

MALPIGHIACEAE

by

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Woody plants, trees, shrubs or undershrubs, often twining, with bi-branched strigae and glands on leaves and other sterile parts. Inflorescence consisting of racemes. Flowers zygomorphic. Sepals 5, sometimes all, but mostly 4 with one or two glands without. Petals 5, free, clawed and mostly with a lacerate margin. Stamens 10, obdiplostemonous, not seldom staminodial or wanting; filaments united into a tube at the base. Ovary (2—)3(—5)-locular; styles as many as the locules. Ovules pendulous, solitary in each locule. Fruit a schizocarp, mostly winged, rarely a nut, a berry or a drupe. Seeds without endosperm.

About 800 species in more than 60 genera in the tropics.

Key to the genera:

1. Shrubs or trees..... 2
Vines..... 4
2. Filaments of the stamens hairy at the base..... *Byrsonima*
Filaments of the stamens not hairy..... 3
3. Styles united..... *Bunchosia*
Styles distinct..... *Malpighia*
4. Leaves membranous; samaras with the wing thickened on the inferior margin
..... *Heteropteris*
Leaves coriaceous; samaras with the wing thickened on the superior margin
..... *Stigmaphyllon*

Malpighia Linnaeus, Spec. Plant. 425. 1753

Shrubs or sometimes trees. Leaves opposite, petiolate; blades entire. Stipules minute. Flowers in corymbs. Bracts and bracteoles strigose. Sepals 5, connate, provided with 2 glands without, persistent. Petals 5, more or less keeled, margin lacerate. Stamens 10; filaments united into a tube at the base; anthers attached by the base. Ovary 3-locular; styles 3; stigmas linear. Drupes 2(—3)-seeded. Seeds brown.

About 40 species in tropical America and south-western United States.

Key to the species:

1. Leaves linear to lanceolate. *M. linearis*
Leaves not linear to lanceolate. 2
2. Leaves acuminate at the apex; andro-gynoecium actinomorphic. . . *M. glabra*
Leaves acute or obtuse at the apex, often emarginate; andro-gynoecium zygomorphic. *M. emarginata*

Malpighia glabra L.

LINNAEUS, Spec. Plant. 425. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 116. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 112. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 227. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 238. 1913; Fl. D.W. Ind. Isl. 2: 49. 1914; URBAN, Symb. Ant. 8: 338. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 224. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 443. 1924; NIEDENZU in ENGLER, Pflanzenreich IV, 141: 617. 1928; QUESTEL, Fl. Isl. St. Bartholomew 127. 1941; LEON & ALAIN, Fl. Cuba 3: 19. 1953; ARNOLDO, Zakflora 64. 1954; Zakflora 154. 1964; Gekw. en nutt. pl. Ned. Ant. 87, fig. 131. 1964; Gekw. en nutt. pl. Ned. Ant. 182. 1971; ADAMS, Flowering plants of Jamaica 397. 1972; FOURNET, Fl. Guadeloupe & Martinique 1482. 1978.

Shrub or small tree; twigs sparingly covered with white strigae, glabrescent in age. Leaves opposite, petiolate; blade ovate-elliptic to oblong, acuminate at the apex, acute to obtuse at the base, 2.5—9 × 1—4 cm, pinnately veined, margin plane, entire, glabrous or sometimes strigose when young; petioles c. 2 mm long. Stipules ovate, persistent, densely covered with white strigae, 2 mm long. Inflorescence consisting of pedunculate corymbs; peduncle up to 1.5 cm long; pedicels 1—1.5 cm long; peduncle and pedicels covered with strigae. Bract 1, ovate to lanceolate, strigose, 1—1.5 × 0.5—1 mm; bracteoles 2, ovate to lanceolate, strigose, 1—1.5 × 0.5—1 mm. Sepals 5, connate, oblong, provided with 2 very large, sessile glands without. Petals 5, lilac, trowel-shaped to rhomboid, slightly keeled, 0.3—1 × 0.4—1 cm. Andro-gynoecium actinomorphic. Stamens 10; filaments united into a tube at the base; anthers attached by the base, 4 mm long, extrorsely dehiscent. Ovary 3-locular; styles 3, c. 2 mm long, subequal, straitish, thickened at the apex. Drupe depressed-ovoid, scarlet, 0.5—1 cm in diam. Seeds 2, brown, ovoid, 0.4 × 0.2 cm.

Southern part of North America, Central America, northern South America, and West Indies.

Not common.

Vernacular name: shimarucu machu (Leeward Group).

ARUBA: Arrarat plantation (Suringar s.n., defl. Jan [L]).

BONAIRE: Rooi Sangu near Dos Pos (Arnoldo 440, fr. Feb.); vicinity of Dos Pos (Arnoldo 1140, defl. Dec.); neighbourhood of Rincón (Boldingh 7335, st. Feb.); Fontein (Suringar s.n., st. Feb. [L]).

CURAÇAO: hofje of Zuurzak (Boldingh 5389, fr. Nov.); hills near Brakkeput ariba (Boldingh 5393, flb. Nov.; 5393, fr. Nov.).

Malpighia emarginata DC.

