

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

CAPRIFOLIACEAE

By Pedro Acevedo-Rodríguez (Apr 2020)



Lonicera japonica Murray, photo by P. Acevedo

As currently recognized by APG-IV the family consists of 29 genera and about 890 species distributed throughout the northern hemisphere with few elements extending through the tropics to the southern hemisphere. In the Neotropics, the family is represented by 9 genera and about 214 species, of these only two genera (i.e., *Lonicera* and *Valeriana*) contain a total of 14 species of vines, 10 native species of *Valeriana* and 4 exotics species of *Lonicera*, some of which have become naturalized in the Neotropics. For the most part, they are found above 1000 m elevation in moist, to wet montane forests.

Diagnosics: Twining herbaceous or moderately woody vines, without any visible exudate; with opposite, simple or compound (trifoliolate or 5-pinnate), exstipulate leaves;

flowers with gamopetalous corolla, and inferior ovary.

General Characters

1. STEMS. Smooth, glabrous or pubescence of simple hairs; woody and hard in *Lonicera* with moderate secondary growth, developing cylindrical (fig. 1a & b), some species reaching 15 + m in length and about 3 cm in diam., e.g., *Lonicera japonica* Murray; cross sections with **regular** vascular anatomy (fig. 1b); bark papery flaky (fig. 2b). In *Valeriana*, herbaceous with scanty secondary growth.
2. EXUDATES. No visible exudate, however, many species of *Valeriana* have a strong fetid smell upon drying.
3. CLIMBING MECHANISMS. Climbing Caprifoliaceae are **twiners** (fig. 2c), in addition, some species of *Valeriana* (e.g., *V. scandens* L.) have **prehensile petioles** (fig. 2a).
4. LEAVES. Opposite, exstipulate, chartaceous to sub-fleshy, simple, sometimes trifoliolate to pinnate in *Valeriana*; blades entire, crenate, denticulate, serrate, or lobed; petioles short to long, glandless.
5. INFLORESCENCE. Axillary, racemes with bifurcate branching in *Valeriana* or axillary or terminal cymes in *Lonicera*; bracteoles often persistent.
6. PEDICELS. Short or absent (flower sessile).
7. FLOWERS. Bisexual or rarely unisexual, actinomorphic or sub-zygomorphic; calyx tubular, of 5 to 20 equal, short sepals; corolla tubular, longer than the calyx, with 5 equal or unequal lobes; stamens 3-5, the filaments adnate to the corolla throat, included or exserted, the anthers opening along longitudinal slits; ovary inferior, 2-3(5)-carpellate, with axile placentation, ovules pendulous, 1 or 3-8 per locule, the style elongate with capitate stigma in *Lonicera* and 2-3 lobate in *Valeriana*.
8. FRUIT. A few-seeded berry in *Lonicera* or a single-seeded, indehiscent achene with a crown of crescent plumose sepals.

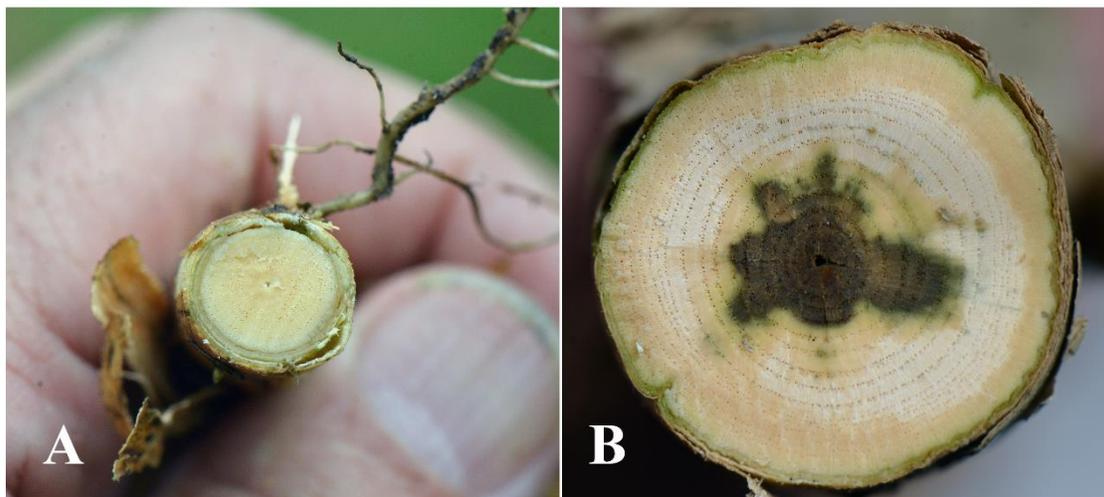


Figure 1. Stem cross sections of *Lonicera japonica*. **A.** Young stem ca. 1 cm in diam. **B.** Mature stems ca. 3 cm in diam. Photos by P. Acevedo.

