

# LAURACEAE

by

**A. L. STOFFERS**

(Botanisch Laboratorium, Nijmegen)

Mostly evergreen trees or shrubs, usually aromatic, or sometimes parasitic, twining herbs. Leaves alternate, simple, pinnately veined or subtriplinerved. Stipules wanting. Inflorescence usually consisting of axillary or subterminal panicles, spikes, racemes or umbels. Flowers hermaphrodite or unisexual, actinomorphic, usually 3-merous. Perianth biseriata, sepaloid, the outer segments often smaller than the alternate inner ones, deciduous or persistent; tube usually persisting as a cupule at the base of the fruit. Stamens typically in 4 series of three stamens each, the inner series usually staminodial; filaments usually free, those of the third series with 2 glands at the base; anthers basifixed, 2- or 4-celled, cells in 2 vertical rows or in one arcuate row, opening by valves, those of the outer two series introrse, those of the third series extrorse. Ovary superior, 1-celled; style 1; stigma 1, sometimes 2- or 3-lobed. Ovule solitary, anatropous, pendulous from a parietal placenta. Fruit a drupe or berry, with an enlarged and persistent perianth-tube surrounding the base of the fruit. Seed one. Embryo straight. Endosperm wanting.

About 1100 species in 45 genera, widely distributed in tropical regions and a few species in the temperate regions.

## Key to the genera:

1. Parasitic, twining, leafless herb with filiform stems . . . . *Cassytha*  
Trees or shrubs with green leaves . . . . . 2
2. Staminodes conspicuous, sagittate . . . . . 3  
Staminodes small or wanting . . . . . 4
3. Filaments 1 mm long; anthers broad, 1 mm long . . . . *Phoebe*  
Filaments 2—3.5 mm long; anthers oblong, 1.5 mm long . . . . *Persea*
4. Anthers 4-celled in an arcuate row; anthers roundish, 0.5 mm long  
*Nectandra*  
Anthers 4-celled in two rows; anthers  $\pm$  rectangular . . . . *Ocotea*

Key to the genera based on vegetative characters:

1. Parasitic, twining, leafless herb, with filiform stems . . . . *Cassytha*  
Trees or shrubs with green leaves . . . . . 2
2. Lateral veins strongly prominent beneath, tertiary veins  $\pm$  parallel; twigs stout at apex . . . . . 3  
Lateral veins not strongly prominent beneath, smaller veins reticulate; twigs slender at apex . . . . . 4
3. Leaves 1.5—2-times as long as wide, obtuse . . . . . *Persea*  
Leaves 3—4-times as long as wide, long-acuminate; young twigs and petioles rusty-tomentose . . . . . *Nectandra krugii*
4. Leaves shining above; lateral veins in 7—9 pairs . . . . . 5  
Leaves dull above, glaucous beneath; lateral veins in 5—6 pair . . *Phoebe*
5. Leaves twice as long as wide, rather abruptly acuminate; twigs very dark  
*Ocotea* sp.  
Leaves 2—3 times as long as wide, acute to slightly acuminate; twigs grey  
*Nectandra coriacea*

**Cassytha** Linnaeus, Spec. Plant. 35. 1753

Parasitic vines; stems slender, twining, adhering by means of haustoria. Leaves wanting or reduced to minute scales. Inflorescence consisting of racemes or spikes. Flowers small, hermaphrodite, sessile or pedicellate. Bracts and bracteoles scale-like. Tepals 6, the 3 outer ones much smaller than the inner ones. Perfect stamens 9, in three rows; anthers of the two outer rows 2-celled, introrse, with glandless filaments, those of the inner row 1-celled, extrorse, with biglandular filaments. Staminodes large. Ovary becoming enclosed by the enlarging perianth-tube. Fruit globose, drupaceous, enclosed by the succulent perianth-tube and crowned by the persistent segments. Seeds with thin testa; pericarp of 2 layers, the outer thin, the inner layer thick and hard.

About 20 species; one pantropic, two in tropical Africa, one in Ceylon and the others in Australia.

