

FAMILY 56.- MALPIGHIACEAE

Trees, shrubs or scandent lianas, the pubescence often of malpighiaceus hairs, i. e., stiff straight hairs attached by the middle, the pubescence thus strigose or sericeous, but sometimes also of spreading or laxly branched hairs; stipules present; leaves simple, opposite or subopposite; petiole often glandular; blades entire, dentate or palmate-lobed; flowers mostly bisexual, actinomorphic or usually obliquely zygomorphic by modification of 1 petal and diversification of stamens and styles, solitary or in many-flowered, axillary panicles, pseudo-racemes, or umbels; calyx of 5 sepals, more or less united at base, rarely valvate in bud, often with a pair of conspicuous glands; petals free, clawed fringed or toothed, alternate to the sepals, the interior petal often reduced and of another color; stamens (8-) 10, equal or unequal, sometimes with the 5 epipetalous stamens reduced, the filaments mostly united at base, anthers 2-celled, basifixed or dorsifixed, introrse, dehiscing longitudinally, the connective often large and conspicuous; ovary superior, mostly 3-locular, (2-) 3 (-4)-carpellate; placentation axile, the ovules solitary in each locule, pendulous, semi-anatropous; styles (2) 3, free, rarely connate, slender throughout or enlarged or dilated at apex; stigmas usually minute, entire or lobate; fruit usually a schizocarp of 3 samaras, sometimes a drupe with 1-3 pyrenes, a 2- or 3-locular

Banisteriopsis

dehiscent capsule or separable indehiscent cocci; seeds ovoid, endosperm lacking, cotyledons flat, slightly curved, folded, uncinate or spirally rolled.

About 60 genera with 850 species widely distributed in the tropics of both hemispheres, most abundant in America.

- a. Erect shrubs or trees.
 - b. Fruit a 3-2-locular, loculicidal capsule; leaves with a gland on each margin near the base; calyx without glands. *Galphimia*.
 - b. Fruit a drupe or nut, with 3-1 pyrenes; calyx with glands.
 - c. Filaments hairy at base; petals yellow; styles free, subulate-tipped; fruit with a single pyrene; inflorescence racemose; leaves without glands, with intrapetiolar stipules. *Byrsonima*
 - c. Filaments glabrous; stigmas capitate; fruit with 1-3 pyrenes, usually red.
 - d. Styles free; leaves mostly without glands; inflorescence corymbose or umbelliform; petals pink, purple or white; pyrenes crested. *Malpighia*.
 - d. Styles more or less united; leaves usually with 2 glands on the lower surface near the base; inflorescence racemose; petals yellow; pyrenes smooth or reticulate-sculptured. *Bunchosia*.
- a. Woody climbers; carpels of fruit separating, samaroid.
 - e. Fruiting carpels with a simple dorsal wing or crest.
 - f. Stigmas clavate or truncate, slightly capitellate; dorsal wing of the fruiting carpels with thick upper and thin lower margin. *Banisteriopsis*.
 - f. Stigmas on the ventral edge of dilated style-tips.
 - g. Flowers in racemes or panicles; wing of samara thickened on lower margin. *Heteropteris*.
 - g. Flowers in corymbs or subumbellate; wing of samara thickened on the upper margin. *Stigmaphyllon*.
 - e. Fruiting carpels laterally as well as dorsally winged or crested, the 4 lateral wings arranged in a X-shape; wings oblong. *Tetrapteris*.

BANISTERIOPSIS C. B. Robinson & J. K. Small, N. Amer. Fl. 25: 131. 1910.

Erect or scandent shrubs; leaves entire, petiolate, opposite or very rarely 3-whorled, often glandular at base; stipules interpetiolar, inconspicuous, deciduous; inflorescences leafy-bracteate panicles, the flowers mostly in 4-flowered umbels, rarely in corymbs, very rarely racemes; pedicels bi-bracteolate; sepals 5, usually with 8-10 glands; petals 5, unequal, long-unguiculate, mostly pink, rarely yellow or white, limb very often fringed or toothed; stamens 10, all fertile, usually unequal,

Banisteriopsis

the 3 posterior ones often smaller than the rest; filaments free or united at base, usually glabrous; ovary hirsute, 3-lobed, dorsally compressed-gibbose; styles 3, free, equal, the anterior one longer than the others, the stigmas terminal usually truncate, mostly capitellate; fruit of 1-3 samaras, attached to a pyramidal torus, becoming free, the upper margin of the dorsal wing thick, the lower thin, the seed-bearing portion smooth, tuberculate, verruculose, or bearing 1 or more winglets; seed oblong, the embryo straight, curved or inflexed, cotyledons unequal or subequal.

Species about 83, in tropical America.

B. lucida (Rich.) Small, N. Amer. Fl. 25: 133. 1910.

Banisteria lucida Rich., Ann. Soc. Hist. Nat. Paris 1: 109. 1792.

Stigmaphyllon nigrescens Kuntze, Rev. Gen. Pl. 89. 1891.

Climbing shrub, young parts gray-pilose; leaves opposite, elliptic, obovate- or lanceolate-oblong, coriaceous, 5-17 cm long, 1.2-5 cm broad, long-acuminate at apex, acute at base, gray-pilose when young, glabrous in age; petioles 4-8 mm long, glandless; umbels 4-flowered, usually 3-5 in axillary corymbs, much shorter than the leaves; peduncles to 1.5 cm long; sepals nearly orbicular, 2-3 mm long, ferruginous-sericeous without, the glands about half as long; petals yellow, ferruginous-sericeous without, 6-11 mm long, the fifth one 4-6 mm long; styles not foliaceous; samaras pink, sparingly or densely ferruginous-sericeous, 4.5-6.5 cm long, 16-18 mm broad at the top, gradually narrowing to 4.5 mm near the crested body, the inner edge of the wing with an acuminate ear about 12 mm long, body about 9 mm in diameter.

