

GUIDE TO THE GENERA OF LIANAS AND CLIMBING PLANTS IN THE NEOTROPICS

LAMIACEAE

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Aegiphila vitelliniflora, photo by P. Acevedo

A cosmopolitan family, mostly of aromatic herbs or shrubs, less often trees or lianas with 236 genera and about 7,280 species. Lianas are restricted to few tropical genera, while twining lianas are found in the Paleotropics, those native to the Neotropics are scramblers. These include species in the genera *Aegiphila*, *Salvia*, *Scutellaria*, and *Volkameria*. A few species of twining vines in *Clerodendrum* and *Congea* are widely cultivated as ornamentals in the Neotropics. Lamiaceae are represented in the Neotropics by ca. 65 genera and about 1,690 species, of which only 55 are reported as lianas or climbing plants, most of which belong to the genus *Aegiphila*.

Diagnosics: Leave opposite (sometimes aromatic), simple, exstipulate; stems cylindrical or quadrangular; corolla gamopetalous; sterile *Aegiphila* may be confused with members of Malpighiaceae, but plants are scramblers not twiners, leaves are devoid of glands, and indument not T-shaped.

General Characters

1. **STEMS.** Young stems in herbaceous species often quadrangular and weak, ca. 5 mm in diameter, but in *Aegiphila* becoming cylindrical, reaching 3-10 m in length and 1-2 cm in diameter; cross sections in *Aegiphila* with numerous conspicuous, narrow rays and numerous dispersed, wide vessels (fig. 1a & b), the medulla often quadrangular.
2. **EXUDATES.** Exudates are odorless and colorless, not conspicuous in all genera.
3. **CLIMBING MECHANISM.** For the most part, all lianas and vines are scramblers (fig. 1c) and commonly have short lateral plagiotropic or hanging branches; some species of *Aegiphila* (e.g., *A. sufflava* Moldenke) are known to be twiners.
4. **LEAVES.** Leaves are opposite and simple, petiolate, and exstipulate.
5. **INFLORESCENCES.** Axillary or terminal, racemose, paniculate or corymbose cymes, or flowers axillary and solitary, never cauliflorous.
6. **PEDICELS.** Pedicels are long to short.
7. **FLOWERS.** Flowers bisexual, commonly heterostylous, zygomorphic; calyx gamosepalous, 4-5- dentate or lobed; corolla gamopetalous, funnel-shaped, tubular, or salverform, 5-lobed or bilabiate; stamens 4 (usually 2 shorter), the filaments adnate to the corolla tube alternating with the lobes, inserted or exerted; ovary superior, syncarpous, 2, 4-5-carpellate, the style terminal, long, filiform, stigma filiform, simple or branched; ovule solitary per carpel.
8. **FRUITS.** Fruit drupaceous indehiscent or splitting into 2-4 pyrenes or mericarps.

