

107. MALPIGHIACEAE

Trees or erect or climbing shrubs. Leaves usually opposite, simple and usually entire, sometimes with pungent hairs especially beneath, often with glands on petiole or lamina; stipules present or absent. Flowers mostly bisexual, actinomorphic or often slightly zygomorphic, in usually bracteate clusters, umbelliform cymes, racemes or panicles. Perianth biseriate; sepals 5, mostly free, imbricate or rarely valvate, often with paired glands; petals 5, free, often convolute, clawed, usually unequal and often toothed or fringed. Stamens 10 in 2 whorls, some sometimes reduced to staminodes, hypogynous, often basally connate; anthers 2-locular, opening lengthwise. Ovary superior, (2-) 3 (-5)-locular and -lobed; ovules 1 in each loculus, semianatropous, pendulous from axile placentas; styles as many as carpels, free or rarely connate; stigmas entire or lobed, often oblique. Fruit a samara, schizocarp, capsule, berry or drupe. Seeds with a straight or curved embryo; endosperm lacking.

About 60 genera with some 850 species mostly in the American tropics.

1 Erect shrubs or trees:

- 2 Fruit schizocarpic; leaves with a gland on each margin near the base; inflorescence racemose; flowers fragrant; calyx without glands; petals yellow; filaments glabrous; styles free; cultivated ornamental, sparsely naturalized; native of Mexico; *Galphimia*, Shower of Gold (*Thryallis gracilis* (Bartl.) Kuntze) *Galphimia gracilis* Bartl.

2 Fruit drupaceous with 1-3 pyrenes; calyx with glands:

- 3 Filaments hairy at base; styles free, subulate-tipped; fruit with a single pyrene; inflorescence racemose; leaves without glands, with intrapetiolar stipules

1. *Byrsonima*

- 3 Filaments glabrous; stigmas capitate; fruit with 1-3 pyrenes, usually red:

- 4 Styles free; leaves mostly without glands; inflorescence corymbose or umbelliform; petals pink, purple or white; pyrenes crested 2. *Malpighia*

- 4 Styles united; leaves usually with 2 glands on lower surface; inflorescence racemose; petals yellow; pyrenes smooth or reticulate-sculptured 3. *Bunchosia*

1 Woody climbers; carpels of fruit separating, samaroid:

- 5 Fruiting carpels with a single dorsal wing or crest:

- 6 Flowers in racemes or panicles; wing of samara thickened on lower margin

4. *Heteropteris*

- 6 Flowers in corymbs or subumbellate:

- 7 Fruiting carpels with a short thick triangular crest

5. *Brachypterys*

- 7 Fruiting carpels with an oblong-obovate wing, 1.5 cm. or more long, the thickened upper margin lobed adaxially at its base

6. *Stigmaphyllon*

- 5 Fruiting carpels laterally as well as dorsally winged or crested:

- 8 Petals pink or mauve; spreading wing of samara 3-lobed, Y-shaped

7. *Triopteris*

- 8 Petals yellow:

- 9 Samara with 4 lateral wings arranged in a X-shape; wings oblong

8. *Tetrapteris*

- 9 Samara with 2 lateral wings; wings semicircular or obversely deltate

9. *Mascagnia*1. *BYRSONIMA* L. C. Rich. ex Juss. (1811)

Petals yellow; leaves usually tomentose beneath but varying to nearly glabrous

Petals white to pink or purplish; leaves more or less glabrous

1. *coriacea*2. *trinitensis*1. *B. coriacea* (Sw.) DC., Prodr. 1: 580 (1824).—Hogberry, Locust-berry Tree.

Tree 3-16 m. high; trunk often slender; crown spreading; young leaves on both surfaces silvery- or ochraceous-tomentose; leaf-blades elliptical, oblong-elliptical to lanceolate, sometimes obovate, cuneate at base, obtuse, acute, acuminate or cuspidate at tip, 5-17 cm. long, 2-8.5 cm. broad, variably brownish-tomentose beneath, usually becoming dark green and glossy adaxially; racemes up to 14 cm. long; pedicels up to 13 mm. long; sepals ovate, about 4 mm. long; petals including claw 8-9 mm. long, fading reddish or orange-red; fruit subglobose, ripening brownish-yellow, about 1 cm. in diameter.