Collected by Kuntze (according to Niedenzu) probably from a cultivated plant in PR; St. Vincent, Trinidad, northern South America. Peralejo de monte.

BUNCHOSIA A. Rich. ex HBK., Nov. Gen. Pl. 5: 153. 1822.

Trees or shrubs; leaves opposite, entire, petioled, often with glands; stipules interpetiolar, distinct or united, acute, more or less linear-lanceolate, close to the petiole base; inflorescences of pseudo-racemes axillary or terminal; peduncles bibracteolate, 1 of the bracteoles usually glandular; flowers pedicellate; sepals 5, persistent, 2-glandular, often 2 or 4 pairwise united, hardly accrescent; petals 5, yellow or white, unguiculate, glabrous, the limb toothed or undulate; stamens 10, all fertile, filaments united at base, glabrous, anthers ellipsoid or oblong, connective inconspicuous; ovary 2- or 3-carpellate, 2- or 3-locular, villous or glabrous, styles 2 or 3, free or united, stigmas oblique-capitellate, receptacle flat, glabrous; drupes yellow, red or brown with 2

or 3 cartilaginous, smooth or somewhat rugose pyrenes; embryo straight; cotyledons thick.

A genus of about 50 species in the neotropics.

- a. Ovary and style glabrous.
 - b. Drupes usually less than 1 cm in diameter; leaves 1-3.5 cm broad, usually 2-glandular at base. *B. glandulosa*.
 - b. Drupes usually over 1 cm in diameter; leaves 2-7 cm broad, basal glands wanting. *B. nitida*.
- a. Ovary and style pubescent; leaves 3-10.5 cm broad with 6-14 very small glands along the basal margin. *B. glandulifera*.

B. glandulifera (Jacq.) HBK., Nov. Gen. Sp. Pl. 5: 154. 1822

Malpighia glandulifera Jacq., Collect. 4: 207. 1790.

Shrub or tree, young parts more or less sericeous; leaves membranous, broadly ovate or elliptic to obovate, 4-19 cm long, 3-11 cm broad, acute or short-acuminate at apex, obtuse or rounded at base, glabrous above, sparsely pubescent beneath, the 6-14 glandular dots in a row, 1 cm from the margin; petioles thin, sericeous, 4-10 mm long; racemes axillary, erect, 4-11 cm long, the peduncles, rachis and pedicels sericeous; sepals ovate, 3.5-5 mm long, nearly glabrous, margin ciliate, glands 8-9, obovate or oblong, 2-4 mm long; petals yellow, glabrous, ovate, obovate or suborbicular, 4-8 mm long; ovary sericeous, 2-celled, 2 mm high, style 1, sericeous, 3 mm long, stigmas 2, peltate; drupe ovate, 2-lobed, glabrous, fleshy, yellowish without, scarlet within, up to 2 cm in diameter.

Forests, Luquillo mountains, PR; Monserrat, Guadeloupe, Martinique, from Venezuela and Suriname to Peru.

Café, Café falso, Café forastero.

Fig. 56-1.

B. glandulosa (Cav.) L. C. Rich. in Juss., Ann. Mus. Ntl. Hist. Nat. 18: 481. 1811.

Malpighia glandulosa Cav., Diss. 8: 411. 1789.

Bunchosia glandulosa latifolia Ndz., Gen. Bunch. 11. 1898.

Shrub or tree to 8 m tall, the young parts slightly hairy; leaves oblong to lanceolate or elliptic-obovate, glabrous, 3-11 cm long, 1-3.5 cm broad, obtuse or acute at apex, narrowed or acute at base, bright green, somewhat paler beneath than above, the basal glands greenish; petioles 5-12 mm long; panicles often numerous, terminal on branchlets, to 6 cm long; peduncles and pedicels slender, finely pubescent to glabrate; sepals oblong or ovate-oblong, about 3 mm long; glands suborbicular; petals yellow, to 7.5 mm long, blade suborbicular, dentate or erose; ovary and style glabrous; stigma 2-lobed; drupes ovoid, red or orange, 2-lobed, 8-10 mm in diameter.



Fig. 56-1. *Bunchosia glandulosa* (Cav.) L. C. Rich. (from Little, Woodbury & Wadsworth).

Coastal woodlands and thickets and hillsides near the coasts, PR, Icacos, Vieques; Bahamas, Hispaniola, Lesser Antilles, Yucatan, Brazil.

Café forastero.

Bunchosia

B. nitida (Jacq.) L. C. Rich. in Juss., Ann. Mus. Ntl. Hist. Nat. 18: 481. 1811.

Malpighia nitida Jacq., Enum. 21. 1760.

Bunchosia polystachya DC., Prodr. 1: 581. 1824.

Shrub or tree, very young parts with few, appressed sericeous hairs; leaves chartaceous or coriaceous, elliptical or oblong to ovate-lanceolate or oblong-lanceolate, 4-17 cm long, 2-7 cm broad, long-acute or obtuse at apex, acute or narrowed at base, glabrous when adult, glands mostly absent; petioles slender, glabrous, 4-14 mm long racemes axillary, many-flowered, oblique-erect, up to 10 cm long; rachis ciliate, glands pubescent; sepals ovate to oblong, 4-5 mm long, margin ciliate, glands obovate to oblong; petals white, orbicular, ovate or obovate, 4-8 mm long, the margin glandular-toothed; ovary glabrous, ovoid, 2-lobed, 2-celled, style glabrous; drupe globose, 2-lobed, yellow or reddish, 6-16 mm in diameter.

Woodlands near Guánica and Mayagüez and Guajataca gorge, PR; Hispaniola, Monserrat to Grenada and Barbados; recorded by Krebs from St. Thomas.

BYRSONIMA L. C. Rich. ex Juss., Ann. Mus. Ntl. Hist. Nat. 18: 481. 1811.

