

MELIACEAE

by

A. L. STOFFERS

(Instituut voor Systematische Plantkunde, Utrecht)

Trees or shrubs. Leaves alternate, pinnately compound with or without a terminal leaflet. Stipules wanting. Indument usually simple, rarely of stellate or dibrachiate hairs. Inflorescence axillary or terminal, usually thyrsoid or rarely racemose. Flowers actinomorphic, hermaphrodite or unisexual and then the rudiments of the opposite sex well differentiated in the unisexual flowers. Calyx of 4—5 sepals, usually lobed or less frequently truncate or with the sepals free. Petals (3—) 4—5 (—7), imbricate or valvate, free or partly united. Stamens 5—10; filaments partly or completely united into a staminal tube or rarely free; with or without appendages; anthers 2-celled, inserted on the top of the filament or on the margin of the staminal tube, with longitudinal dehiscence. Disk intrastaminal, annular or columnar. Ovary superior, free or adnate to the disk, 2—10-locular; style 1 or wanting; stigma capitate or discoid, often lobed. Ovules 1 to many in each locule, anatropous, pendulous, biseriolate or superposed on an axile placenta. Fruit a berry, capsule or drupe. Seeds solitary or numerous, sometimes winged or with or without an aril or sarcotesta. Embryo plano-convex or flat; endosperm present or wanting.

Species about 550 in 50 genera, in tropical and subtropical regions.

Key to the genera:

1. Leaves 3-foliolate; the terminal leaflet about twice as long as the lateral leaflets *Trichilia*
Leaves pinnate or 2—3-pinnate 2
2. Leaves 2—3-pinnate *Melia*
Leaves pinnate 3
3. Leaflets in 2—6 pairs, 3—8 cm long and 1.5—3.5 cm wide, acute or cuspidate at the apex; anthers 10, inserted within the staminal throat *Swietenia*
Leaflets in 5—10 pairs, 7—16 cm long and 2.5—6 cm wide, long-acuminate at the apex; stamens 5, the filaments partially connate into a tube *Cedrela*

Trichilia P. Browne, Hist. Jamaica 278. 1756 nom. cons. 4195

Trees or shrubs, glabrous or pubescent. Leaves alternate, (impari)pinnate, 3-foliolate or unifoliolate; leaflets alternate or opposite, sometimes glandular-dotted and -striate. Inflorescence consisting of axillary or terminal, many-flowered panicles or rarely inflorescence corymbose or fasciculate. Flowers usually unisexual, small, fragrant; if unisexual then the plant dioecious. Sepals 4—5, free or united. Petals 4—5, free or partly united, erect or spreading, imbricate or valvate. Stamens 5—10; hairy or glabrous, filaments partly or completely connate or rarely free; anthers inserted on the rim of the staminal-tube or at the top of the filaments, the sterile anthers narrower, without pollen and not dehiscing. Disk annular or wanting. Ovary 2—3-locular, more or less immersed in the disk; style short or elongate; stigma capitate, 2—3-lobed. Ovules 2 in each locule; collateral or superposed, sometimes solitary; pistillode smaller but often with abortive ovule. Fruit a capsule, 2—3-valved, dehiscing loculicidally. Seeds 1 or 2 in each locule, partly or completely enclosed in a thin or fleshy, often brightly coloured arillode. Endosperm usually wanting.

About 90 species in the tropics, mainly in America.

Trichilia trifolia L.

LINNAEUS, Syst. Nat. ed. 10. 1020. 1759; BOLDINGH, Fl. Ned. W. Ind. Eil. 236. 1913; Fl. D.W. Ind. Isl. 2: 49. 1914; WILLIAMS, Fl. Trinidad & Tobago 1: 160. 1929; LEON & ALAIN, Fl. Cuba 2: 419. 1951; ARNOLDO, Zakflora 23, 58. 1954; Zakflora 160. 1964; Gekw. en nutt. pl. Ned. Ant. 190. 1971.

Shrub or small, gnarled tree; branchlets brownish, lenticellate, puberulent when young. Leaves 3-foliolate or rarely uni-foliolate; leaflets broadly obovate, especially the terminal one, elliptic or oval, rounded or obtuse and often emarginate at the apex, cuneate, attenuate or obtuse at the base, 2—7 × 1—4 cm, the terminal leaflet nearly twice as long as the lateral ones, membranaceous, glabrous; petiole 2—5 cm long. Inflorescence consisting of small panicles or clusters. Flowers subsessile. Calyx cup-shaped, 5(—4)-dentate, 1.5—2 mm long, its teeth broadly triangular, c. 1.5 mm long. Petals 5(—4), elliptic-oblong to oblong-obovate, 4—5 × 1—2 mm, erect, white. Stamens 10(—8); filaments united to about the middle, 3—4 mm long, woolly inside, puberulous outside, 2-dentate at the apex; anthers 1 mm long. Ovary subglobose, woolly, immersed in the disk; style rather stout, 2 mm long; stigma capitate, slightly 3-lobed. Capsule subglobose to ovoid, 5—10 mm in diam., glabrous or hirtellous. Seeds white to yellowish-brown, 3.5—5 mm long; arillode orange to red.