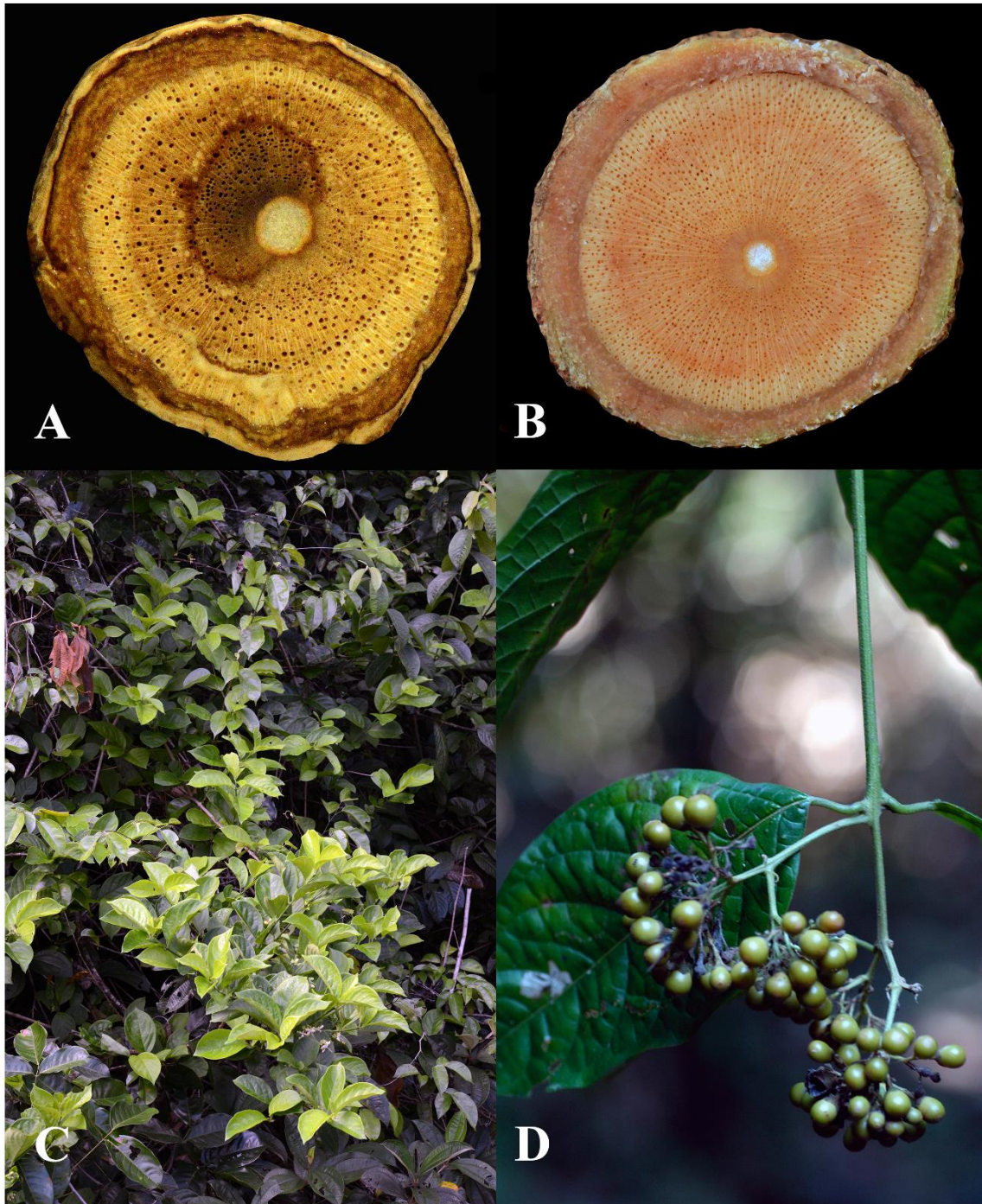


Figure 1. **A.** Stem cross section of *Aegiphila sufflava*. **B.** Stem cross section of *Aegiphila vitelliniflora*. **C.** *Aegiphila macrantha* scrambling habit with short lateral plagiotropic branches. **D.** *Aegiphila filipes* fruiting branch. Photo by P. Acevedo.

KEY TO THE GENERA

- 1. Lianas often reaching 3-10 m in length, stems woody > 1 cm diam.; leaves entire 2
- 1. Vines reaching ca. 2 m in length, stems herbaceous ca. 5 mm diam.; leaves serrate3
- 2. Calyx slightly acrescent and persistent as a cupule at fruit base; style branches elongate; fruit fleshy, indehiscent *Aegiphila*
- 2. Calyx not acrescent in fruit, not forming a cupule at base; style branches short; fruit dry, splitting in 4 pyrenes upon maturity *Volkameria*
- 2. Upper calyx lobe straight, not folded; stamens 2, with long connective *Salvia*
- 2. Upper calyx lobed transversely folded forming a protuberance (scutellate); stamens 4, with no connective tissue*Scutellaria*

GENERIC DESCRIPTIONS

AEGIPHILA Jacquin, *Observ. Bot.* 2: 3. 1767.



A. candelabrum, photo by M.R. Pace

Shrubs, small trees or scrambling lianas; stems commonly quadrangular when young, cylindrical when mature, reaching 3-10 m in length and 1-2 cm in diam.; cross sections with numerous conspicuous narrow rays, the medulla often quadrangular. Leaves opposite; simple, entire or slightly undulate, with pinnate venation. Inflorescences of distal or axillary cymes, commonly umbellate, capitate or paniculate; bracts inconspicuous. Calyx campanulate

to cupular, truncate or 4-5-dentate or -lobed; corolla nearly actinomorphic 4-5-lobed, white, greenish or yellowish; stamens 4 or 5, included or exserted; ovary superior, 4-locular, style

included or exerted, with 2 stigmatic, long, branches. Drupes fleshy, orange, red, purple, commonly ca 1 cm long; seeds 4.