Shrubs or medium-sized trees; the young parts sericeous or tomentose; leaves entire, opposite, simple, petiolate; stipules intrapetiolar, connate or free; pseudoracemes terminal, many-flowered; bracts and bracteoles small; flowers yellow, white, pink or reddish; sepals 5, usually bi-glandular; petals unguiculate, glabrous, the limb cordate or reniform, subentire; stamens 10, the filaments thick, flattened, often connate and adaxially hirsute at base; anthers oblong, introrse, glabrous or pilose; connective thickened equaling the theca or surpassing it; ovary glabrous or sericeous, ovoid, 3-carpelar, 3-locular; styles 3, distinct, subulate; fruit a drupe, with scant or rather copious flesh yellow or yellow-orange at maturity, the endocarp trilobular with 3-2 (1) seeds, cotyledons coiled, embryo circinnate.

A neotropical genus of about 120 species, ranging from Mexico to Argentina.

- a. Petals yellow; leaves mostly short-acuminate at apex.
 - b. Bracts 3 mm long or less, silky on both sides; leaves thin, upper surface shining, often pubescent beneath, especially along the margins with rusty or grayish strigose hairs. *B. spicata*.
 - b. Bracts over 3 mm long, tomentose beneath, glabrous or nearly so above; leaves leathery, upper surface slightly shining, often pubescent, especially along the midnerve, with ferruginous hairs. *B. crassifolia*.
- a. Petals pink or white; leaves mostly rounded or obtuse at apex.

Byrsonima

- c. Leaves spatulate to obovate, to 6 cm long, glabrous. *B. lucida*
- c. Leaves elliptic, to 9.5 cm long, densely gray-hairy beneath. *B. wadsworthii*

B. crassifolia (L.) HBK., Nov. Gen. Sp. Pl. 5: 149. 1822.

Malpighia crassifolia L., Sp. Pl. 426. 1753.

Byrsonima cubensis A. Juss., Ann. Sci. Nat. ser. 2, Bot. 13: 333. 1840.

Byrsonima crassifolia typica Ndz., Gen. Byrs. 2: 16. 1901.

Tree to 10 m tall, more often shrub 1-2 m tall, bark fissured and lenticellate; younger parts densely brown-tomentose; leaves obovate to elliptic or ovate, 4-15 cm long, 2-9 cm broad, short-acuminate or acute, sometimes rounded and apiculate at apex, acute or obtuse at base, densely pubescent beneath with stalked trichomes, becoming glabrescent; pseudoracemes usually solitary and unbranched, to 20 cm long; bracts ovate-lanceolate, 2-4 mm long; sepals 1.5-2.5 mm long, obtuse, recurved, each bearing 2 thick, oblong-ovoid glands; petals yellow, turning red-orange in age, 10-13 mm long, the blade suborbicular, more or less equaling the claw in length, the margin irregular; drupe ovate-globose, glabrous, 0.8-1.5 cm in diameter, green to yellow or orange.

Slopes, northwestern and western districts, PR; West Indies, continental tropical America.

Paralejo, Paralejo blanco, Maricao común.

B. lucida (Mill.) L. C. Rich. ex Juss., Ann. Mus. Ntl. Hist. Nat. 18: 481. 1811.

Malpighia lucida Mill., Gard. Dict. ed. 8, n. 9. 1768.

Malpighia cuneata Turcz., Bull. Soc. Nat. Mosc. 31: 390. 1858.

Byrsonima portoricensis Stahl, Estud. 2: 143. 1884.

Byrsonima cuneata (Turcz.) P. Wilson, Bull. N. Y. Bot. Gard. 8: 394. 1917.

Byrsonima ophiticola Small, Bull. Torrey Club 43: 456. 1916.

Shrub 2.5 m or small tree to 8 m tall, the twigs gray; bark gray, smooth; young parts ferruginous-strigose; leaves spatulate or obovate, 1.5-5.5 cm long, 0.7-2 cm broad, rounded to obtuse or acute at apex, cuneate at base, glabrous, shining and dark green above, paler beneath, the margin usually recurved; petioles 2-5 mm long; racemes up to 5 cm long, pedicels slender, up to 1.3 cm long, ferruginous-pubescent or glabrous; sepals ovate or oblong, about 3 mm long, acute or obtuse, ferruginous-strigose, glands oblong, 2 mm long; petals concave, white to red, the larger 5-7 mm long, the margin undulate; drupes globose, brown drying blackish, 9-12 mm in diameter.

Thickets, woodlands and hillsides at lower elevations, PR, Mona, Icacos, Vieques; Florida, Bahamas, West Indies except Jamaica.

Aceituna, Maricao, Palo de doncella, Sangre de doncella; Candle berry, Guano berry, Long Key Byrsonima.

Fig. 56-2.

B. spicata (Cav.) HBK., Nov. Gen. Sp. Pl. 5: 147. 1822.

Malpighia spicata Cav., Diss. 8: 409. 1790.

Byrsonima coriacea (Sw.) Kunth var. *spicata* (Cav.) Ndz., Pflanzenr. 141 (94): 700. 1928.

Byrsonima horneana Britt. & Small, Sci. Surv. P. R. & V. Isl. 5: 447. 1924.

Tree, to 25 m tall, the trunk to 40 cm in diameter; bark light brown, or gray, fissured; young parts and inflorescences ferruginous-strigose, leaves elliptic-oblong to lanceolate, 5-14 cm long, 1.5-4.5 cm broad, acutish, acuminate or obtuse at apex, acute at base, glabrate or sparsely pubescent beneath and on the midnerve above, petioles 5-12 mm long, pubescent; pseudoracemes terminal, 6-10 cm long; bracts ovate-lanceolate or linear, 1.5-3 mm long, ferruginous-pubescent without; flowers many, the pedicels up to 12 mm long; sepals 1.5-3 mm long, the glands oblong-obovate, 2 mm long; petals concave, yellow, showy, the larger ones 5-6 mm long; drupes globose, 9-11 mm in diameter, glabrous, yellow or yellow-orange at maturity.

Woods and forests at lower and middle elevations in wet or moist districts, PR; West Indies except Jamaica, Costa Rica to Colombia and Venezuela.