**Cassytha filiformis** L.

LINNAEUS, Spec. Plant. 35. 1753; FAWCETT & RENDLE, Fl. Jamaica 3(1): 218, fig. 89. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 324. 1924; QUESTEL, Fl. Isl. St. Bartholomeus 108. 1941; LEON & ALAIN, Fl. Cuba 2: 191. 1951; ARNOLDO, Zakflora 84. 1954; Zakflora 150. 1964; — *Cassytha americana* NEES, Syst. Laur. 644. 1836; GRISEBACH, Fl. Br. W. Ind. Isl. 285. 1860; DUSS, Fl. phan. Ant. franç. 305. 1897; URBAN, Symb. Ant. 4: 249. 1905; Symb. Ant. 8: 235. 1920; BRITTON & MILLSAUGH, Bahama Fl. 144. 1920.

Slender, branched, white vine; stems 0.5—2 mm in diam., striate, glabrous or slightly or distinctly tomentellous; haustoria distinct. Leaves minute, scale-like,

ovate or lanceolate, acute at the apex, 1—2 mm long. Spikes lax, pedunculate, usually solitary in the axils of the leaves, slightly or densely tomentellous, 1—2 cm long; peduncle 1—3 cm long. Bracts membranaceous, glabrous, ovate-lanceolate, 0.5—2 mm long. Flowers white, sessile in the axil of the bract and 2 bracteoles; bracts ovate, 1 mm long, membranaceous, ciliate at the margin; bracteoles smaller, ovate-orbicular. Perianth-tube nearly wanting; segments unequal; the outer ones ovate-orbicular, concave, membranaceous, margin ciliate, 0.75 mm wide; the inner ones ovate, obtuse, thicker, 2.5 mm long or more, not ciliate. Stamens included; filaments glabrous, 0.5—2 mm long, dilated and with appendages near the anthers, especially those of the outer stamens, those of the third row with two large, globose, sessile glands; anthers large, ovate-triangular, 0.75 mm long, connectives distinctly protruding. Staminodes large, glabrous, short-stipitate, about 0.5 mm long. Ovary globose, glabrous; style cylindrical-obconical, equalling the ovary in length; stigma small, capitate. Fruit globose, 6 mm in diam.

Pantropic.

CURAÇAO: Piscadera Baai (Arnoldo 39, fl. May).

**Phoebe Nees**, Syst. Laur. 98. 1836

Trees or shrubs. Leaves alternate, chartaceous or coriaceous, pinnately-veined or triplinerved. Inflorescence consisting of few-flowered, small or large and lax cymes, arranged into axillary panicles. Flowers hermaphrodite. Tepals 6, equal, persistent. Fertile stamens 9; filaments free, glabrous or pilose, those of the two outer series eglandular, those of the third series with two sessile, basal glands; anthers of the outer series 4-celled and introrse, those of the inner series usually 4-celled and extrorse. Staminodes conspicuous, cordate-sagittate. Ovary ellipsoid or globose, glabrous; style shorter than or equaling the ovary in length; stigma obtuse or discoid. Fruit a berry, ellipsoid or globose; pedicels usually thickened in fruit.

About 80 species, mostly natives of tropical America; a few species in the East Indies and Malay Archipelago.

**Phoebe elongata** (Vahl) Nees

NEES, Syst. Laur. 116. 1836; Duss, Fl. phan. Ant. franç. 298. 1897; URBAN, Symb. Ant. 4: 245. 1905; Symb. Ant. 8: 232. 1920; BOLDINGH, Fl. D. W. Ind. Isl. 1: 70. 1909; Fl. Ned. W. Ind. Eil. 193. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 319. 1924; LEON & ALAIN, Fl. Cuba 2: 186. 1951; — *Laurus elongata* VAHL ex NEES, Syst. Laur. 116. 1836.