DEcANDOLLE, Prodr. 1: 578. 1824; — *Malpighia puniceifolia* auct., non LINNAEUS, Spec. Plant. ed. 2. 609. 1762; GRISEBACH, Fl. Br. W. Ind. Isl. 116. 1859 ['1864']; Duss, Fl. phan. Ant. franç. 113. 1897; URBAN, Symb. Ant. 4: 382. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 106. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 227. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 239. 1913; Fl. D.W. Ind. Isl. 2: 49. 1914; FAWCETT & RENDLE, Fl. Jamaica 4(2): 226. 1920; URBAN, Symb. Ant. 8: 338. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 443. 1924; NIEDENZU in ENGLER, Pflanzenreich IV, 141: 622. 1928; WILLIAMS, Fl. Trinidad & Tobago 1: 143. 1929; QUESTEL, Fl. Isl. St. Bartholomew 128. 1941; LEON & ALAIN, Fl. Cuba 3: 19. 1953; ARNOLDO, Zakflora 31. 1954; Zakflora 154. 1964; Gekw. en nutt. pl. Ned. Ant. 87, fig. 134. 1964; GOODING *et al.*, Fl. Barbados 240. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 183, fig. 134. 1971; ADAMS, Flowering plants of Jamaica 398. 1972; FOURNET, Fl. Guadeloupe & Martinique 148. 1978.

Shrub or small tree, twigs sparingly covered with white strigae, glabrescent in age. Leaves opposite, petiolate; blade obovate, oval or elliptic, oblong, acute to obtuse, often emarginate and the midvein excurrent at the apex, acute to obtuse at the base, 1.2—6.7 × 0.7—3.8 cm, pinnately veined, margin plane, entire, glabrous; petiole 1—3 mm long. Stipules obovate to oval or lanceolate, persistent, covered with strigae, 1.5—4 × 1—1.5 mm. Inflorescence consisting of sessile or subsessile corymbs; pedicels up to 1 cm long, covered with strigae. Bract 1, lanceolate, 1—1.5 mm long, covered with strigae; bracteoles 2, as the bract but 0.5—1 mm long. Sepals 5, connate, ovate, 4 × 1 mm, provided with 2 sessile glands without, about half as long as the sepals. Petals 5, slightly keeled, lilac, trowel-shaped to rhomboid, 0.7 × 0.5 cm, its 2 mm long claw included. Androgynoeium zygomorphic. Stamens 10; filaments united into a low tube at the base, 3 of them thicker than the others; anthers attached by the base, 4 mm long, with extrorse dehiscence. Ovary 3-locular, more or less globose, 1.2 mm in diam.; styles 3, one much slender than the other two; stigmas linear. Drupe depressed globose, scarlet, 1.5 cm in diam. Seeds 2, ovoid 2 × 1.5 mm.

West Indies; often cultivated in continental America.

Common, but not in the moist areas of Saba and St. Eustatius.

Vernacular names: shimarucu (Leeward Group)
cherry, west indian cherry (Windward Group).

ARUBA: slope of Hooiberg (Arnoldo 118, st. Dec.); Belashi (Arnoldo 241, st. Dec.); calcareous soil near Oranjestad (Boldingh 6230, st. Dec.); hills near Savaneta (Boldingh 6524, st. Jan.); calcareous soil near Savaneta (Boldingh 6551, st. Jan.); vicinity of Oranjestad (Stoffers 2063, st. Dec.).

BONAIRE: near Rincón (Boldingh 7106, st. Jan.); slope of Joewa hills (Boldingh 7210, 7213, st. Feb.); calcareous soil near Piedra Cruz (Boldingh 7344, st. Feb.); Slagbaai Plantation (Stoffers 745, 749, 754, fl. Nov); Seroe Grita Kabai (Stoffers 852, fr. Dec.; 862, st. Dec.); Montagne (Stoffers 890, st. Dec.).

CURAÇAO: road from Cas Chiquito to Piscadera (Boldingh 4704, st. Oct.; 4711, fr. Oct.); hills near Blauw (Boldingh 4757, fr. Oct.); hills near Malpais (Boldingh 4874, st. Oct.); hills near Seinpost (Boldingh 5692, fr.); Rooi Beru (Stoffers 215, fl. Oct.); Santa Barbara, near Tafelberg (Stoffers 386, defl. Oct.); id., Tafelberg (Stoffers 405, fl. Oct.); Veeris (Suringar s.n., fr. June [L]); without loc. (Aschenberg s.n., st.; Suringar s.n., fl. [L]).

SABA: between The Bottom and Mary's Point (Boldingh 1546, st. July); Compagnie's Gut (Stoffers 3007, fl. Ap.); Hellsgate (Arnoldo 822, st. Aug.); without loc. (Boldingh 1477, st. July).

ST. EUSTATIUS: seashore near Oranjestad (Boldingh 28, st. May); slope of the lower part of Signal Hill (Boldingh 107, st. May); road from Oranjestad to Fort de Windt (Stoffers 3483, flb. July; 3527, fl. July); Oranjestad (Suringar s.n., st. Ap. [L]); Gilboa Hill (Suringar s.n., fl. May [L]); Sugar Loaf (Suringar s.n., fl. May [L]); without loc. (v. Groll-Meyer s.n., fl.; Boldingh s.n., st.).