Maricao, Doncella.

Note: *B. horneana* Britt. & Small, is well within the range of variation of this species, and can hardly be considered as a separate taxon.

B. wadsworthii Little, Phytologia 4: 417. 1953.

Small to medium-sized tree, 5-15 m tall, the trunk to 20 cm in diameter, the crown dense and compact; bark brown or dark brown, fissured; leaves coriaceous, elliptic to obovate, 3-8 cm long, 2-5 cm broad, rounded or emarginate at apex, obtuse or rounded at base, green or dark green and shining above, densely grayish tomentose beneath, becoming glabrate, the margin slightly revolute; racemes terminal on branches, up to 7 cm long, grayish tomentose; pedicels up to 1 cm long; sepals triangular-ovate, 3 mm long, the glands oblong, 1 mm long; petals white to pink, 6 mm long, finely toothed; drupes ovoid, 10-12 mm long, pink or red.

In forests, high mountains, PR; endemic.

Almendrillo.



Fig. 56-2. *Byrsonima spicata* (Cav.) HBK. (from Little & Wadsworth).

GALPHIMIA Cav., Icon. 5: 61. 1799.

Shrubs, rarely trees; leaves membranaceous or subcoriaceous, petiolate or sessile, usually glandular, entire; petioles sometimes biglandular; stipules axillary, persistent; inflorescences terminal, pseudoracemes or sometimes paniculate or corymbiform, bracteate and bibracteolate; pedicels slender, articulate above the bracteoles; flowers yellow, actinomorphic or zygomorphic; calyx deeply 5-parted, usually glandular; petals 5, entire or dentate, unguiculate at base, usually unequal; stamens

10, distinct or connate, the anthers glabrous, basifixed, unappendaged, ovary sessile on the disc, usually 3-carpellate, 3-locular, the styles usually 3, terminal, slender, distinct, persistent in fruit; capsule usually angular-subglobose, tardily medially and loculicidally dehiscent; seed 1 per carpel, pendulous; embryo folded, cotyledons incumbent, subequal.

Species 10, from Texas to Argentina, in dryer habitats, one species widely cultivated.

G. gracilis Bartl., Linnaea 13: 552. 1839.

Fig. 56-3.

Thryallis gracilis (Bartl.) Kuntze, Rev. Gen. Pl. 1: 89. 1891.

Shrub 1-4 m tall, the branches dark to pale brown, the younger parts and inflorescences with sparse, subappressed rufous hairs; leaves lanceolate to ovate or elliptic-oblong, 1-8 cm long, 0.4-3.2 cm broad, acute to obtuse at apex, obtuse to acute at base, glabrous or nearly so above, glabrous or pubescent on the midnerve and paler beneath, sometimes bearing 2 or 4 usually sessile glands near the base; petiole 2-15 mm long; inflorescences terminal, usually pubescent, pedicels 6-17 mm long, calyx segments obovate-oblong to lanceolate, 3-4 mm long; petals unguiculate, yellow, the limb ovate to ovate-oblong, 5-9 mm long, subentire, mostly ciliolate; capsule 3.5-6 mm in diameter, usually glabrous; seeds reddish brown.

Occasionally spontaneous after cultivation and naturalized, PR, Vieques; widely grown and naturalized in tropical America; native to Mexico.

Consuelita, Lluvia de oro, Palo de doncella, Resedá, Sangre de doncella.

Note: This species has been named *G. glauca* Cav. (*Thryallis glauca* (Cav.) Kuntze), a different species, according to MacBryde (1970).

HETEROPTERIS HBK., Nov. Gen. Sp. Pl. 5: 163, *tab.* 450. 1822.

Mostly woody vines, rarely suffrutescent and erect; branches often lenticellate; leaves opposite, petiolate, often gland-bearing beneath; stipules obsolete; inflorescences terminal, cymose-paniculate, generally thyrsoïd, the ultimate branches arranged in cymes, umbels or racemes; bracts and bracteoles conspicuous; sepals 5, more or less united at base, 4 generally biglandular, sometimes all eglandular; petals yellow, pink or white, unguiculate; stamens 10, glabrous, somewhat unequal, the 5 episepalous stamens larger; anthers not appendaged; ovary 3-lobed, 3-carpellate and 3-locular; styles free, truncate at apex and obtuse, acute or uncinat; fruit a schizocarp of 2 or 3 samaras, the dorsal wing well developed, its dorsal margin thickened, the ventral margin thin.

Approximately 100 species in tropical America, a single species in West Africa.



Fig. 56-3. *Galphimia gracilis* Bartl. (from Flora of Panama, Ann. Miss. Bot. Garden).

Heteropteris

- a. Petals yellow; leaves 4-20 cm long, mostly acute to acuminate at apex; samaras 3.5-5.5 cm long.
 b. Mature leaves red- to brownish-sericeous beneath; sepals with erect tips. *H. wydleriana*.
 b. Mature leaves glabrous or nearly so beneath; sepals with recurved tips. *H. laurifolia*.
 a. Petals purplish; leaves 1-5 cm long, rounded or retuse at apex; samaras 2-3 cm long. *H. purpurea*.

H. laurifolia (L.) A. Juss., Malpigh. Synopsis (Ann. Sci. Nat. bot. sér. 2. 13:) 176. 1840.

Banisteria laurifolia L., Sp. Pl. ed. 2, 611. 1762.

Banisteria pubiflora DC., Prodr. 1: 391. 1824.

Heteropteris pubiflora (DC.) Bello, Anal. Soc. Esp. Hist. Nat. 10: 245. 1881.

Heteropteris laurifolia antillana Ndz., Arb. Bot. Inst. Braunsberg 2: 52. 1903.