Common in secondary woodlands; 200-3000 feet; fl. Apr-Oct, fr. July-Feb. *A* 7817! 7973! *H* 8411! 9093! *H* & *P* 13922! *P* 19687! Northern S. Amer., West Indies.

2. *B. trinitensis* A. Juss. in Ann. Sci. Nat. sér. 2, 13: 334 (1840).—*B. glaberrima* Niedenzu (1901). *B. bracteata* F. & R. (1917). *B. craigiana* F. & R. (1917). *B. smallii* F. & R. (1917).

Shrub 2 m. or tree up to 13 m. high; leaf-blades oblong, elliptical or obovate, cuneate at base, rounded, obtuse or subacute at tip, 2-9 cm. long, 1.5-4.2 (-5.5) cm. broad, rusty-puberulous at least at first, becoming glossy adaxially; racemes 3-8 (-11) cm. long, rachis and pedicels brown-tomentose at first; pedicels up to 13 mm. long; sepals ovate, 4-5 mm. long, the glands about half as long; petals including claw 8-9 mm. long, darkening on drying, the mid-petal often acquiring orange tints; fruit globose, up to about 1 cm. in diameter.

Local and uncommon (Clar., Manch., St. James, Trel.), in woodlands on rocky limestone; 1500-2500 feet; fl. and fr. May-Dec. *A* 12609! *H* 10595! *P* 11397! *Webster* & *Proctor* 5417! Dominica, Martinique, Trinidad. Several minor poorly understood variants are included here.

2. *MALPIGHIA* L. (1753)

- 1 Leaf-margin sinuate-dentate with spines; leaf-blade rounded, mostly less than 2 cm. long, glossy adaxially; petals pink or white; probably only in cultivation at the present time; native of West Indies *M. coccigera* L.

1 Leaf-margin entire, not spiny:

- 2 Leaves glabrous or usually so, membranous; petals not or only narrowly keeled, thus unopened corolla smoothly rounded or at most shallowly angled; drupe oblate to subglobose:

- 3 Leaves acute or acuminate at tip; inflorescence mostly axillary, pedunculate 1. *glabra*

- 3 Leaves obtuse or rounded at tip:

- 4 Inflorescences axillary and on older twigs or cauliflorous; petals at least crenate

2. *punicifolia*3. *obtusifolia*

- 2 Leaves with large pungent medifixed hairs mostly on abaxial surface at least when young; petals keeled, thus unopened corolla winged:

- 5 Keel of petals about 1 mm. broad, hooked at free tip; leaves elliptic-lanceolate; drupe subglobose but slightly narrowed to flat tip; inflorescence subsessile 4. *incana*

- 5 Keel of petals about 0.5 mm. broad, decurrent at tip:

- 6 Leaves oblong to broadly elliptical, firmly papery to subcoriaceous:

- 7 Primary branches of inflorescence evident, each raceme slender-peduncled

5. *harrisii*

- 7 Primary branches of inflorescence obsolete or very short and massive

6. *fucata*

- 6 Leaves narrower, elliptical to elliptic-lanceolate, thin; inflorescence subsessile or primary branches less than 1 cm. long:

- 8 Leaf-tip mostly long-acute to acuminate; drupe somewhat pyramidal

7. *biflora*

- 8 Leaf-tip acute or obtuse; drupe subglobose

8. *urens*1. *M. glabra* L., Sp. Pl. 1: 425 (1753).—Wild Cherry.