Mexico, Salvador, Nicaragua, Venezuela, Cuba, Tobago, and Curaçao.

In woodlands and thickets.

Vernacular names: cerashi machu, shimarucu machu (Leeward Group).

CURAÇAO: Santa Cruz (Stoffers 1172, fl. Dec.); Ronde Klip (Stoffers 1270, fl. Dec.); Choloma (Stoffers 1, fl. Sept.); Noordkant Plantation (Stoffers 170, fl. Oct.); Scherpenheuvel (Arnoldo 1197, fl. Nov.); hills near Blein (Boldingh 4759c, st. Oct.); calcareous hills near St. Patrick (Boldingh 5479, fl. Nov.); roadside near Willemstad (Britton & Shafer 2911, fl. March); hills to the east of Westpunt (Boldingh 4940, fl. Nov.); road from Casa Chiquito to Veeris Berg (Boldingh 4699, st. Oct.).

Cedrela Linnaeus, Syst. Nat. ed. 10. 940. 1759

Deciduous, monoecious trees with soft, coloured wood. Leaves alternate, paripinnate; leaflets many, opposite, entire. Indument of single hairs. Inflorescence of terminal or subterminal, many-flowered panicles. Flowers unisexual by abortion of the opposite sex, small. Sepals 5, usually connate and then the calyx 5-toothed or -lobed and split-down on one side. Petals 5, erect, imbricate, keeled on the inside and coherent by this keel with the androgynophore (elongated columnar disk). Androgynophore thick and elevated or columnar, 5-lobed. Stamens 5; filaments inserted at the edge of the androgynophore, subulate with or without appendages; anthers versatile, yellow, large; sterile anthers brownish, shrivelled, and without pollen. Ovary 5-locular, on the top of the androgynophore; style filiform; stigma discoid with glandular papillae. Ovules 8—14 in each locule, biseriata, pendulous. Pistillode slender, with well-developed locules and a long style but the ovules degenerated. Capsule woody, coriaceous or thin, septicidally opening by 5 valves; axis 5-winged. Seeds winged, in 2 rows in each locule. Endosperm scanty. Embryo straight.

Seven species in tropical America.

Cedrela odorata L.

LINNAEUS, Syst. Nat. ed. 10. 940. 1759; GRISEBACH, Fl. Br. W. Ind. Isl. 131. 1859 [1864]; DUSS, Fl. phan. Ant. franç. 129. 1897; URBAN, Symb. Ant. 4: 324. 1910; FAWCETT & RENDLE, Fl. Jamaica 4(2): 218, fig. 73. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 467. 1924; ADAMS, Flowering plants of Jamaica 394. 1972; — *Cedrela mexicana* M. J. ROEMER, Syn. Monogr. 1: 137. 1846; WILLIAMS, Fl. Trinidad & Tobago 1: 159. 1929; LEON & ALAIN, Fl. Cuba 2: 413, fig. 166. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 40. 1954; GOODING *et al.*, Fl. Barbados 234. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 189. 1971; FOURNET, Fl. Guadeloupe & Martinique 1082, fig. 526. 1978.

Tree, up to 35 m high; trunk up to 2 m in diam., often buttressed; bark greyish-brown to greyish-black, longitudinally fissured. Leaves paripinnate, up to 50 cm long; leaflets in 5—12 pairs, opposite or somewhat subopposite, inequilateral and often falcate, oblong-lanceolate, ovate-lanceolate or ovate, long-acuminate at the apex, truncate, rounded or acute at the base, 7—16 × 2.5—6 cm, membranaceous, glabrous and glossy-green above; petiolules 0.5 (—1) cm long. Inflorescence consisting of loosely branched, open, lax panicles, up to 35 cm long; branches glabrous to puberulous. Flowers sessile to short-pedicellate, greenish-white. Calyx 2 mm long; puberulous, dentate with a single lateral split on one side. Petals 5, white, thin, oblong, acute or obtuse at the apex, 5—9 × 1.5—2 mm, pubescent outside, puberulous inside. Stamens 5; filaments glabrous, 2—2.5 mm long, slender; anthers oblong, somewhat apiculate, 1 mm long. Ovary globose, glabrous; style 2 mm long; stigma discoid, 5-lobed. Pistillode clubshaped, slender, angular; style slender; stigma not lobed. Capsule oblong to ellipsoid or obovoid, up to c. 4 cm long and 2 cm in diam.; columella broadly 5-winged. Seeds 15—30 mm long, wings included.