Vine or climbing shrub, sometimes small tree, up to 6 m tall; young stems, petioles and inflorescences densely brown-sericeous, in age glabrescent and lenticellate; leaves coriaceous, oblong-elliptic or oblong-lanceolate, 5-20 cm long, 2-9 cm broad, acute or acuminate, sometimes obtuse at apex, acute to obtuse at base, glabrous or nearly so in age, reticulate-veined, usually eglandular, petioles to 1.2 cm long; inflorescences racemose; paniculate, solitary, terminal or in upper axils, to 12 cm long; sepals lanceolate or oblong, 2.5-4 mm long, glandular or eglandular; petals yellow, 4-5 mm long, crenulate, glabrous; samaras membranaceous, ferruginous-tomentulose, narrowly elliptic to subobovate, the dorsal margin almost straight, the ventral margin slightly undulate, narrowed near the base, with a protrusion on the apical end near the body.

Thickets, woodlands, forests, river-banks and arroyos, ascending to higher elevations, PR, Vieques; Greater Antilles, St. Croix, Central America to Colombia, Brazil, Peru and Bolivia.

Bejuco de buey, Paralejo, Paralejo velludo; Dragon withe.

H. purpurea (L.) Kunth, Nov. Gen. Sp. Pl. 5: 164. 1822.

Banisteria purpurea L., Sp. Pl. 427. 1753.

Banisteria parvifolia Vent., Choix des Plantes, pl. 51. 1803.

Heteropteris parvifolia (Vent.) DC., Prodr. 1: 591. 1824.

Heteropteris purpurea antillana Ndz., Arb. Bot. Inst. Braunsberg 2: 15. 1903.

Slender vine, up to 5 m long or longer, the young parts and inflorescences brown-strigose; leaves elliptic to oval, suborbicular or ovate, 1-5 cm long, 0.6-2.7 cm broad, rounded or retuse and occasionally mucro-

Heteropteris

nate at apex, usually rounded to obtuse at base, glabrous and dark green above, glabrate in age and paler beneath, the venation obsolete; inflorescences terminal and axillary, few-flowered, subumbellate, pedicels jointed below the middle; sepals elliptic or ovate, 2.5-3 mm long, rounded at apex, the glands about half as long as the sepal body; petals purple or pink, the larger ones up to 5.5 mm long; samaras 2-3 cm long, striate-veined, pubescent.

Thickets, woodlands and arroyos at lower elevations, PR, Muertos, Vieques; Cuba, Hispaniola, Lesser Antilles, northern South America. Bejuco de Paralejo; Bull withe.

H. wydleriana A. Juss., Ann. Sci. Nat., ser. 2. 13: 275. 1840.

Banisteria chrysophylla Bello, Anal. Soc. Esp. Hist. Nat. 10: 245. 1881.

Stigmaphyllon chrysophyllum (Bello) Stahl, Estud. 2: 147. 1884.

Heteropteris bellonis Urban, Symb. Ant. 1: 330. 1889.

Heteropteris chrysophylla (Bello) Cook & Collins, Contr. U. S. Nat. Herb. 8: 159. 1903.

Banisteria wydleriana (A. Juss.) C. B. Robinson ex Small, N. A. Fl. 25: 137. 1910.

Slender vine, up to 10 m long or longer, the young parts brown-tomentose; leaves ovate, oblong-ovate or oblong-elliptic, 4-15 cm long, 2-7.5 cm broad, acute acuminate or obtuse at apex, rounded to subcordate at base, shining and reticulate-veined above, reddish- or grayish-sericeous beneath; petioles 6-15 mm long; sepals ovate, 3-4 mm long, the glands longer than half the length of the sepal body; petals yellow; samaras 4.5-5.5 cm long, the wing red-sericeous.

Thickets and river-banks at lower and middle elevations, PR; endemic.

Ahorcacaballo.

MALPIGHIA L., Sp. Pl. 425. 1753.

Shrubs or small trees, rarely vines or scrambling shrubs; leaves opposite, petioled, usually biglandular at base; stipules interpetiolar, free; inflorescences axillary or sometimes cauliferous, umbelliform or corymbiform, sometimes racemose, peduncles bibracteolate near the middle, pedicels with a single bract near the base, articulated and bibracteolate near the middle; sepals 5, free, glandular or the anterior sepal eglandular; corolla zygomorphic, petals 5, free, white or pink, unguiculate, the limb orbicular or suborbicular, lacerate-dentate; stamens 10, fertile, glabrous, filaments connate at base, unequal; styles 3, free, glabrous, obtuse, truncate or uncinat at apex; ovary subglobose, 3-lobed or unlobed, 3-carpelled and 3-locular; fruit a fleshy drupe, red,

Malpighia

glabrous; pyrenes 3, ovoid and united, or oblong and separate at maturity.

A genus of 38 species in the West Indies, Mexico, Central America and northern South America.

The treatment of this genus follows "The Systematics of *Malpighia* (Malpighiaceae)" by José Luis Vivaldi (1979), an unpublished thesis.

- a. Leaves entire.
 - b. Leaves elliptic or lanceolate to ovate, oval or suborbicular, 2-9 cm broad.
 - c. Mature leaves glabrous. *M. emarginata*.
 - c. Mature leaves with two-branched stinging hairs beneath.
 - d. Styles straight, connivent, the apices obtuse or truncate; lateral filaments as thick or slightly thicker than the others, straight, connivent around the styles.
 - e. Leaves 2.5-11 cm long, the peduncles 2-5 cm long. *M. infestissima*.
 - e. Leaves 13-25 cm long, the peduncles 1-5 mm long. *M. fucata*.
 - d. Lateral styles open at an angle to each other, curved or twisted at least at base, the apices uncinat, the anterior style straight, the apex uncinat or obtuse; lateral filaments obviously thicker and longer than the others, usually curved over the styles; leaves strigillose or scabrous above at least when young; peduncles (2-) 11-14 (-30) mm long. *M. woodburyana*.
 - b. Leaves linear to linear-elliptic, 3-12 mm broad; calyx glands 6. *M. linearis*.
- a. Leaves sinuate-dentate or strongly undulate.
 - f. Leaves strongly undulate, marginal bristles more or less perpendicular to the leaf plane. *M. setosa*.
 - f. Leaves with margin more or less sinuate-dentate to crenate-dentate, the marginal bristles with unequal arms, one perpendicular to the leaf margin and one parallel to the leaf surface. *M. coccigera*.