Shrub 0.6-3 m. or tree to 6 m. high with numerous often ascending branches; leaves ovate, elliptical or lanceolate, sometimes rhombic, narrowly cuneate to rounded at base, up to 8 (-9) cm. long and 4 (-5) cm. broad, essentially glabrous but often with patches of erinosity especially beneath, probably as a response to insect infestation; peduncles 2-15 mm. long; glands on sepals about half as long; petals about 8 mm. long; stigmas bilateral, each lobe truncate; fruit about 1 cm. in diameter.

Very common in rough pastures, thickets and on rocky ground; SL—3000 feet; fl. and fr. most of the year. *A 8208! 9903! H 8848! 9646! Powell 757! 1016!* Continental tropical Amer. south to Venezuela, Cuba, Hispaniola, Virgin Is.

2. *M. puniceifolia* L., Sp. Pl. ed. 2, 1: 609 (1762).—Barbados or West Indian Cherry.

Shrub to 5 m. or tree to 12 m. high; leaves thin, up to about 8 cm. long; inflorescences sessile or shortly pedunculate; fruit globose to depressed-globose, up to about 2.5 cm. broad in cultivars.

Uncommon in the wild state, common in cultivation at low elevation; fl. and fr. sporadically, mostly during wet weather. *A 8039! Asprey UCWI 2161! 2169! C. B. Lewis!* The wild variants occurring in thickets on limestone in Jamaica tend towards arborescence and cauliflory; when taxonomic criteria in this genus are better understood these variants may prove to be separable. Cultivated variants are grown throughout the West Indies and have been introduced into tropical Asia and Africa.

3. *M. obtusifolia* Proctor in Bull. Inst. Jam., Sci. ser. 16: 20, t. 7 (1967).

Dense-crowned shrub or tree up to 4 m. high; leaves subsessile, elliptical to obovate, broadly cuneate to rounded at base, sometimes shortly emarginate at tip, 3–5 cm. long, 1.5–3.5 cm. broad; peduncles 5–15 mm. long; secondary branches up to 10 mm. long; pedicels up to 15 mm. long; sepals about 2 mm. long.

Rare (Clar., St. James, Trel.), on cliffs and in woodlands on limestone; 1600–2500 feet; fl. June–Aug. *P 22571! Endemic.*

4. *M. incana* Mill., Gard. Dict. ed. 8 (1768).

Shrub 1.2–2 m. or tree to 5 m. high; leaves elliptic-lanceolate to lanceolate, cuneate to rounded at base, mostly acute at tip, firmly papery, 3–8 cm. long, 1–2.5 (–3) cm. broad; peduncles mostly less than 5 mm. long; pedicels up to 15 mm. long; fruit up to 12 (–15) mm. broad.

Local (St. Andr., St. Cath., St. Thom.), in thickets on gravel and arid limestone; 25–300 feet; fl. July, Oct–Dec, fr. July–Feb. *A 9777! H 10048! Loveless UCWI 2377! P 23935! Mexico, Cuba.*

5. *M. harrisii* Small in Torreya 13: 77 (1913).

Slender-branched shrub or tree up to 5 m. high; leaves mostly broadly elliptical and rounded at base and apex, 7–12 cm. long, 4–6.5 cm. broad, the abaxial pungent hairs caducous; racemes clustered, the peduncles several together, up to 15 mm. long; pedicels jointed; sepals about 3 mm. long; petals 12–13 mm. long; fruit not known.

Rare (Clar., St. Ann), in woodland on limestone; about 2500 feet; fl. Aug–Oct. *H 11189! Webster & Proctor 5402! Endemic.*

6. *M. fucata* Ker-Gawl. in Edw., Bot. Regist. 3: t. 189 (1817).

Shrub 2–3 m. or tree up to 6 m. high; branches glabrescent, sometimes densely hairy when young; leaves as above, up to 13 (–21) cm. long and 7.5 (–11) cm. broad; pedicels up to 2.5 cm. long; sepals 3–4.5 mm. long; petals 6–7 mm. long; fruit subglobose, about 7 mm. long.