Tropical continental America from Mexico to Guianas, and on some of the West Indian islands. Cultivated and subspontaneous on Curaçao, St. Eustatius, and St. Martin.

Vernacular names: red cedar, spanish cedar (Windward Group).

CURAÇAO: Cas Cora (Arnoldo 1750, fr. Dec.).

ST. EUSTATIUS: northern slope of The Quill (Stoffers 3972, st. June).

Swietenia Jacquin, Enum. Syst. Plant. Carib. 4. 1760

Deciduous, monoecious trees; bark thick. Leaves paripinnate or rarely imparipinnate, glabrous; leaflets opposite or nearly so, entire. Inflorescence consisting of short, little branched, axillary (or terminal) panicles or thyrses. Flowers unisexual. Calyx 5-lobed; lobes imbricate. Petals 5, spreading or strongly reflexed when flowering, convolute in bud. Stamens connate in a cylindrical to urn-shaped staminal tube, (8—) 10-dentate; anthers 8—10, attached in the throat of the staminal tube between the teeth. Disk saucer-shaped or shallowly cup-shaped with crenate margin, fused to the base of the staminal tube, reduced to an annular ring at the base of the ovary in the female flowers. Ovary free, 5-locular; style rather stout; stigma discoid, 5-lobed. Ovules about 12 in each locule, pendulous. Pistillode like the pistil but more slender, with longer style and smaller stigma; the ovules rudimentary. Capsule woody, septically 5-valved from the base; axis 5-angled. Seeds about 12 in each locule attached to the apex of the columella by the terminal, oblong wing. Endosperm scanty. Embryo with thin cotyledons.

Perhaps only 3 species, natives of continental tropical America from southern Florida southward, and the West Indies.

Swietenia mahagoni (L.) Jacq.

JACQUIN, Enum. Syst. Plant. Carib. 20. 1760; GRISEBACH, Fl. Br. W. Ind. Isl. 131. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 130. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 104. 1909; Fl. Ned. W. Ind. Eil. 236. 1913; Fl. D.W. Ind. Isl. 2: 49. 1914; URBAN, Symb. Ant. 8: 329. 1920; BRITTON & MILLSAUGH, Bahama Fl. 213. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 216, fig. 72. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 467. 1924; QUESTEL, Fl. Isl. St. Bartholomew 132. 1941; LEON & ALAIN, Fl. Cuba 2: 413, fig. 167. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 128. 1954; GOODING *et al.*, Fl. Barbados 235. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 190. 1971; ADAMS, Flowering plants of Jamaica 394. 1972; FOURNET, Fl. Guadeloupe & Martinique 1083, fig. 527. 1978; — *Cedrela mahag(oni)* LINNAEUS, Syst. Nat. ed. 10: 940. 1759.

Large or medium-sized tree, buttressed at the base; bark reddish, scaly; twigs angular, smooth. Leaves paripinnate; leaflets in 2—6 pairs, ovate or ovate-lanceolate, 3—8 × 1.5—3.5 cm, coriaceous, strongly inequilateral, acute or cuspidate at the apex, rounded to cuneate at the base, glabrous and shining above, paler and glabrous or sparingly pubescent beneath; petiolules 1—5 mm long; petiole slender, up to 7 cm long. Inflorescence consisting of axillary thyrses. Calyx about 1 mm long, its lobes roundish. Petals elliptic, 3.5 — 4 × 2 mm, white. Staminal tube 2 mm long, its teeth nearly 1 mm long; anthers 0.5 mm long. Ovary ovoid; style 1.5 mm long; stigma discoid, 1 mm in diam., 5-lobed. Pistillode slender. Capsule ovoid, 6—10 cm long, splitting from the base into 5 thick valves; axis 5-winged, persistent. Seeds about 6 cm long, with conspicuous scar, the reddish-brown wing about twice as long as the body.

Southern Florida, Bahamas and Greater Antilles; introduced elsewhere. Planted in the island of the Netherlands Antilles and now subsontaneous on Saba and St. Eustatius.