***M. coccigera* L., Sp. Pl. 426. 1753 ssp. *coccigera*.**

Erect or prostrate shrub, to 1 m tall, the young branches reddish or green, glabrous to strigillose; leaf-blades broadly elliptic to obovate, 7-30 mm long, 4-20 mm broad, the apex and base usually broadly obtuse, the margin sinuate-dentate or sometimes entire, dark green and shining above, reticulate-veined, glabrous; inflorescences about 1.5 cm long; sepals 2.5-3.5 mm long, the glands 1-2.5 mm long; petals up to 1.25 cm long; lateral styles 3-4 mm long, much thicker and curved than the anterior one, the apex uncinat or hammer-shaped; fruit 5-15 mm in

Malpighia

diameter, 3-lobed, the pyrenes 5-8 mm long, the dorsal wing up to 1 mm broad, the lateral wings usually none.

Thickets, woodlands and forests at lower and middle elevations, in wet or moist districts, on limestone, PR; escaped from cultivation in the Lesser Antilles, Trinidad and elsewhere. The other subspecies in Cuba and Hispaniola.

Arbol de la dicha, Azota caballo.

***M. emarginata* Sessé & Mocino ex DC., Prodr. 1: 578. 1824.**

Malpighia puniceifolia auct., not L.

Malpighia puniceifolia var. *lanceifolia* Ndz., Gen. Malp. 8. 1899.

Malpighia puniceifolia var. *vulgaris* Ndz., Gen. Malp. 8. 1899.

Malpighia puniceifolia var. *obovata* Ndz., Gen. Malp. 8. 1899.

Shrub or small tree, up to 6 (-8) m tall, the young branches green, strigillose, the older branches smooth or lenticellate; leaves subchartaceous to chartaceous, obovate to ovate or orbicular-obovate, 1-8.5 cm long, 1-5 cm broad, obtuse and usually emarginate at apex, acute to cuneate or obtuse at base, both surfaces strigillose when young, becoming glabrous and smooth; petioles 1-4 mm long; inflorescences 1-6-flowered, an umbel-like raceme, to 2.5 cm long, strigillose; sepals 2-4 mm long, densely strigillose, glands 7-10; posterior petal 6.5-12 mm long; styles truncate or obtuse at apex; fruit 1-3 cm in diameter when fresh, glabrous, subglobose or depressed, usually 3-9-lobed, pyrenes 7-15 mm long.

Occasionally spontaneous after cultivation for its fruits, PR, Mona, Vieques; West Indies, Mexico and Central America, tropical South America.

Acerola, Cereza, Cereza colorada; West Indian cherry.

Fig. 56-4.

***M. fucata* Ker-Gawl in Edw., Bot. Regist. 3: 4. 189. 1917.**

Malpighia macrophylla Schlecht. ex Colla, Hortus rip. 84, t. 11. 1824. not Pers. 1805.

Malpighia fucata var. *macrophylla* (Schlecht.) Ndz., Gen. Malpigh. 11. 1899.

Malpighia fucata var. *longifolia* Ndz., Gen. Malpigh. 11. 1899.

Malpighia fucata var. *elliptica* Ndz., Gen. Malpigh. 11. 1899.

Malpighia shaferei Britt. & Wils., Bull. Torr. Club 43: 456. 1916.

Shrub or small tree, to 3-4 m tall, the branches grayish brown, lenticellate, striate; leaf-blades subchartaceous, elliptic to oblong, 7-25 cm long, 2-9 cm broad, acute, acuminate, obtuse, sometimes retuse at apex, usually mucronulate, acute to obtuse or subcordate at base,

Malpighia

posterior petals 5.5-8 mm long; fruit 10-12 mm in diameter, the pyrenes 8-11 mm long.

Arid coastal thickets on limestone at low elevations, Mona Island, PR; Hispaniola.

M. woodburyana Vivaldi.¹

Malpighia infestissima Ndz., as to description, not as to type.

Shrub or small tree 1-5 m tall, rarely climbing shrub, the young branches green, densely strigillose with V-shaped hairs; leaf-blades chartaceous, ovate, oblong or elliptic, 3.5-14 cm long, 2.5-9 cm broad, obtuse or emarginate, rarely acute at apex, cordate or obtuse at base, the margin entire, usually revolute, armed with bristles 2.5-5 mm long, 2-branched, sessile, scabrous above, strigose beneath; petioles 1-3 mm long, strigillose; inflorescence a peduncled, umbel-like contracted raceme, flowers 2-4 (-20), peduncle 2-30 mm long, pedicel 5-38 mm long; sepals 2.5-3 mm long, strigillose, the glands 6-8 (10); petals white or pink, the posterior one 7.5-11 mm long; fruits subglobose, 15-20 mm in diameter, bright red, 6-9-lobed.

Coastal scrub and thickets in dry areas, Magueyes Island, Parguera, PR, Vieques, Culebra; Virgin Islands.

Olaga; Cowhage cherry.

STIGMAPHYLLON Juss. in St. Hill., Fl. Bras. Mer. 3: 48. 1833.

Vines, lianas or rarely shrubs; leaves opposite or subopposite, simple, entire, dentate or lobate, often variable in shape on the same plant, petiolate; inflorescences of umbelliform corymbs, umbels or pseudo-umbels, arranged in dichotomous cymes; bracts and bracteoles conspicuous; sepals 5, usually broad, with 4 pairs of glands; petals yellow, unguiculate, the limb orbicular or elliptic, the margin denticulate or fimbriate, the interior petal often smaller; stamens 10, unequal, the filaments glabrous, flattened, shortly connate at base, the anthers unequal, the 4 opposite the lateral sepals generally reduced and practically sterile, the 3 opposite the pistil larger; ovary 3-locular, 3-lobed, the styles 3, free, erect or curved, somewhat flattened, dilated at apex, spatulate-truncate, with the inner angle obtuse and stigmatic, the medial style bilaterally and symmetrically winged or appendiculate; fruit a schizocarp of three samaras, with a long broad wing, this thickened along the ventral edge, the body smooth or cristate, rarely the wing reduced to a crest.