ST. MARTIN: from Philipsburg to Guana Bay (Boldingh 2435, st. Aug.); Marigot road near Marigot (Boldingh 2809, st. Aug.); Naked Boy Hill (Stoffers 2697, fl. Ap.); Prince Quarter (Suringar s.n., fl. May [L]).

Malpighia linearis Jacq.

JACQUIN, Enum. Syst. Plant. 21. 1760; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 444. 1924; QUESTEL, Fl. Isl. St. Bartholomew 128. 1941; LEON & ALAIN, Fl. Cuba 3: 19. 1953; FOURNET, Fl. Guadeloupe & Martinique 1478. 1978; — *Malpighia angustifolia* LINNAEUS, Spec. Plant. ed. 2. 610. 1762; GRISEBACH, Fl. Br. W. Ind. Isl. 117. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 113. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 105. 1909; Fl. Ned. W. Ind. Eil. 238. 1913; NIEDENZU in ENGLER, Pflanzenreich IV, 141: 623. 1928; — *Malpighia angustifolia* L. var. *β. linearis* (JACQ.) NIEDENZU, Ind. lect. Lyc. Brunsberg. per aest. 9. 1899; — *Malpighia angustifolia* L. var. *α. oblongata* NIEDENZU, Ind. lect. Lyc. Brunsberg. per aest. 9. 1899.

Shrub or small tree, up to 4.5 m tall; twigs with very sparsely white hairs, glabrescent in age. Leaves opposite, petiolate; blade linear to lanceolate, 2—10 × 0.2—1.6 cm, acute to obtuse at the apex, acute at the base, pinnately veined, glabrous above, with scattered bi-branched hairs beneath, hairs stinging (according to Grisebach, Duss and Boldingh), margin plane, entire; petioles 1—3 mm long. Stipules very small, caducous. Inflorescence consisting of few-flowered corymbs; peduncle up to 3 cm long; pedicels c. 0.5 cm long, peduncle and pedicels strigose. Bract 1, lanceolate, 1—2.5 × 0.5—1 mm, strigose; bracteoles 2, as the bract, 0.5—1 × 0.25 mm. Sepals 5, connate, 12 × 3 mm, lanceolate, on the outside provided with 2 very large sessile glands. Petals 5, white to purplish, obovate. Stamens 10; filaments united into a tube at the base, anthers attached by the base, 0.5 mm long. Ovary 3-locular; styles 3; stigmas linear, 1 mm long. Drupe ovoid to globose, red, 9-costate, 8—11 mm in diam. Seeds not seen.

Lesser Antilles and Cuba.

Rare, in secondary vegetations.

Vernacular name: bastard cherry (Windward Group).

ST. MARTIN: Lower part of the hills between Mount Chambord and Mount Vernon (Boldingh 2919, defl. Aug.; 2920, defl. Aug.); along roads from Grande Case to Marigot (Boldingh 3090, defl. Sept.).

Byrsonima Richard ex Humboldt, Bonpland & Kunth, Nov. Gen. & Spec. 5: 113. 1822 ed. fol.; 147. 1822 ed. quart.

Trees or shrubs, tomentose or sparingly pubescent with red and white hairs. Leaves opposite, petiolate; blades entire. Stipules usually persistent. Inflorescence consisting of

many-flowered racemes. Bract and bracteoles small. Sepals 5, connate, provided with 2 glands on the outside, persistent. Petals 5, clawed. Stamens 10, obdiplostemonous, with red hairs at the base; anthers attached by the base. Ovary 3-locular; styles 3; stigmas linear. Ovules solitary in each locule. Drupes 3-seeded. Seeds yellow.

About 120 species in tropical America.

Key to the species:

1. Margin of the leaves plane..... 2
Margin of the leaves revolute..... *B. lucida*
2. Leaves parchment-like..... *B. coriacea*
Leaves coriaceous..... *B. crassifolia*

Byrsonima crassifolia (L.) Kunth

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 5: 115. 1822 ed. fol.; 5: 149. 1822 ed. quart.; GRIEBACH, Fl. Br. W. Ind. Isl. 114. 1859 ['1864']; URBAN, Symb. Ant. 4: 335. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 107. 1909; Fl. Ned. W. Ind. Eil. 240. 1913; Fl. D.W. Ind. Isl. 2: 50. 1914; URBAN, Symb. Ant. 8: 342. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 447. 1924; NIEDENZU in ENGLER, Pflanzenreich IV, 141: 718. 1928; WILLIAMS, Fl. Trinidad and Tobago 141. 1929; LEON & ALAIN, Fl. Cuba 3: 27. 1953; ARNOLDO, Zakflora 31. 1954; Zakflora 154. 1964; GOODING *et al.*, Fl. Barbados 238. 1965; FOURNET, Fl. Guadeloupe & Martinique 1474. 1978; — *Malpighia crassifolia* LINNAEUS, Spec. Plant. 426. 1753.