KEY TO THE GENERA

1. Plant woody or sub-woody; bark papery flaky; leaves simple; corolla strongly (bilabiate) or slightly zygomorphic; fruit a fleshy berry with several seeds *Lonicera*
1. Plant herbaceous; bark smooth; leaves simple, trifoliolate or 5-pinnate; corolla actinomorphic; fruit a dry, indehiscent achene with a crown of plumose sepals. *Valeriana*



Figure 2. Vegetative features in Caprifoliaceae. **A.** Prehensile petiole of *Valeriana scandens*. **B.** Papery flaky bark of *Lonicera japonica*. **C.** Twining stems of *Lonicera japonica*. Photos by P. Acevedo.

GENERIC DESCRIPTIONS

LONICERA Linnaeus, Sp. Pl. 173. 1753.



L. japonica, photo by P. Acevedo

Twining vines, shrubs or small trees; stems hard, cylindrical reaching up to 3 cm in diam., the bark papery flaky (fig. 2b); cross section with regular anatomy (fig. 1a & b), producing no exudate; branches opposite, decussate and short. Leaves simple, opposite; exstipulate; petioles short. Inflorescences of axillary or terminal few-flowered cymes; bracteoles minute, persistent. Flowers 5-merous, bisexual; calyx tubular, 5-dentate or rarely truncate at the apex; corolla zygomorphic, tubular, infundibuliform, or campanulate, with the limb bilabiate, with 2 long lobes and 3 short lobes or the lobes nearly equal; stamens 5, subequal, exerted, the filaments adnate to the corolla throat; ovary inferior, with 2-3(-5) locules, with axile or rarely parietal placentation, the ovules pendulous, 3-8 per locule. Fruit a fleshy berry, with few ovate seeds.

Distinctive features: Twining vines with papery flaky bark and opposite, simple, exstipulate leaves, with long tubular-bilabiate, fragrant corolla.

Distribution: A genus of about 200 species, the majority in the Northern Hemisphere. A single species native to Mexico and Guatemala; in addition, four exotic species have been introduced as ornamentals in the Neotropics, with *Lonicera japonica* Thunb. ex Murray becoming adventive in Hispaniola and Puerto Rico.

VALERIANA Linnaeus, Sp. Pl. 31. 1753.



V. scandens, photo by P. Acevedo

Herbs or less frequently herbaceous twining vines (*V. scandens* known to have prehensile petioles), glabrous, pubescent to tomentose, usually with a fetid odor upon drying; often with woody or tuberous roots. Leaves opposite, simple, trifoliolate, 5-pinnate (in vine species), entire, dentate, crenate or lobed; stipules absent; petioles short to long. Flowers actinomorphic or slightly zygomorphic, bisexual or rarely unisexual, produced in terminal or axillary dichasial cymes; bracts and bracteoles persistent. Calyx tubular, with 5-20 lobes, dentate, persistent in fruit and developing into setose or plumose awns; corolla infundibuliform, campanulate, or hypocrateriform, the tube short, the lobes 5, expanded; stamens 3(4), adnate to the throat, included or exserted; ovary inferior, 3-

carpellate, the carpels with a single ovule, stigma 2-3-lobate. Fruit a dry indehiscent achene with a single fertile carpel, with 3 dorsal, 1 ventral, and 2 marginal ribs, crowned by the plumose sepals.

Distinctive features: Twining herbaceous vines few m long, usually with fetid smell; leaves opposite simple or compound; flowers minute; fruits minute, wind dispersed (with plumose crown awl-like sepals)

Distribution: A predominantly northern hemisphere genus of about 419 species; with 175 species in the Neotropics of which 9 are reported as vines; these distributed from Mexico south to Peru and Brazil and in the Greater Antilles except for Jamaica; found in moist to wet forests.

RELEVANT LITERATURE

Acevedo-Rodríguez, P. 2005. Vines and climbing plants of Puerto Rico and the Virgin Islands.
Contrib. United States National Herbarium 51: 1-483.

PICTURE VOUCHERS

Figure 1.

A-B. *Lonicera japonica* Thunb. ex Murray (no voucher).

Figure 2.

A. *Valeriana scandens* L. (Acevedo 16884).

B-C. *Lonicera japonica* Thunb. ex Murray (no voucher).