LEON & ALAIN, Fl. Cuba 3: 258. 1953; FRYXELL, Ann. Miss. Bot. Gard. 56: 211. 1969; — *Redutea heterophylla* VENTENAT, Hort. Cels. t. 11. 1800.

Undershrub, up to 1 m high, minutely scurfy-pubescent by stellate hairs; younger parts more densely hairy; branches slender, angled. Leaves petiolate; blade oblong to ovate, acute at the apex, rounded at the base, 3—5-palmately veined, entire, ciliate, 2—6 cm long and up to 2 cm wide; petiole 1—1.5 cm long. Stipules linear, very small. Flowers solitary in the axils of the leaves, long-pedicellate; pedicels not articulated, minutely

punctate at the top, up to 5 cm long, accrescent in fruit. Bracteoles 8—10, subulate, up to 3 mm long. Calyx divided nearly to the base into 5 narrow acute to acuminate lobes, the lobes with 3 prominent veins and black-punctate rows, 9—15 mm long. Corolla yellow with purple at the base, 1.5—3 cm long. Staminal tube shorter than the corolla; anthers numerous. Capsule ovoid, 3-valved, mucronate, up to 1 cm long, with up to 4 mm long hairs on the inner suture-margins. Seeds 4 in each locule, 3—4 mm long, densely comose, hairs appressed, brown or tan, 6—8 mm long.

Florida, Cuba, Aruba, Curaçao, Margarita, Trinidad, and from Colombia to Brazil.

ARUBA: calcareous top and slope of Canashito (Boldingh 6383, fl. & fr. Dec.).

*Alcea* Linnaeus, Spec. Plant. 687. 1753

Perennial herbs with an indumentum of stellate and simple hairs. Leaves petiolate; blade simple to palmately lobed. Flowers solitary and in spike-like clusters, short-pedicellate. Epicalyx present, the lobes 6—9, united at the base. Petals large, 30 mm or longer, notched at the apex. Staminal tube 5-angled, glabrous, bearing anthers at the apex and in the uppermost part; anthers yellowish. Styles as many as the carpels; stigmas filiform. Fruit a schizocarp; carpels many, indehiscent, arranged in a single whorl, each mericarp not completely divided by an internal septum into a little upper empty locule and a lower locule with a single seed.

About 60 species, mainly in south-western and central Asia; some species widely cultivated.

*Alcea rosea* L.

LINNAEUS, Spec. Plant. 687. 1753; — *Althaea rosea* CAVANILLES, Diss. 2: 91, t. 29. f. 3. 1786; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 568. 1924; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 183. 1954; Gekw. en nutt. pl. Ned. Ant. 17. 1964.

Herb, not branched, up to 2 m high; younger parts tomentose by minute and large stellate hairs sometimes intermingled with simple hairs, older parts glabrescent. Leaves long-petiolate; blade suborbicular, palmately lobed, cordate to truncate at the base, up to 20 cm long and 25 cm wide, margin serrate-crenate or dentate, palmately 5—7-veined; petiole up to 40 cm long. Stipules deeply divided into 2—4 narrow lobes, ciliate, persistent, up to 15 mm long. Flowers solitary, axillary or in terminal clusters; pedicels short. Epicalyx with 6—7 acute lobes divided to the middle, up to 1.3 cm long. Calyxlobes acute, up to 1.8 cm long. Petals notched at the apex, white, yellow, red or purplish, with long hairs at the base, 30—50 mm long. Mericarps with a deep narrow furrow at the back; lateral walls rugose; back with long hairs about 7 mm long.

Widely cultivated and sometimes escaped; origin uncertain, probably East-Mediterranean.

Vernacular name: stokroos (Leeward Group).

CURAÇAO: St. Thomas College, Willemstad (Arnoldo 1093, fl. Sept.).

ST. EUSTATIUS: without loc. (van Groll-Meyer 121, fl. & fr.; s.n., st.).

**Gossypium** Linnaeus, Spec. Plant. 693. 1753

Herbs, shrubs or small trees, glabrous to densely pubescent, black-punctate with oil glands throughout. Leaves petiolate; blade usually 3—5-lobed, lobes ovate-lanceolate, acuminate at the apex, cordate at the base, margin entire, the principle veins beneath with nectary glands near the base. Stipules almost triangular. Flowers solitary, axillary, pedicellate. Epicalyx of 3 bracteoles, these broadly cordate, entire and small or deeply incised-dentate and large acuminate teeth, 3—6 cm long. Calyx cupular, shortly 5-toothed, relatively small. Staminal tube included by the corolla, bearing anthers on the outside. Ovary 3—5-locular; style clavate, 5-grooved; stigmas 5. Ovules 2—many in each locule. Fruit a loculicidally dehiscent capsule, ovoid to subglobose, with coriaceous valves. Seeds numerous, covered with long and/or short hairs.

A genus with an uncertain number of species, because of the interspecific hybridisation, in the tropics of both worlds.