Shrubby or arborescent, 3—9 m tall; twigs tomentose with red and white hairs. Leaves opposite, petiolate; blade obovate or oval, acuminate, cuspidate or obtuse at the apex, acute at the base, pinnately veined, 3—11 × 1.5—5 cm, coriaceous, tomentose with white and red hairs, becoming glabrous with age; margin plane and entire; petioles up to 1.3 cm long. Stipules ovate, tomentose, with red and white hairs, about 3 mm long, persistent. Inflorescence consisting of many-flowered racemes, up to 14 cm long, the peduncles included; peduncle tomentose, red and white; pedicels tomentose, red and white, 3—7 mm long. Bract 1, ovate, 2.5—3 mm long, tomentose with red and white hairs; bracteoles 2, as the bract but 1.5—2.5 mm long. Sepals 5, connate, ovate, tomentose, 2 mm long, the lobes provided with two glands on the outside. Petals 5, yellow, clawed, the blade kidney-shaped, 4 × 8 mm, the claw 1 mm long. Stamens 10, obdiplostemonous; filaments 2.5 mm long, with red hairs at the base; anthers attached by the base, extrorsely opening, 2.5 mm long. Ovary 3-locular; styles, 3, 3.5 mm long; stigma linear. Drupe globose, brown, 5—7 mm in diam. Seeds 3, ovoid, yellow.

Northern part of South America, West Indies, and Panama.

CURAÇAO: hills near Knip (Stoffers 1110, fl. Dec.; 8139, fl. Jan.; Arnolde 1627, fl. May; P. de Wilde 117a, fl. & fr. Jan. [L]); without loc. (Boldingh 4925, fl. & fr. Nov., 5517, fl. Nov.).

ST. EUSTATIUS: top of The Quill (Stoffers 3958, st. July).

Byrsonima lucida (Mill.) Kunth

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, *Nov. Gen. & Spec.* 5: 113. 1822 ed. fol.; 5: 147. 1822 ed. quart.; GRISEBACH, *Fl. Br. W. Ind. Isl.* 115. 1859 ['1864']; DUSS, *Fl. phan. Ant. franç.* 111. 1897; URBAN, *Symb. Ant.* 4: 335. 1905; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 107. 1909; *Fl. Ned. W. Ind. Eil.* 240. 1913; URBAN, *Symb. Ant.* 8: 342. 1920; BRITTON & MILLSAUGH, *Bahama Fl.* 205. 1920; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 446. 1924; NIEDENZU, in ENGLER, *Pflanzenreich IV*, 141: 709. 1928; LEON & ALAIN, *Fl. Cuba* 3: 27. 1953; GOODING *et al.*, *Fl. Barbados* 238. 1965; FOURNET, *Fl. Guadeloupe & Martinique 1473.* 1978; — *Malpighia lucida* MILLER, *Gard. Dict.* ed. 8. no. 9. 1768.

Shrubby or arborescent, 2—8 m tall; twigs sparingly pubescent with red and white hairs, glabrescent in age. Leaves opposite, petiolate; blade spathulate to obovate, 1.2—4.2 × 0.6—1.4 cm, obtuse or rarely acute at the apex, narrowed and tapering into the short petiole at the base, reticulate-veined, margin revolute, entire, surface glabrous, shining above, dull beneath, parchment-like; petioles 2.5 mm long. Stipules ovate, sparingly pubescent with red hairs, 2 × 1.5 mm. Inflorescence consisting of axillary racemes up to 5 cm long, the peduncles included; pedicels sparingly pubescent with red hairs, 8—10 mm long. Bract 1, 3-lobed, sparingly pubescent with short red hairs, 4.5—5 mm long; bracteoles 2, ovate pubescence as the bract, 2—2.5 mm long. Sepals 5, connate, ovate, about 2 mm long, the lobes provided with two glands on the outside. Petals 5, changing during development from rose to purple, clawed, the blade kidney-shaped, 2.5 × 6 mm, the claw 0.5 mm long. Stamens 10, obdiplostemonous; filaments 3 mm long, with short red hairs at the base; anthers glabrous, exceeded a little by the connective, attached by the base, extrorsely dehiscent. Ovary 3-locular; styles 3, 2.5 mm long; stigmas linear. Drupe brown, globose, 5—8 mm in diam. Seeds 3, ovoid, 3 mm long, yellow.

West Indies, Bahamas, and Florida.

On limestone.

ST. MARTIN: Low Lands, 50 m (Arnoldo 3434, fr. Jan.; Boldingh 3261, st. Sept.).

Byrsonima spicata (Cav.) Kunth

KUNTH in HUMBOLDT, BONPLAND & KUNTH, *Nov. Gen. & Spec.* 5: 113. 1822 ed. fol.; 5: 147. 1822 ed. quart.; GRISEBACH, *Fl. Br. W. Ind. Isl.* 115. 1859 ['1864']; BOLDINGH, *Fl. D.W. Ind. Isl.* 1: 107. 1909; *Fl. Ned. W. Ind. Eil.* 240. 1913; BRITTON & WILSON, *Sci. Surv. Porto Rico & Virgin Isl.* 5: 447. 1924; WILLIAMS, *Fl. Trinidad & Tobago* 1: 141. 1929; LEON & ALAIN, *Fl. Cuba* 3: 26. 1953; — *Byrsonima coriacea* (Sw.) KUNTH var. *spicata* (Cav.) NIEDENZU, in ENGLER, *Pflanzenreich IV*, 141: 700. 1928; GOODING *et al.*, *Fl. Barbados* 238. 1965; — *Malpighia spicata* CAVANILLES, *Diss.* 8: 49, t. 237. 1789.