Distinctive features: Scrambling lianas, fruits with acrescent cupular calyx at the base.

Distribution: A genus of about 140 species native to the Neotropics, with 45 species reported as vines or climbing shrubs; distributed from Mexico to southern Brazil, including Jamaica and Hispaniola, in humid lowland forests.

SALVIA Linnaeus, Sp. Pl. 23. 1753.



S. gesneriiflora, photo by Scott Zona

Erect, decumbent or rarely scrambling herbs or subshrubs. Stems commonly quadrangular, with scanty secondary growth. Leaves opposite, commonly serrate, with pinnate venation; petioles long to short, glandless. Inflorescence of terminal or axillary racemes, with flowers in verticels; bracts showy to minute. Calyx bilabiate, tubular to campanulate, conspicuously nerved; corolla bilabiate, straight or curved, variously colored; stamens 2, included or exerted; staminodes 2 or absent; stigmatic branches long, the posterior usually longer. Fruit of 4 nutlets.

Distinctive features: Scrambling herbs with opposite, serrate leaves; confused with species of *Russelia* (Plantaginaceae), but distinguished by the flowers and fruits (5-lobed calyx, 4 stamens, and capsular fruit in *Russelia*).

Distribution: A cosmopolitan genus with about 1,000 species, with only 3 species reported as climbers in the Neotropics, 2 in Mexico and 1 in Colombia.

SCUTELLARIA Linnaeus, Sp. Pl. 598. 1753.



S. sarmentosa, photo from Earth.com

Erect, decumbent or rarely scrambling, non-aromatic herbs or subshrubs. Stems commonly quadrangular, with scanty secondary growth. Leaves opposite, commonly serrate, with pinnate venation; petioles long to short, glandless. Inflorescence of terminal or axillary frondo-bracteate racemes, with flowers opposite or in a spiral, or flowers axillary and solitary; bracts showy to minute. Calyx bilabiate, upper lip with a shield-like projection or folding; corolla bilabiate, tubular or funnel-shaped, variously colored, but often bluish, or lavender; stamens 4,

included; stigmatic branches short, unequal. Fruit of 4 nutlets.

Distinctive features: Scrambling herbs with opposite, serrate leaves, sterile collections may be confused with species of *Salvia* or *Russelia* (Plantaginaceae), but distinguished by the scutellate, upper calyx lobe.

Distribution: A cosmopolitan genus with about 470 species, with only 2 species reported as climbers from Colombia, Ecuador and Peru.

VOLKAMERIA Linnaeus, Sp. Pl. 637. 1753.

Shrubs, small trees or scrambling lianas reaching 2-3 m in length. Stems cylindrical, sometimes with short axillary spines. Leaves opposite or three per node, simple, with entire margins and pinnate venation. Inflorescences of axillary cymes; bracts and bracteoles inconspicuous. Calyx with 5 sepals, deeply cleft to the base; corolla white, salverform, 5-lobed; stamens 4, didynamous, twice as long as the corolla; stigmas very short. Drupes fleshy, globose ovoid or depressed ovoid, separating into 2 or 4 pyrenes when ripe; seeds 4-8 per fruit.



V. ligustrina, photo by O. Vargas

Distinctive features: Scrambling shrubs; leaves opposite or 3 per node; corolla white salverform with long exerted stamens. Superficially similar to species of *Jasminum* (Oleaceae), but that genus has twining stems and flowers with included stamens.

Distribution: A pantropical genus with 10 species, 4 of which occur in the Neotropics (Mexico to northern South America) and only 2 reported as climbing shrubs; in dry to moist forest or scrubs at low elevations.

RELEVANT LITERATURE

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PICTURE VOUCHERS

Figure 1.

- A. *Aegiphila sufflava* Moldenke (Acevedo 7427).
- B. *Aegiphila vitelliniflora* Klotzsch (Acevedo 16562).
- C. *Aegiphila macrantha* Ducke (Acevedo 16075).
- D. *Aegiphila filipes* Mart. & Schauer (Acevedo 14337).