Local (Manch., Trel., St. Ann), in woodland on limestone; 1500–3000 feet; fl. Mar, June, Nov, fr. Jan, July. *A 11235! 12744! H & P 14326! P 9908! 23111! Puerto Rico.*

7. *M. biflora* Poir. in Lam., Encycl. Méth. Bot. 4: 326 (1797).—Cowitch Cherry.

Shrub 0.6–3 m. high, usually erect, sometimes scrambling; leaves narrowly ovate to lanceolate, cuneate to rounded at base, up to 8 (–12) cm. long and 2.5 (–4) m. broad, the pungent hairs orange-yellow and up to 6 mm. long; peduncles 1–10 (–15) mm. long; pedicels up to 20 mm. long; sepals 2.5 mm. long; larger petal up to 12 mm. long; fruit mostly less than 1 cm. broad.

Common in thickets and woodlands on limestone; SL—3000 (–5000) feet; fl. and fr. all the year. *A 5663! 11250! H 12676! C. B. Lewis! Cuba, Hispaniola.*

8. *M. urens* L., Sp. Pl. 1: 426 (1753).

Shrub like the last. This species, as diagnosed by Fawcett & Rendle (1920), has not been matched by recent collections. It is certain that the specimens cited by those authors do not refer to the same taxon. Niedenzu (Pflanzenr. 4 (141): 628 (1928)) has referred specimens cited by Fawcett & Rendle under *M. urens* and *M. biflora* to *M. martinicensis* Jacq. var. *jamaicensis* Urb. & Niedenzu (1899), but these are probably all *M. incana*.

3. *BUNCHOSIA* L. C. Rich. ex Juss. (1811)

Leaves mostly narrowly elliptical or rhombic-elliptical, cuneate at base, up to 10 cm long and 5 cm. broad; drupe less than 10 mm. long and broad
1. *media*
Leaves broadly elliptical, broadly cuneate to rounded at base, up to 18 cm. long and 10 cm. broad; mature drupe more than 10 mm. long and broad
2. *jamaicensis*

1. *B. media* (Ait. f.) DC., Prodr. 1: 581 (1824).—*Malpighia media* Ait. f. (1811).
B. swartziana Griseb. (1860).

Shrub or tree 1–6 m. high, sometimes scrambling especially in arid areas; leaves usually acuminate, racemes variable, shorter or longer than leaves; pedicels pubescent at first; sepals 3–4 mm. long; petals 5–9 mm. long.

Very common in thickets and open woodlands on limestone; SL—3000 feet, fl. and fr. all the year. *A 8048! 11236! H 9633! HPS 14729! P 24718! Cuba; Hispaniola.*

2. *B. jamaicensis* Urb. & Niedenzu in Ind. Lect. Lyc. Brunsb., Bunchosia: 10 (1898).

Tree 5–10 m. high with drooping branches; leaves usually rounded or obtuse at apex, rarely shortly acuminate; racemes shorter than leaves; pedicels almost glabrous; sepals about 3 mm. long; petals about 5 mm. long.

Rare and local (Trel., St. Ann), in woodland on limestone; 1500–3000 feet; fl. July, Dec, fr. Feb, Aug. *H 6463! 8897! H & P 13497! P 15740! Endemic.*

4. *HETEROPTERIS* Kunth (1822) nom. cons.

1 Petals purple or pink; petiole with 2 glands at about the middle; leaves membranous, less than 6 cm. long; sepals erect-tipped; samara 2–3 cm. long with oblong-ovate wing

1. *purpurea*
2 Petals yellow or tinged reddish; petiole without glands; leaves leathery, mostly much more than 8 cm. long; sepals revolute-tipped; samara 2.5–4 cm. long;

2 Samara-wing elliptical with a slight proximal constriction and curved parallel striations; panicle pyramidal

2. *laurifolia*
3. *multiflora*

1. *H. purpurea* (L.) Kunth, Nov. Gen. 5: 164 (1822).