Tree, up to 10 m high; bark gray and smooth; young twigs glabrous or tomentulose. Leaves petiolate; blades elliptic-lanceolate to ovate-lanceolate, acuminate at the apex, acute or rounded and sometimes slightly inequilateral at the base, 6—16 × 2—6 cm, coriaceous, glabrescent above, sparingly short-pilose on the veins beneath, pinnately-veined and often more or less triplinerved from near the base; petioles 0.5—2 cm long. Inflorescence consisting of few-

flowered panicles, usually in the axils of the terminal leaves; branches glabrous or sparsely pilose; peduncle short or elongate; pedicels 0.5 cm long, enlarging in fruit. Flowers fragrant. Perianth white or greenish-white; tube short; segments ovate to elliptic-ovate or broadly ovate,  $2 \times 1.5$  mm, puberulous on both sides. Stamens with broad and hairy filaments, nearly 1 mm long; anthers broad, 1 mm long. Staminodes triangular, acute at the apex, deeply cordate at the base. Ovary ellipsoid, glabrous; style as long as the ovary; stigma obtuse. Berry ellipsoidal, 1—1.5 cm long and 5—7 mm wide; pedicels thickened and passing into the cupule.

Puerto Rico, Cuba, Hispaniola, St. Croix, St. Eustatius, and Montserrat to Trinidad.

ST. EUSTATIUS: Bottom of The Quill (Boldingh 898, fr. June); without loc. (Boldingh 356A, st.).

**Nectandra** Roland in Rottboell, Act. Lit. Univ. Hafn. 1: 279. 1778

Trees or shrubs. Leaves alternate, chartaceous or coriaceous, glabrous or sparingly pubescent. Inflorescence consisting of axillary or terminal panicles. Flowers without involucre, hermaphrodite or dioecious. Perianth 6-partite; tube conspicuous or nearly wanting; lobes subequal, deciduous. Fertile stamens 9; fourth row of stamens staminodial, small or wanting; filaments short or wanting in the two outer rows, those of the third row with two sessile glands; anthers 4-celled. Ovary globose or ellipsoidal, glabrous; style usually short. Berry globose or ellipsoidal; cupule with simple, entire margin, cup- or saucer-shaped, usually red; pedicel slightly thickened or expanded above to the diameter of the cupule.

About 90 species in tropical America.

Key to the species:

- Anthers sessile or filaments very short and glabrous; style less than 0.5 mm long . . . . . *N. coriacea*
- Filaments pilose; style 1.5 mm long . . . . . *N. krugii*

**Nectandra coriacea** (Sw.) Gris.

GRISEBACH, Fl. Br. W. Ind. Isl. 281. 1860; Duss, Fl. phan. Ant. franç. 301. 1897; URBAN, Symb. Ant. 4: 249. 1905; Symb. Ant. 8: 234. 1920; BOLDINGH, Fl. D. W. Ind. Isl. 1: 70. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 211. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 193. 1913; FAWCETT & RENDLE, Fl. Jamaica 3(1): 217. 1914; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 323. 1924; LEON & ALAIN, Fl. Cuba 2: 190, fig. 80. 1951; — *Laurus coriacea* SWARTZ, Prodr. 65. 1788; Fl. Ind. Occ. 2: 710. 1800; — *Ocotea coriacea* (Sw.) BRITTON in BRITTON & MILLSAUGH, Bahama Fl. 143. 1920.

Small tree, up to about 10 m high; bark light gray, smooth; twigs slender, glabrous, more or less striate. Leaves petiolate; blades oblong, oblong-ovate to

oblong-lanceolate, acute or acuminate at the apex, cuneate at the base, 6—17 × 2—6 cm, coriaceous, glabrous or nearly so, shining above, dull beneath, veins prominent on both sides; petiole 0.5—1.5 cm long. Inflorescence consisting of many-flowered, axillary panicles; peduncle 2—4 cm long, puberulent; pedicels 4—6 mm long, puberulent. Flowers hermaphrodite. Perianth white; tube 1 mm long; lobes oblong to ovate-oblong, obtuse at the apex, 3—4 × 1 mm, tomentellous on both sides. Stamens small; filaments 0.5 mm long, pilose; anthers more or less roundish, 0.5 mm in diam., yellow. Ovary subglobose to ellipsoidal; style short, less than 0.5 mm long. Berry black, ellipsoidal or subglobose, 1—1.8 × 1 cm, dark-blue to nearly black; cupule red or yellow, saucer-shaped, about 0.5 mm in diam., pedicel thickened at the top and passing into the cupule.

Florida, West Indies and Yucatan.