Vernacular names: mahok, mahonie (Leeward Group)
mahogany (Windward Group).

SABA: Bottom Hill (Arnoldo 632, st. Aug.); Ladder Gut, 0—200 m (Boldingh 1978, fl. July; Stoffers s.n., st. Aug.).

Melia Linnaeus, Spec. Plant. 384. 1753

Andromonoecious trees, treelets or shrubs. Leaves 2—3-pinnate; leaflets serrate. Indument mostly a mixture of simple and tufted stellate hairs. Inflorescence consisting of many-flowered, axillary panicles. Calyx 5—6-partite, the lobes imbricate. Petals 5—6, free, imbricate. Staminal-tube cylindric, ribbed, somewhat expanded in the upper part, truncate or with lobed appendages at the top; anthers 10—12, hairy or glabrous. Disk annular or saucer-shaped, free. Ovary 3—6 (—8)-locular; style slender; stigma capitate or with 3—6 (—8) lobes. Ovules 2 in each locule, superposed. Fruit a 3—6 (—8)-locular drupe with thick, bony endocarp. Seeds 1—2 in each locule, oblong and laterally compressed, pendulous; testa sometimes somewhat swollen or fleshy around the scar. Endosperm scanty. Cotyledons flat.

Species perhaps 10, natives of tropical Asia; one species cultivated and subsontaneous throughout the tropics.

Melia azedarach L.

LINNAEUS, Spec. Plant. 384. 1753; URBAN, Symb. Ant. 4: 325. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 104. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 226. 1909; Fl. Ned. W. Ind. Eil. 236. 1913; Fl. D.W. Ind. Isl. 2: 49. 1914; URBAN, Symb. Ant. 8: 330. 1920; BRITTON & MILLSAUGH, Bahama Fl. 213. 1920; FAWCETT & RENDLE, Fl. Jamaica 4(2): 215. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 463. 1924; QUESTEL, Fl. Isl. St. Bartholomew 132. 1941; LEON & ALAIN, Fl. Cuba 2: 415, fig. 169. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 90, fig. 138. 1954; GOODING *et al.*, Fl. Barbados 235. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 190, fig. 138. 1971; ADAMS, Flowering plants of Jamaica 393. 1972; FOURNET, Fl. Guadeloupe & Martinique 1080, fig. 524. 1978; — *Melia sempervirens* SWARTZ, Prod. Veg. Ind. Occ. 67. 1788; GRISEBACH, Fl. Br. W. Ind. Isl. 128. 1859 ['1864']; DUSS, Fl. phan. Ant. franç. 126. 1897.

Deciduous shrub or small tree, up to c. 10 m high; branches slender, straggling; young shoots, inflorescence and calyx with rusty tufted stellate hairs. Leaves alternate, 20—50 cm long, bipinnate or rarely tripinnate, glabrous; pinnae opposite in 2—5 pairs with an odd pinna; leaflets opposite or nearly so, ovate to lanceolate, acuminate at the apex, rounded or cuneate and inequilateral at the base, 3—7 cm long, glabrous, margin serrate. Flowers hermaphrodite and male on the same tree (andromonoecious), purplish and white or lilac, 1 cm long, fragrant. Calyx about 2 mm long, minutely pubescent. Petals spatulate, oblanceolate or oblong, 8—10 mm long, with dark stalked glands outside. Staminal tube 7—8 mm long, narrow, violet-blackish; anthers inserted on the margin of the staminal tube or just inside, alternating with or opposite the appendages. Ovary (3—) 5 (—8)-locular, the locules mostly 2-ovulate. Drupe yellow, ellipsoid, c. 1.5 cm long.

Native of tropical Asia, now widespread in the tropics, subtropics and southern Europe.

Cultivated on the islands of the Netherlands Antilles; naturalized in the islands of the Windward Group.

Vernacular names: aleli, anesite (Leeward Group)
lilac (Windward Group).

CURAÇAO: Willemstad (Arnoldo 1108, fl. & fr. Aug.).

SABA: Hellgate (Stoffers 3384, fl. May); Mountain near Windwardside, 600 m (Boldingh 2163, fl. July); Crispine (Boldingh 1722, fl. July); The Bottom (Arnoldo 915, fl. Aug.).

ST. EUSTATIUS: without loc. (Boldingh s.n., st.; van Groll-Meyer 139, fl.).

ST. MARTIN: hills along western side of Cul de Sac, north of Sentry Hill, 100 m (Stoffers 2600, fl. & fr. March); near Bethlehem (Boldingh 2661, fr. Aug.); Philipsburg (Stoffers 2481, fl. March).