Tree, 3—20 m tall; younger parts ferruginous appressed-pubescent. Leaves opposite, petiolate; blade elliptic-oblong, acute or acuminate at the apex, acute to decurrent at the base, 3—14 × 1—6 cm, parchment-like, glabrate or sparsely pubescent below and on the midrib above, margin plane and entire; petiole up to 1.5 cm long. Stipules narrowly triangular, 3—4 mm long, persistent. Inflorescence consisting of many-flowered, terminal racemes, up to 8 cm long, the peduncle included, peduncle, rhachis and pedi-

cels densely ferruginous-tomentose; pedicels 10 mm long. Sepals 5, connate, ovate, lobes provided with 2 yellow oblong-obovate glands without, 1.5—2 mm long. Petals 5, yellow, clawed, the blade suborbicular, cucullate, 4 × 8 mm, the claw 1 mm, one petal somewhat thicker and more erect than the others. Stamens 10, obdiplostemonous; filaments 1.5 mm long with red hairs at the base, nearly as long as the anthers; anthers attached by the base, glabrous, equaling the connative, introrsely dehiscent. Ovary glabrous, 3-locular; styles 3, 3 mm long; stigmas linear. Drupe 3-seeded, brownish-yellow, 9—11 mm in diam. Seeds 3, globose, yellow.

West Indies, Central and tropical South America.

In rainforest and secondary rainforest.

Vernacular name: hilly hock (Windward Group).

SABA: from Windwardside to Hellgate (Boldingh 1679, st. July; Stoffers 3958, st. July); Windwardside (Boldingh 1944, fl. July).

ST. EUSTATUS: top of The Quill, 380 m (Boldingh 253, fl. June); inner slope of The Quill, 350 m (Boldingh 1229, fl. June); slope of The Quill near Glass Bottle, 275—340 m (Stoffers 3844, fl. June).

Heteropteris Kunth, in Humboldt, Bonpland & Kunth, Nov. Gen. & Spec. 5: 126. 1822 ed. fol.; 5: 163. 1822 ed. quart. Nom. cons.

Woody vines, trailing or climbing on trees. Leaves opposite, petiolate; blades entire, membranous. Stipules persistent, strigose. Inflorescence consisting of panicles. Flowers small. Sepals 5, persistent, provided with 8—10 glands without or glandless. Petals 5, yellow, orange or purple. Stamens 10, all fertile, united at the base; anthers usually elliptic, erect, attached above the base, glabrous, without appendages. Ovary 3-locular, 3-lobed; styles 3, free, short; stigmas at the inner angles. Fruit a samara with the wing thickened on the inferior margin.

About 90 species in the Neotropics; one species in western tropical Africa.

Heteropteris purpurea (L.) Kunth

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 5: 126. 1822 ed. fol.; 164. 1822 ed. quart.; GRISEBACH, Fl. Br. W. Ind. Isl. 119. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 116. 1897; URBAN, Symb. Ant. 4: 328. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 104. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 226. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 237. 1913; URBAN, Symb. Ant. 8: 334. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 234. 1920; NIEDENZU in ENGLER, Pflanzenreich IV, 141: 322. 1928; WILLIAMS, Fl. Trinidad & Tobago 1: 497. 1947; GOODING *et al.*, Fl. Barbados 239. 1965; ADAMS, Flowering plants of Jamaica 399. 1972; FOURNET, Fl. Guadeloupe & Martinique 1469. 1978; — *Banisteria purpurea* LINNAEUS, Spec. Plant. 427. 1753; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 439. 1924; WILLIAMS, Fl. Trinidad & Tobago 1: 134. 1929.

A vine; twigs pock-marked, glabrous. Leaves opposite, petiolate; blades ovate to oblong or elliptic, obtuse at the apex, acute to obtuse at the base, pinnately veined, 1—4 × 0.6—1.8 cm, membranaceous, glabrous, margin plane, entire; petioles up to 0.8 cm

long. Stipules ovate, persistent, densely covered with red strigae, 0.5 mm long. Inflorescence a many-flowered raceme; peduncle 2—3 mm long; pedicels 4—6 mm long. Bracts 2, lanceolate, 1.5—2 mm long; bracteoles like the bracts but 1—1.5 mm long. Flowers c. 1.25 cm in diam. Sepals ovate with 8 glands on the outside; glands oblong, 2—2.5 mm long exceeding the sepals with 0.5 mm. Petals with sagittate blade, obovate, toothed at the base, with a crest outside, 3.5—5 mm, claw 1.5—2.5 mm long. Anthers oblong-oval, 2 mm long. Samara brown, 2—3 cm long, striate-veined. Seed 1, ovate, yellow, 0.4 cm long.

Northern part of South America, West Indies.

In dry vegetations.