Vernacular name: sweet wood (Windward Group).

SABA: Windwardside (Boldingh 1947, st.); Booby Hill, 400 m (Stoffers 4311, fl. Aug.).

Sr. EUSTATIUS: Slope of The Quill near Glass Bottle, 150 m (Boldingh 1114, fl. June); id., between Glass Bottle and White Wall, 150-200 m (Stoffers 4113, st. Aug.; 4109, st. Aug.); id., near White Wall, 200 m (Stoffers 4743, st. Aug.; 4777, fibuds Aug.); id., near Bengalen (Stoffers 3756, fl. & fr. July; 3757, st. July; 3777, fr. July; 3775, st. July; 3768, fl. July); id. 50-200 m (Boldingh 648, fl. June; 680, st. June; 751, fl. July; Stoffers 3783, st. July); id. 250 m (Boldingh 696, fl. June); north-western slope of The Quill, 350 m (Boldingh 410, st. June); western slope of The Quill, 350 m (Stoffers 4731, st. Aug.; 4712, fibuds Aug.); northern slope of The Quill, 240 m (Stoffers 3982, st. July; 3993, fl. & fr. July); top of The Quill, 380 m (Boldingh 256, fl. June; 289, st. June; 288, fl. June; 272, fl. June); id. 400 m (Boldingh 221, st. June; Stoffers 3923, fr. July); id. 400-480 m (Stoffers 3950, st. July); inner slope of The Quill, 350 m (Boldingh 1230, fl. June); Bottom of The Quill, 300 m (Boldingh 893, fl. June; 902, st. June); lower part of the hills near Concordia (Boldingh 891, st. June); without loc. (v. Groll-Meyer 168, fl.).

ST. MARTIN: mountain between Mont des Accords and Sentry Hill, 200-300 m (Boldingh 2898A, fr. Aug.; 2855, fr. Aug.); Milldrum Hill, 300-400 m (Boldingh 3125, fr. Sept.); Mount Paradise, 300-400 m (Boldingh 3320, st. Sept.); id., 200-300 m (Boldingh 3306, fr. Sept.); hills along the northern side of Cul de Sac, 75-100 m (Stoffers 2612, st. March).

### **Nectandra krugii Mez**

MEZ, Jahrb. Bot. Gart. Berlin 5: 422. 1889; URBAN, Symb. Ant. 4: 248. 1905; BOLDINGH, Fl. D. W. Ind. Isl. 1: 71. 1909; Fl. Ned. W. Ind. Eil. 194. 1913; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 322. 1924; — *Nectandra discolor* Auct. non Nees, GRISEBACH, Fl. Br. W. Ind. Isl. 282. 1860.

Tree, up to 20 m high; bark dark brown, smooth; twigs rather stout, rusty-tomentose, more or less striate. Leaves petiolate; blades oblong-lanceolate to ovate-lanceolate, 10—25 × 4—8 cm, acuminate at the apex, acute or obtuse at the base, subcoriaceous, when young rusty-tomentulose, primary veins impressed above, prominent beneath; petiole 1—2.5 cm long, rusty-tomentose.

Inflorescence consisting of few- to many-flowered, axillary panicles; peduncle up to 10 cm long, rusty-tomentose; pedicels 3—5 mm long, rusty-tomentose. Flowers hermaphrodite. Perianth white; tube 0.5—1 mm long; lobes oval to suborbicular, 4—4.5 mm long, tomentulose on both sides. Stamens small; filaments wanting or very short and then glabrous; anthers roundish, 0.5 mm long. Ovary globose to ellipsoidal; style 1.5 mm long. Berry narrowly elliptic, 1.5—2 cm long, 8—10 mm wide, dark purple. Cupule hemispheric, tomentulose, 7—10 mm in diam.; pedicel not gradually passing into the cupule.

Puerto Rico, St. Eustatius, Guadeloupe and Dominica.

Vernacular name: black sweet wood (Windward Group).

ST. EUSTATIUS: Bottom of The Quill, 300 m (Boldingh 430, fr. June); inner slope of The Quill, 350 m (Boldingh 466, fl. & fr. June).