A neotropical genus of about 80 species.

- a. Fruit almost wingless, the body with about 3 lateral tuberculate ribs, the dorsal wing reduced to a short, obtusely triangular, terminal crest; styles shortly horizontally dilated, pediform at apex. *S. ovatum*.

1. This *nomen novum* is been published in a forthcoming paper.

Stigmaphyllon

- a. Fruit with a long, membranaceous or papyraceous, well developed, dorsal wing; styles with a foliaceous appendix, or pediform at apex.
 b. Style-tips expanded, foliaceous; leaves acuminate. *S. puberum*.
 b. Style-tips truncate or foot-like; leaves acute, rounded or emarginate at apex.
 c. Leaves tomentose beneath, not reticulate-veined above; pedicels jointed near the base. *S. floribundum*.
 c. Leaves glabrous or nearly so at maturity, reticulate-veined above; pedicels jointed between the base and the middle. *S. emarginatum*.

S. floribundum (DC.) C. Anders., Syst. Bot. 11: 128. 1886.

Banisteria floribunda DC., Prodr. 1: 589. 1824.

Banisteria tomentosa Desf. ex DC., Prodr. 1: 589. 1824.

Heteropteris nitida obtusifolia Kuntze, Rev. Gen. Pl. 88. 1891.

Banisteria rotundifolia Sessé & Moc. Fl. Mex. ed. 2, 116. 1894.

Stigmaphyllon tomentosum (Desf. ex DC.) Nied, Ind. Lect. Lyc.

Bunsberg p. hiem. 1899-1900: 5. 1899.

Vine, trailing or twining, young branches whitish-strigose; leaves very variable, from linear (mostly in juvenile or on sterile branches) to suborbicular, 1-14 cm long, 1-9 cm broad, usually emarginate and apiculate at apex, cordate, rounded or truncate at base, glabrous or pubescent above near the base when adult, silky-tomentose beneath; petioles up to 2 cm long pubescent; peduncles and pedicels pubescent; sepals suborbicular to reniform, 2.5-4 mm long; petals yellow, the larger ones 10-13 mm long; anterior style i.e. that opposite the glandless sepals, shorter and thinner than the two posterior styles as are also the accompanying stamens; style-tips foot-like; samaras up to about 2 cm long, sericeous, with an ovate appendage at the base, and two lateral appendages.

Thickets, woodlands, forests and river-banks at lower and middle elevations, PR; Virgin Islands, Lesser Antilles south to St. Lucia.

Bejuco de menta, Bejuco de toro, Bejuco de toro de hoja grande, Bejuco sabanero.

Note: Adams (1972: 400) considers this species for the Greater Antilles; we have no record from Cuba nor Hispaniola; Fournet (1978) does not cite this species in the French West Indies. Here belongs the plant erroneously cited by Britton & Wilson (1924: 440) as *S. ledifolium* (HBK.) Small (= *S. diversifolium* (HBK.) A. Juss.)

S. ovatum (Cav.) Ndz., Ind. Lect. Lyc. Brunsb. 1900 (2): 31. 1900.

Banisteria ovata Cav., Diss. 9: 429, tab. 457. 1790.

Brachypteris borealis Juss., Ann. Sci. Nat. sér. 2, Bot. 13: 291. 1840.

Brachypteris ovata (Cav.) Small, N. Am. Fl. 25: 138. 1910.

Shrub or rather large vine, the stems appressed-pubescent when young, becoming glabrous, leaves ovate to ovate-lanceolate, 3-12 cm long, 1.3-5.5 cm broad, obtuse to acute at apex, obtuse to cuneate or rounded and biglandular at base, glabrous above or nearly so, paler beneath and strigose or glabrate in age, the margin entire; petioles 4-15 mm long, sparsely pubescent; inflorescence umbelliform, 2-8-flowered, subtended at base by reduced leaves, the pedicels 1-3 cm long; sepals deltoid to ovate, obtuse, 3-4 mm long, appressed-pubescent; petals 9-16 mm long, glabrous, yellow, denticulate; fruits subglobose, 1- or 2-coccous, 10-12 mm in diameter, the dorsal wings thick, short, obtusely triangular, subcoriaceous, 3-4 mm long.

Coastal thickets, PR, Vieques; West Indies, Trinidad and Tobago, Central America, northern South America, from British Honduras to Brazil, West Africa.

S. emarginatum (Cav.) A. Juss., Ann. Sci. Nat. Bot., sér. 2, 13: 290. 1840.

Banisteria emarginata Cav., Diss. 9: 425. 1790.

Banisteria periplocifolia Desf. ex DC., Prodr. 1: 589. 1824.

Triopetris lingulata Poir. in Lam., Encycl. 8: 104. 1808.

Stigmaphyllon lingulatum (Poir.) Small, N. Amer. Fl. 25(2): 140. 1910.

Stigmaphyllon periplocifolium (Desf.) A. Juss., Ann. Sci. Nat. Bot. sér. 2, 13: 290. 1840.

Vine, sometimes 4 m long or longer, the twigs strigose; leaves narrowly to broadly ovate or oval, 2.5-10 cm long, 1-6 cm broad, occasionally larger, rounded and emarginate and often mucronate, rarely acute at apex, rounded or cordate at base, glabrous or nearly so at maturity, shining above, paler beneath, reticulate-veined; petioles 4-20 mm long; inflorescences paniculate, many-flowered, sericeous; sepals ovate to suborbicular, 3-4 mm long, sericeous, the glands half as long; petals 10-13 mm long; samaras 1.5-2 cm long, striate-veined, sericeous at base, with a lateral appendage at base, often turning reddish or purple at maturity.

