

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

CLUSIAEAE

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Clusia gundlachii, photo by P. Acevedo

A family of trees, shrubs, herbs, and lianas of pantropical distribution with some members extending to warm temperate zones. Worldwide, the family consists of 36 genera and about 1,600 species. In the Neotropics the family is represented by 23 genera and about 750 species, of which 13 species of *Clusia* are reported as sometimes climbing shrubs or lianas. These species are generally found below 500 m elevation but sometimes reaching higher elevations; occurring in wet, seasonally flooded, and gallery forests.

Diagnosics: Species of *Clusia* with climbing habit are scrambling shrubs, commonly with adventitious roots, decussate lateral branches, cream to yellow exudates, exstipulate, opposite, thick coriaceous leaves with fine, inconspicuous secondary venation and terminal dichasial cymes.

General Characters

1. **STEMS.** Branches are cylindrical or quadrangular; mature stems are cylindrical, in some species known to reach up to 15 cm in diam. and 20 m in length. Cross sections with regular wood anatomy, commonly oxidizing dark brown upon cutting (fig. 1a & b).
2. **EXUDATES.** Exudates are thick, odorless and reported as white, cream, yellowish or sometimes orangish (fig. 1a & b).
3. **CLIMBING MECHANISM.** Most species of climbing *Clusia* are trees or epiphytes that sometimes have long climbing branches or are *scramblers* that later produce adventitious roots (fig. 1a) that help them to secure their position on host plants.
4. **PUBESCENCE.** For the most part they are glabrous.
5. **LEAVES.** Leaves are simple, opposite, thick coriaceous, exstipulate, with entire margins, with inconspicuous secondary venation, and short glandless petioles.
6. **INFLORESCENCES.** Terminal, pyramidal-shaped dichasial cymes or panicles of cymes.
7. **FLOWERS.** Actinomorphic, unisexual; calyx of 4-6, free sepals; corolla of (3)5(14) free petals; mostly pedicelled; calyx forming a hypanthium that projects beyond the ovary; corolla of free petals, sometimes calyptrate or absent; staminate flowers: stamens 4 to numerous, the filaments connate or free, pistillode sometimes present; pistillate flower: staminodia 4-numerous, free or connate into a ring, sometimes secreting a resin, ovary superior, 4-12-carpellate, the ovules numerous, with axile placentation, the stigma peltate (fig. 2b).
8. **FRUITS.** Fleshy valvicular capsules with numerous seeds, covered with a fleshy, red or orange covering (fig 3b).



Figure 1. Stem of *Clusia* sp. **A.** Cylindrical trunk with removed tissue showing rapid oxidation and yellowish exudate. **B.** Removed tissue of stem, showing regular wood anatomy and cream to yellowish exudate within the cortex. Photos by P. Acevedo.



Figure 2. *Clusia* sp. **A.** Adventitious roots. **B.** Pistillate flower showing peltate stigma head. Photos by P. Acevedo.



Figure 3. *Clusia* sp. **A.** Dichasial cyme with flower buds. **B.** Dehiscent capsule showing numerous seeds with orange covering. Photos by P. Acevedo.

GENERIC DESCRIPTION

CLUSIA Linnaeus, Sp. Pl. 509. 1753.

As in family description.



C. gundlachii A. Stahl, photo by P. Acevedo

Distinctive features: Most species of *Clusia* are free standing trees or stranglers or shrubs, with a few species sometimes with climbing branches or scandent habit. Easily distinguished by the cream to yellow thick exudate and the thick-coriaceous leaves with inconspicuous secondary veins.

Distribution: A neotropical genus of 150 species of which 13 are reported as sometimes growing as climbing shrubs or lianas.

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.

Pipoly, J.J. & M.G. Gutafsson. 2002. Clusiaceae. In: S.A. Mori et al. (eds). Guide to the vascular plants of Central French Guiana. Memoirs of the New York Botanical Garden 76 (2): 212-224.

FIGURE VOUCHERS

Figure 1-3.

Clusia sp. (Acevedo 17323).