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

Trees or shrubs. Leaves alternate, usually pilose. Inflorescence consisting of cymes or pseudo-umbels arranged into axillary or subterminal panicles. Flowers hermaphrodite. Perianth tube very small or wanting; segments 6, unequal or subequal, usually persistent. Stamens 9; fourth series staminodial; filaments filiform, glabrous or hirsute, those of the third series with stipitate glands; anthers 4-celled. Staminodes distinctly stipitate, cordate or sagittate. Ovary subglobose, glabrous or pilose; style usually longer than the ovary, glabrous or pilose; stigma dilated. Berry ellipsoidal, globose or pear-shaped.

About 60 species, chiefly in South America.

**Persea americana** Mill.

MILLER, Gard. Dict. ed. 8. 1768; URBAN, Symb. Ant. 4: 244. 1905; Symb. Ant. 8: 231. 1920; BOLDINGH, Fl. D. W. Ind. Isl. 1: 70. 1909; Fl. D. W. Ind. Isl. 2: 31. 1914; Fl. Ned. W. Ind. Eil. 193. 1913; FAWCETT & RENDLE, Fl. Jamaica 3(1): 207, fig. 85. 1914; LEON & ALAIN, Fl. Cuba 2: 184, fig. 78. 1951; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 105. 1954; — *Laurus persea* LINNAEUS, Spec. Plant. 370. 1753; — *Persea gratissima* GAERTNER, Fruct. 3: 222, t. 221. 1807; GRISEBACH, Fl. Br. W. Ind. Isl. 280. 1860; DUSS, Fl. phan. Ant. franç. 298. 1897; QUESTEL, Fl. Isl. St. Bartholomew 108. 1941; — *Persea persea* COCKER., Bull. Torr. Bot. Cl. 19: 95. 1892; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 318. 1924.

An evergreen, up to 25 m tall tree with greyish bark and soft, reddish-brown wood. Leaves alternate and sub-opposite; blades chartaceous-coriaceous, oblong to elliptic or oval or slightly broadest above or below the middle, 7—25 × 5—15 cm, acuminate or acute or rounded at the apex, acute or more or less rounded and often unequal at the base, glabrous above, usually somewhat glaucous and often sparingly puberulent on the veins beneath, the midrib and primary veins impressed above and prominent beneath, the veins prominulous, densely reticulate; petioles glabrescent, 1.5—6 cm long, canaliculate above. Panicles 7—10 cm long, clustered in the axils of the upper leaves, pyramidal; peduncle small. Flowers greenish with yellow centre, 7.5—10 mm long; pedicels

2—10 mm long, velutinous. Perianth greenish, campanulate-rotate, velutinous or tomentellous, segments oblong or oblong-lanceolate, obtuse or acutish, 5—7 mm long, the outer ones slightly shorter than the inner ones. Fertile stamens 9; filaments slender, densely pilose, 2—3.5 mm long; anthers oblong, 1.5 mm long, top obtuse or slightly emarginate, base truncate, the upper cells smaller than the lower ones. Staminodes of the fourth row large, glanduliform, stipitate, sagittate, pilose, 2 mm long with apiculate top. Ovary globose, ovoid, densely pilose, tapering into the slender, nearly conical, 3 mm long style; stigma slightly dilated. Drupe pyriform, up to 20 cm long and 10—15 cm in diam., greenish to purplish; mesocarp thick and edible.

Native of Mexico; cultivated throughout the tropics.

Cultivated in the island of the Leeward and Windward Group.

Vernacular names: Awacati (Leeward Group).

Avocado, pear tree (Windward Group).

#### **Ocotea sp. ?**

Tree or shrub of variable height; branchlets dark to blackish. Leaves petiolate; blades ovate, elliptic, broadly elliptic, or broadly ovate, acuminate at the apex, obtuse to cuneate at the base, 6—20 × 4—10 cm, subcoriaceous, glabrous and shining above, minutely pubescent on the veins beneath, pinnately veined, veins prominent beneath; petiole stout, 1—2.5 cm long, canaliculate above, dark to blackish.

ST. EUSTATIUS: Bottom of The Quill (Stoffers 3628, st. July; 3660, st. July).