ST. EUSTATIUS: hill near Concordia (Boldingh 950, st. June); from Little Mountains to Venus Bay (Boldingh 990, st. June); slope of The Quill on the side of White Wall (Boldingh 1179, st. June); along the road from Oranjestad to Fort de Windt (Stoffers 3486, st. July); road to Sugar Loaf (Suringar s.n., fl. Ap. [L]); Sugar Loaf (Suringar s.n., fl. May [L]); from Pangga to Signal Hill (Suringar, fl. & fr. Ap. [L]); near Tumble Down Dick Bay (Suringar s.n., fl. May [L]).

Stigmaphyllon Jussieu, in Saint Hilaire, Fl. Bras. Mer. 3: 48. 1832

Woody vines. Leaves opposite, petiolate; the blades entire, coriaceous, with 2 large glands, generally attached to the long petioles. Stipules strigose, small. Inflorescence consisting of pedunculate umbel-like corymbs. Bract and bracteoles present, minute. Calyx 8-glandular, sepals persistent. Petals 5, yellow, erose, toothed or fimbriate. Stamens 10, of which 6 perfect, and 4 imperfect; filaments united at the base into a tube. Ovary 3-lobed; styles 3. Samara with the wing thickened on the superior margin. Seed 1, yellow.

Key to the species:

1. Leaves lanceolate, pinnately veined. *S. sericeum*
Leaves ovate to triangular, reticulately veined. *S. periplocifolium*

Stigmaphyllon sericeum Wright

WRIGHT, in GRISEBACH, Catal. pl. Cub. 43. 1866; BOLDINGH, Fl. D.W. Ind. Isl. 1: 205. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 238. 1913; NIEDENZU, in ENGLER, Pflanzenreich IV, 141: 480. 1928; LEON & ALAIN, Fl. Cuba 3: 14. 1953; FOURNET, Fl. Guadeloupe & Martinique 1471. 1978.

A vine, twigs sericeous, glabrescent in age, brown. Leaves opposite, short-petiolate; the blade lanceolate, acute to acuminate at the apex, obtuse at the base, pinnately-veined, 1.8—3.5 × 0.4—0.8 cm, glabrous above, sericeous beneath, margin revolute, entire; petioles 2—3 mm long. Stipules linear, strigose, 1 mm long, deciduous. Inflorescence a 3—10-flowered umbel; pedicels on the peduncle articulately fixed, 1—2 cm long. Bracts and bracteoles ovate up to 1 mm long. Flowers less than 15 mm in diam. Sepals ovate, 1.5 mm long, glands oblong exceeding the sepals with 1.5 mm. Samaras brown, 1.5 cm long; the ventral edge of the wing with a rounded auricle at the base. Seed not seen.

West Indies.

Known from the limestone area only.

ST. MARTIN: Low Lands (Arnoldo 3433, st. Jan.; Boldingh 3286, st. Sept.).

Stigmaphyllon periplocifolium (Desf.) Juss.

JUSSIEUX, Malp. Syn. 290. 1840; GRISEBACH, Fl. Br. W. Ind. Isl. 119. 1859 ['1864'], Duss, Fl. phan. Ant. franç. 116. 1897; URBAN, Symb. Ant. 4: 330. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 105. 1909; Fl. Ned. W. Ind. Eil. 237. 1913; NIEDENZU, in ENGLER, Pflanzenreich IV, 141: 476. 1928; FOURNET, Fl. Guadeloupe & Martinique 1471. 1978; — *Banisteria periplocaefolia* DESFONTAINES, Tabl. école bot. 136. 1804; — *Stigmaphyllon lingulatum* (Poir.) SMALL, North Amer. Fl. 25: 140. 1910; URBAN, Symb. Ant. 8: 335. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 441. 1924; QUESTEL, Fl. Isl. St. Bartholomew 127. 1941; LEON & ALAIN, Fl. Cuba 3: 14. 1953 — *Triopteris lingulata* POIRET, Encycl. Méth. Bot. 8: 104. 1808.

A vine, sometimes 4 m or more long, twigs strigose, glabrescent in age. Leaves opposite, petiolate; blade ovate to triangular, 1—10.5 × 0.8—6 cm, acute to obtuse or sometimes acuminate at the apex, rounded to cordate, obtuse or sometimes acute at the base, leathery, reticulately veined, margin revolute or plane, entire, sparsely covered with white hairs, glabrescent in age; petioles 0.3—1.5 cm long, at the base provided with two glands c. 0.5 mm in diam. Stipules strigose, oval or ovate, 0.8—2 × 0.5—1 mm, persistent. Inflorescence consisting of pedunculate corymbs; peduncle up to 2.5 mm long; pedicels c. 1.5 cm long, covered with white strigae. Bract 1, triangular c. 1.5 × 0.5 mm; bracteoles inserted halfway the pedicels, like the bracts but 0.9 × 0.2 mm. Calyx with 5 almost circular lobes, 3—4 mm long, with 2 glands on the outside of each lobe, glands oval, 1.5—2 mm long. Petals 5, ovate, yellow, c. 0.9 × 0.7 mm. Stamens 10; filaments united at the base into a tube; anthers attached by the base, with extrorse dehiscence, 1.5 mm long. Ovary densely covered with white hairs; styles 3, stigmas 2-lobed, one lobe smaller than the other, 4 mm long. Samara with two wings, one 16—20 × 5—6 mm, the other 3.4 × 2.3 mm. Seed 1, yellow, oval, 4 mm long.