Thickets, woodlands and hillsides at lower elevations, PR, Mona, Desecheo, Icacos, Vieques; West Indies.

Bejuco de San Pedro.

Fig. 56-5.

S. puberum (L. C. Rich.) A. Juss., Ann. Sci. Nat. sér. 2, Bot. 13: 289. 1840.

Banisteria pubera L. C. Rich., Act. Soc. Ntl. Hist. Nat. 1: 109. 1792.

Vine with slender branches, the twigs, petioles and peduncles clothed with appressed brownish hairs; leaves ovate, ovate-elliptic,

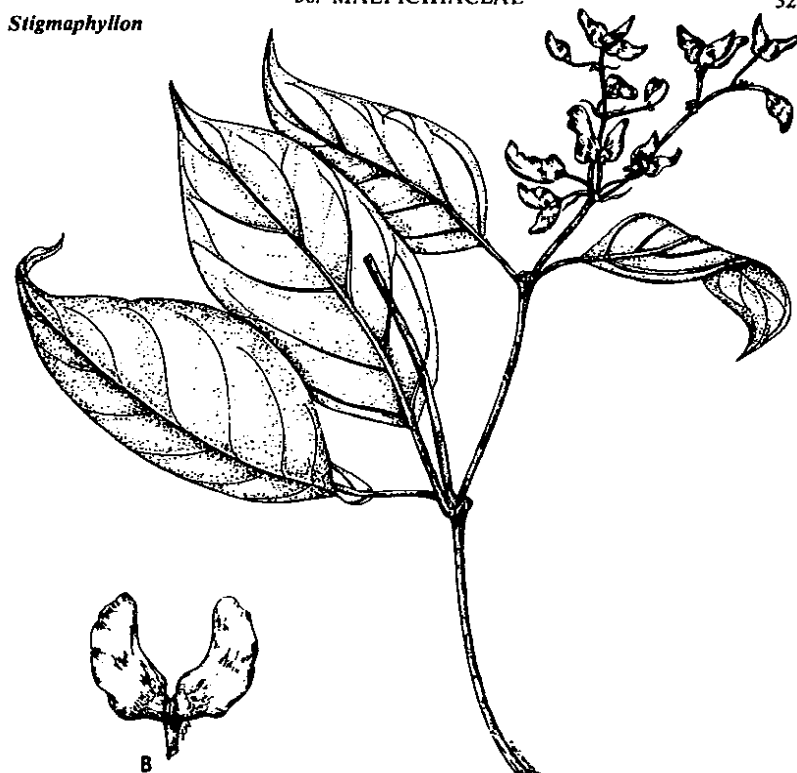


Fig. 56-5. *Stigmaphyllon puberum* (Rich.) A. Juss.— A) fruiting branch; B) fruit (from Flora of Panama, Ann. Miss. Bot. Garden).

oblong-ovate or lance-ovate, 7-17 cm long, 3-10 cm broad, acuminate at apex, obtuse to rounded or subcordate at base, glabrous above except the midnerve, glandular and densely appressed-pubescent beneath, margin entire; petioles 1-4 cm long with 2 sessile glands at apex; inflorescence of corymbose or subumbellate racemes, axillary, to 12 cm long, pedicels 2-5 mm long; flowers 8-16 per umbel, peduncles 7-20 mm long, sepals 2.5-3.5 mm long, ovate-oblong, rounded at apex, 4 of them 2-glandular; petals yellow, tinged red, glabrous, 7-18 mm long; samaras 2.5-3 cm long, pubescent.

In wet situations at low elevations, eastern PR; West Indies, Costa Rica to Peru.

TETRAPTERIS Cav., Diss. 9: 443. 1790.

Woody vines, rarely shrubs; leaves opposite, simple, petiolate, membranaceous to coriaceous, entire; petioles sometimes with glands, stipules small; inflorescences axillary or terminal corymbs or umbels; peduncles 2-bracteolate distally, pedicels often with conspicuous bracts

and bracteoles; sepals 5, ovate or oblong, united at base, usually 4 of them or all 5 2-glandular, petals yellow, unguiculate, glabrous, the limb orbicular or elliptic; stamens 10, the filaments united into a tube at the base; ovary 3-lobed, tomentose or hirsute, styles free, erect, glabrous, generally one thinner, the apex truncate; fruit a schizocarp of 2 or 3 samaras, the mericarp with a narrow dorsal wing and 4 lateral wings, these forming an X as seen from above.

About 90 species, in tropical America.

T. citrifolia (Sw.) Pers., Synops. Pl. 1: 508. 1805.

Triopteris citrifolia Sw., Prodr. 75. 1788.

Tetrapteris inaequalis Cav., Diss. 433. 1790.

Banisteria bracteata DC., Prodr. 1: 590. 1824.

Tetrapteris paniculata Bello, Anal. Soc. Esp. Hist. Nat. 13: 245. 1881.

Climbing shrub to 6 m long or longer; leaves chartaceous, ovate, oval, oblong-ovate to obovate, 5-17.5 cm long, 2.3-8.3 cm broad, acute or short-acuminate at apex, usually rounded or cordate at base, glabrate in age, more or less shining; petioles 1-1.3 cm long, puberulous to glabrate; inflorescences in terminal leafy-bracted panicles longer than the leaves, shortly white-hairy; bracts ovate-acute or lanceolate, 1.5-3 mm long; sepals oval or oblong-ovate, 3-4 mm long, the glands about half as long as the sepal body; petals yellow, 4-7.5 mm long, ovate to suborbicular; samaras 3-4 cm long, pubescent, with a median ridge.

Thickets, woodlands, river-banks and arroyos, at lower and middle elevations, PR, Vieques; Jamaica, Hispaniola, St. Croix, some of the Lesser Antilles, Tobago.

Bejuco de paralejo, Bejuco de sopla.

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