**Key to the species:**

1. Epicalyx distinctly shorter than the corolla; staminal tube long, almost half as long as the petals; filaments 2 mm long; cotton readily separable from the seed; plant usually glabrous..... *G. barbadense*  
Epicalyx not distinctly shorter than the corolla; staminal tube shorter, about  $\frac{1}{2}$  to  $\frac{1}{4}$  of the length of the corolla; filaments about 8 mm long; cotton firmly attached to the seed; plant glabrous to pubescent..... *G. hirsutum*

**Gossypium barbadense** L.

LINNAEUS, Spec. Plant. 693. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 86. 1859 ['1864']; BOLDINGH, Fl. D.W. Ind. Isl. 1: 130. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 235. 1909; URBAN, Symb. Ant. 4: 402. 1910; BOLDINGH, Fl. Ned. W. Ind. Eil. 280. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 274. 1920; URBAN, Symb. Ant. 8: 427. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 567. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 149. 1926; QUESTEL, Fl. Isl. St. Bartholomew 152. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 489. 1947; LEON & ALAIN, Fl. Cuba 3: 259. 1953; ARNOLDO, Gekw. & nutt. plant. Ned. Ant. 185. 1954; GOODING *et al.*, Fl. Barbados 279. 1965; ARNOLDO, Gekw. & nutt. plant. Ned. Ant. 183. 1971; ADAMS, Flowering plants of Jamaica 473. 1972; FOURNET, Fl. Guadeloupe & Martinique 1518. 1978.

Herb or shrub, up to 4 m high, black-punctate with oilglands throughout; stem and branches nearly glabrous. Leaves petiolate; blades 3—5-lobed, lobes ovate-lanceolate with acuminate apex, cordate at the base, margin entire, palmately 3—5-veined, near the base often hairy, up to about 15 cm long; petiole up to 11 cm long. Stipules almost triangular, up to 10 mm long. Flowers solitary in the axils of the leaves, pedicellate. Epicalyx of 3 large foliaceous bracteoles, broadly cordate, deeply incised-dentate with (3—) 7—9 (—11) acuminate teeth, distinctly shorter than the corolla, almost glabrous, except for margins and veins. Calyx short-toothed, up to 8 mm long. Petals pale, yellow with orange or red bases, turning pink or red, pubescent, up to 6 cm. Staminal tube 2.3—2.4 cm long; filaments about 2 mm long. Fruit 3-locular, 3—5 cm long. Seeds numerous, with long white hairs; cotton easily separable from the seed.

Widely cultivated and spontaneous in tropical and subtropical regions.

Vernacular name: creole cotton (Windward Group).

SABA: The Bottom (Boldingh 1986, fl. & fr. July; 2253, st. July; 2238, st. July).

ST. EUSTATIUS: without loc. (van Groll 2519, fl.).

**Gossypium hirsutum L.**

LINNAEUS, Spec. Plant. ed. 2. 976. 1762; URBAN, Symb. Ant. 4: 402. 1910; BOLDINGH, Fl. D.W. Ind. Isl. 2: 66. 1914; URBAN, Symb. Ant. 8: 427. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 567. 1924; FAWCETT & RENDLE, Fl. Jamaica 5(3): 148. 1926; QUESTEL, Fl. Isl. St. Bartholomew 152. 1941; WILLIAMS, Fl. Trinidad & Tobago 1: 488. 1947; LEON & ALAIN, Fl. Cuba 3: 259. 1953; ARNOLDO, Zakflora 68. 1954; Gekw. en nutt. pl. Ned. Ant. 69. 1954; Zakflora 157. 1964; Gekw. & nutt. pl. Ned. Ant. 185. 1971; ADAMS, Flowering plants of Jamaica 473. 1972; FOURNET, Fl. Guadeloupe & Martinique 1518. 1978.

Shrub or small tree, black-punctate, stellate and simple haired, up to 4 m high; stem, branches and petioles glabrous to pubescent. Leaves petiolate; blades 3(—5)-lobed, the lobes ovate with acuminate apex, cordate at the base, margin entire, palmately 5-veined, sparsely haired beneath and on the veins above, up to 15 cm long; petiole up to 11 cm long. Stipules triangular, up to 10 mm long. Flowers solitary in the axils of the leaves, pedicellate. Epicalyx of 3 large foliaceous bracts, broadly cordate, deeply incised-dentate, with mostly 4—7 acuminate teeth, about as long as the corolla, persistent. Calyx shortly 5-toothed, up to 8 mm long. Petals yellowish or white sometimes with crimson spots at the base, fading pink or purple, about 4 cm long. Staminal column short, about 12 mm long; filaments about 8 mm long. Fruit up to 3 cm long. Cotton not easily separable from the seed.

Cultivated in tropical regions of the world.

Vernacular name: katuna (Leeward Group).

BONAIRE: calcareous hill of Montagne (Boldingh 7391, fl. Feb.).

CURAÇAO: Julianadorp (Stoffers 329, fl. & fr. Oct.); without loc. (Boldingh 5395, fr.).