West Indies.

Rather frequent, in various types of vegetation.

Vernacular name: goat bush (Windward Group).

ST. EUSTATIUS: The Quill, 300 m (Arnoldo 3193, flb. Dec.); seashore near Oranjestad (Boldingh 31, fl. May); in a garden in Oranjestad (Boldingh 96, fl. May); deserted plantation near Tumble Down Dick Bay (Boldingh 142, defl. May; 171, st. May); top of The Quill (Boldingh 191, fr. June; 212, st. June); slope of The Quill near Bengalen (Boldingh 686, st. June); between Oranjestad and Fort de Windt on the top of the Cliff (Boldingh 791, fl. June); along roads in Oranjestad (Boldingh 922, defl. June; 1129, st. June); lower part of the hills near Concordia (Boldingh 980, fr. June); Signal Hill, 150 m (Boldingh 1042, st. June; 1052, st. June); Cultuurvlakte (Suringar s.n., fl. & fr. Ap. [L]); without loc. (v. Groll-Meyer s.n., fl.; Suringar s.n., fl. & fr. May [L]).

ST. MARTIN: Experiment (Arnoldo 1251, fl. March); from Philipsburg to Guana Bay (Boldingh 2407, st. Aug.); from Philipsburg to Belvedere (Boldingh 2557, fl. Aug.); from Cul

de Sac to Marigot Hill (Boldingh 2629, st. Aug.); lower part of Milldrum Hill (Boldingh 3171, fl. Sept.); Tintamarre (Boldingh 3398, st. Sept.); Kanaal Rolandus (Stoffers 2276, fl. March); airfield (Stoffers 2383, fl. & fr. March; 2405, fl. March); hills along western side of Cul de Sac, north of Sentry Hill (Stoffers 2569, fr. March); Low Lands (Stoffers 2673, fl. Ap.); eastern slope of Naked Boy Hill, 0—100 m (Stoffers 2701, fl. Ap.); Naked Boy Hill, 100—200 m (Stoffers 2712, st. Ap.); Cole Bay Hill (Suringar s.n., fl. May [L]); Cul de Sac (Suringar s.n., fl. & fr. May [L]); without loc. (Suringar s.n., fl. May [L]).

Bunchosia L. C. Richard ex Humboldt, Bonpland & Kunth, Nov. Gen. & Spec. 5: 153. 1822 ed. fol.; 5: 153. 1822 ed. quart.

Low trees or shrubs; young parts either sericeous or more or less hispid or tomentose. Leaves opposite, simple, entire, petiolate; blade thick, glabrous or sparsely to densely pubescent, often with 2 glands on the lower surface near the base of the midrib. Stipules minute. Inflorescence consisting of narrow or widely branched panicle-like racemes. Calyx of 5 persistent, slightly accrescent sepals, 8(—10)-glandular. Petals 5, yellow or whitish, broad, concave, undulate or toothed. Stamens 10, all anther-bearing; filaments rather long, partly united, glabrous. Anthers short, with inconspicuous connective. Ovary (2—)3-locular; styles united; stigma 3-lobed, capitate or disk-like.

About 50—60 species in tropical continental America and the West Indies.

Key to the species:

1. Connective red or brown, leaves parchment-like..... 2
Connective yellow, leaves herbaceous, large..... *B. glandulifera*
2. Ovary glabrous, leaves large..... *B. jamaicensis*
Ovary sericeous, leaves smaller..... *B. glandulosa*

Bunchosia glandulosa (Cav.) Kunth

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 5: 155. 1822 ed. fol.; 5: 153. 1822 ed. quart.; GRISEBACH, Fl. Br. W. Ind. Isl. 115. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 112. 1897; URBAN, Symb. Ant. 4: 334. 1905; BOLDINGH, Fl. Ned. W. Ind. Eil. 239. 1913; BRITTON & MILLSPAUGH, Bahama Fl. 206. 1920; URBAN, Symb. Ant. 8: 341. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 445. 1924; NIEDENZU, in ENGLER, Pflanzenreich IV, 141: 665. 1928; QUESTEL, Fl. Isl. St. Bartholomew 127. 1941; FOURNET, Fl. Guadeloupe & Martinique 1477. 1978; — *Malpighia glandulosa* CAVAILLES, Diss. VIII. 411. 1789.

Shrub or sometimes a tree, up to 8 m tall; twigs with sparse white hairs, glabrescent in age. Leaves opposite, petiolate; blade obovate, lanceolate or oblong, acute to acuminate or obtuse at the apex, acute at the base, 3—8.5 × 1—4 cm, pinnately veined, glabrous, margin plane, entire; petioles 5—6 mm with 2 glands near the base. Stipules obovate, strigose, c. 2 × 1 mm, persistent. Inflorescence consisting of many-flowered racemes, up to 5 cm long; peduncle up to 4 cm long; pedicels 4—9 mm long. Bracts ovate, 1—2 mm long; bracteoles ovate, 0.5—1 mm long, provided with 1 gland. Sepals oblong, ciliate to glabrous or minutely pubescent, c. 3 mm long. Petals yellow up to 7.5 mm long, the blades suborbicular, erose or denticulate. Stamens connate to ⅓ of their

length; anthers somewhat exceeded by the rounded, brownish connective. Ovary bilocular, glabrous; styles connate to $\frac{1}{2}$ their lengths, stigmas somewhat pointed. Drupe ovoid to globose, brown-yellow, 7—10 mm in diam. Seeds 2, ovoid, brown, 5 mm long.