Slender climbing shrub to 5 m. or more high; leaves ovate to elliptical, usually rounded at base, acute, obtuse or rounded at apex, glabrous, 1–5 cm. long, 1–3 cm. broad; flowers in terminal and axillary sparingly pubescent corymbs; sepals oblong to oblong-ovate, 2.5–3 mm. long; petals up to 5.5 mm. long.

Very rare and not recently collected. Colombia, Venezuela, Hispaniola to Trinidad.

2. *H. laurifolia* (L.) A. Juss. in Ann. Sci. Nat. sér. 2, Bot. 13: 276 (1840).—*Banisteria laurifolia* L. (1762). Dragon Withe.

Strong-stemmed scrambling or climbing shrub; leaves ovate-lanceolate to elliptical, cuneate to rounded at base, obtuse to acuminate at tip, pubescent when young, glabrescent, 7–18 cm. long, 2–9 cm. broad; panicle reddish-pubescent; petals 5–7 mm. long.

Rather common, at least in eastern parishes, on shrubs and trees in thickets; 10–2000 feet; fl. and fr. most of the year. *A 6150! 11852! H 8519! 11773! P 11878! C. Amer., Greater Antilles.*

3. *H. multiflora* (DC.) Hochr. in Bull. New York Bot. Gard. 6: 277 (1910).—*Byrsonima multiflora* DC. (1824). *H. reticulata* (Poir.) Niedenzu (1903), not Griseb. (1858). *Malpighia reticulata* Poir. (1816).

Climber; leaves oblong-lanceolate to elliptical, obtuse or rounded at base, acute or acuminate at tip, glabrous or with a few scattered hairs beneath, up to 30 (–40) cm. long and 13 (–15) cm. broad; panicle rusty-tomentose; petals unequal, 5–6 mm. long.

Very rare and local (St. Eliz.), on trees by river; about 50 feet; fl. and fr. Sept. *H 9753!* Northern S. Amer., Trinidad.

5. BRACHYPTERYS A. Juss. (1837)

1. *B. ovata* (Cav.) Small in N. Amer. Fl. 25: 138 (1910).

Shrub usually about 1 m. high, erect at first then twining; leaves ovate to lanceolate, rounded at base, acute at tip, glabrescent, fleshy and rather brittle, up to 9 (–11) cm. long and 3.5 (–5) cm. broad, midrib with 2 glands near to base; inflorescence subumbellate, 2–8-flowered; peduncle up to 7 cm. long; pedicels up to 3 cm. long; sepals 3–4 mm. long; petals yellow fading orange, including claw 9–16 mm. long; fruit 1–2-coccous, with dorsal wing triangular, thick with irregular prominent ridges, 3–5 mm. high; cotyledons unequal.

Uncommon (St. Mary, Port., St. Thom.), in coastal swamp and rocky mangrove margins; SL–5 feet; fl. Aug, Nov–Mar, fr. Mar, Aug. *A 11827! Webster & Wilson 5229! Yuncker 18173!* C. and northern S. Amer. from British Honduras to Brazil, Greater Antilles, Guadeloupe, St. Vincent, Trinidad and Tobago, West Africa.

6. STIGMAPHYLLON A. Juss. (1832)

Leaves broadly cuneate to rounded or subcordate at base, acuminate at tip; anterior style longer than the two posterior styles and the accompanying stamens also longer and thicker than posterior; style-tips expanded, foliaceous

1. *puberum*
Leaves cordate, rounded or truncate at base, usually emarginate and apiculate at tip; 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

2. *emarginatum*

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

Climbing shrub; leaves ovate to ovate-elliptical, silky-pubescent abaxially, 7–10 (–16) cm. long, 5–6 (–10) cm. broad; inflorescence of corymbose or subumbellate racemes; peduncles 7–20 cm. long; pedicels up to 8 mm. long; sepals 2.5–3.5 mm. long; petals yellow tinged red, up to about 12 mm. long; samara 2.5–3 cm. long.

Very rare (St. Mary). *McNab!* Costa Rica to Peru, West Indies.