Bahamas, Haïti, Lesser Antilles and Amazonas (Brazil).

ST. EUSTATIUS: without loc. (Boldingh s.n., st.).

ST. MARTIN: Lower part of the hills between Mont Chambord and Mont Vernon (Boldingh 2963, st. Aug.); between Mont Chambord and the Saline (Boldingh 2924, fr. Aug.); near Simson Bay Village (Boldingh 3257, fr. Sept.); Mount Paradise (Boldingh 3322, fr. Sept.).

***Bunchosia glandulifera* (Jacq.) Kunth**

KUNTH, in HUMBOLDT, BONPLAND & KUNTH, Nov. Gen. & Spec. 4: 119. 1822 ed. fol.; 5: 154. 1822 ed. quart; DUSS, Fl. phan. Ant. franç. 112. 1897; URBAN, Symb. Ant. 4: 333. 1905; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 446. 1924; NIEDENZU, in ENGLER, Pflanzenreich IV, 141: 651. 1928; WILLIAMS, Fl. Trinidad & Tobago 1: 143. 1929; FOURNET, Fl. Guadeloupe & Martinique 1477. 1978; — *Malpighia glandulifera* JACQUIN, Collect 4: 207. 1791 ['1790']; Icon. 3: t. 469. 1792; — *Bunchosia nitida* Auct. non DECANOLLE; BOLDINGH, Fl. D.W. Ind. Isl. 1: 106. 1909; Fl. Ned. W. Ind. Eil. 239. 1913; Fl. D.W. Ind. Isl. 2: 50. 1914.

Shrub; twigs sparsely covered with white bi-branched hairs, glabrescent in age. Leaves opposite, petiolate; blade oblong to ovate, acute to acuminate at the apex, acute to obtuse at the base, pinnately veined, 3—14.5 × 1—6.5 cm, membranous, sparsely covered with white bi-branched hairs beneath, glabrous above, margin plane, entire; petioles up to 5 mm long. Stipules oblong, strigose, c. 2.5 × 1 mm, persistent. Inflorescence consisting of narrow racemes; peduncle 3—4.5 cm; pedicels 2—7 mm. Bract lanceolate to ovate, 2—6 mm long; bracteoles sometimes with glands, 1—1.5 mm long. Flowers 15—18 mm in diam. Sepals connate, 2.5—4.5 mm long, provided with glands on the outside. Petals yellow, ovate or obovate, lacerate, clawed, 4.6 mm long, the claw 3—4 mm long. Filaments connate $\frac{1}{4}$ — $\frac{1}{2}$ of their length; anthers semi-globose, $\frac{2}{3}$ mm in diam. Ovary sericeous, 2-locular with connate styles; stigma 2-lobed. Drupe globose brown-red, 7 mm in diam. Seeds 2, oblong, brown, 4 mm.

Lesser Antilles; Colombia and Venezuela.

Vernacular name: shimarucu kachu (Leeward Group).

CURAÇAO: calcareous hills near Siberië (Boldingh 5244 defl.); road from Siberië to San Pedro (Boldingh 5275 defl; 5276 fr.); Ronde Klip (Boldingh 5460, flb.).

***Bunchosia jamaicensis* Urb. & Ndz.**

URBAN & NIEDENZU, Ind. lect. Lyc. Brunsberg p. hiem. 10. 1898: BOLDINGH, Fl. Ned. W. Ind. Eil. 239. 1913; FAWCETT & RENDLE, Fl. Jamaica 4(2): 231. 1914; NIEDENZU, in ENGLER, Pflanzenreich IV, 141: 662. 1928; ADAMS, Flowering plants of Jamaica 399. 1972; — *Bunchosia lindeniana* JUSSEUX, Arch. Mus. Paris 3: 335. 1843; GRISEBACH, Fl. Br. W. Ind. Isl. 115. 1859 ['1864']; BOLDINGH, Fl. D.W. Ind. Isl. 1: 106. 1909.

Tree, 5—10 m tall. Leaves opposite, petiolate; blades oval to ovate, acute to obtuse at the apex, acute at the base, 9—14 × 4.5—7 cm, pinnately veined, glabrous, margin revolute, entire; petioles about 8 mm long, provided with two glands near the base. Stipules ovate, strigose, 1 mm long, persistent. Inflorescence consisting of many-flowered racemes. Sepals 5, ovate, obtuse at the apex, glands thick, 2.5 mm long, exceeding the sepals with 1.5 mm. Petals somewhat whitish, clawed; the blade cordate to ovate, 4 mm long, the claw 2—3 mm long. Stamens exerted; filaments united in the lower half; anthers obovate, connective purplish, slightly shorter than the anther-cells. Ovary 2-locular; styles coherent; stigma peltate. Drupe ovate to globose, brown. Seeds 2.

Jamaica and Saba.

In dry vegetation.

SABA: seaside of Tentgut Hill, 100 m (Boldingh 1655, fr. July).