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

Trailing and twining shrub; leaves very variable from linear (mostly in juveniles and on sterile branches) to suborbicular, silky beneath, glabrate, 1–10 (–14) cm. long, 1–6 (–9) cm. broad; sepals 3–4 mm. long; petals yellow, up to about 13 mm. long; samaras up to about 2 cm. long.

Common on shrubs and trees in thickets, especially near the sea; SL–2600 feet; fl. Oct–June, fr. Nov–Apr. *A 5652! H 9232! 10350! P 20597!* Greater Antilles, Virgin Is. and Lesser Antilles south to St. Lucia.

7. TRIOPTERIS L. (1753)

Leaves oblong-ovate or ovate, obtuse or acute at tip; inflorescence corymblike

Leaves broadly ovate, distinctly acuminate; inflorescence pyramidal

1. *paniculata*
2. *brittonii*

1. *T. paniculata* (Mill.) Small in N. Amer. Fl. 25: 124 (1910).

Woody climber or scrambler; leaves rounded to subcordate at base, 3–10 cm. long, 2–4 (–7) cm. broad; sepals, 4 with paired glands, 1 without, 3–3.5 mm. long; petals pink, mauve or light violet, 5–6 mm. long; samara 13–24 mm. broad.

Locally common, especially in secondary growth along the south coast; SL–800 feet; fl. Aug–May, fr. Sept–June. *A 9826! H 7263! P 15344! 23583!* Endemic.

2. *T. brittonii* Small in N. Amer. Fl. 25: 124 (1910).

Climbing shrub; leaves cordate at base, reticulate-veined, 4–10 cm. long, up to about 6 cm. broad; sepals about 2 mm. long; petals purple, 4.5–5 mm. long; fruit not known.

Very rare (Manch.), known only from the type, *Britton 1069!* Endemic.

8. TETRAPTERIS Cav. (1790)

1. *T. citrifolia* (Sw.) Pers., Synops. Pl. 1: 508 (1805).—*Triopteris citrifolia* Sw. (1788).

Climbing shrub; leaves elliptical to oblong-elliptical, cuneate to rounded at base, acute to shortly acuminate at tip, without glands, 5–13 (–17) cm. long, 2.5–8 cm. broad; inflorescence shortly white-hairy; bracts foliaceous; sepals 3–4 mm. long; petals 4–6 mm. long; upper wings of samara 13–16 mm. long, lower wings 9–10 mm. long.

Uncommon (Trel., St. Mary, St. Thom.), in thickets; 400–1250 feet; fl. Sept, fr. Aug. *McNab! Powell 853! P 15604!* Hispaniola.

9. MASCAGNIA Bert. ex Colla (1824)

1. *M. hiraea* (Gaertn.) F. & R., Fl. Jam. 4: 240 (1920).

Robust woody climber to 6 m. high; leaves ovate to ovate-lanceolate, cuneate to rounded at base, acutely acuminate, glossy, 6–15 cm. long, up to 7 cm. broad; inflorescence of paniculate racemes; sepals ovate to roundish, yellowish, inflexed, 3–4 mm. long; petals spreading, one deeply fimbriate, 7–11 mm. long; wings of samara about 2 cm. broad.

Occasional in woodlands on limestone; 25–2250 feet; fl. Apr–Sept, fr. Apr–Nov. *A 6806! 11002! H 9487! P 15678! Robertson UCWI 5743!* Endemic.

Species-limits in the West Indian *Malpighiaceae* are in general very difficult to define. It is noticed in some of the commoner species that there is marked local phenotypic and ontogenetic variability which could suggest that some differences are more apparent than real in other species. For example if *Triopteris ovata* Cav. were not different from *T. paniculata*, the range of the latter would be extended to include Hispaniola and Mexico; if *Tetrapteris citrifolia* were deemed to be not different from *T. inaequalis* Cav., the range would be extended to Tobago. Parallel situations exist in *Malpighia*, *Byrsonima*, *Bunchosia* and *Stigmaphyllon* and taxonomic interpretations will continue to differ widely until the causes of variation are understood.