

## ICACINACEAE

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A pantropical family of 23 genera and ~160 species of shrubs, trees and lianas. In the Neotropics, the family is represented by 4 genera and ~20 species, of which 3 genera and 11 species are known as twining or scrambling lianas. For the most part, they are found in humid or wet lowland forests.

**Diagnosics:** Twining or scrambling lianas with simple, alternate, chartaceous leaves, lacking stipules; pubescence of stellate, hispid or Malpighiaceae hairs; flowers minute or small, white or cream; exudate mucilaginous; stem cross sections often with successive, concentric rings or bands of xylem and phloem.

### General Characters

1. **STEMS.** Flexible or rigid in early (non-climbing) stages. Moderately woody, developing nearly cylindrical to flattened (Figure 128); cross sections in *Pleurisanthes* with successive cambia producing concentric rings or arcs of xylem and phloem, or discontinuous arcs of xylem and phloem; xylem rings sinuate along the peripheral border, and dissected by very wide rays that seemingly divide the xylem into rectangular units (Figure 128B), vessels commonly very wide; some species of *Pleurisanthes* with very large medulla (Figure 128A).
2. **EXUDATES.** Mucilaginous or watery in *Pleurisanthes* (Figure 128B), not visible in *Leretia*.
3. **CLIMBING MECHANISMS.** Twining in *Pleurisanthes* and *Leretia*, scrambling in *Casimirella*.

4. LEAVES. Alternate, exstipulate; blades chartaceous to subcoriaceous, glandless, venation penninerved, intersecondaries common, tertiary venation clathrate or reticulate, commonly abaxially prominent in *Pleurisanthes*, margins entire, serrulate or dentate; petioles short, commonly grooved and twisted.
5. INFLORESCENCE. Axillary or terminal (on short branches), panicles of spikes or racemes in *Pleurisanthes*; dichasial paniculate cymes in *Casimirella*, much-branched cymes in *Leretia*.
6. PEDICELS. Commonly short to very short or lacking, commonly articulate.
7. FLOWERS. Bisexual, actinomorphic, 4- or 5-merous; calyx campanulate, sepals connate to various degrees; corolla white, cream or light yellow, of distinct petals; stamens 4 or 5, alternating with petals, the filaments free, the anthers opening along longitudinal slits, the connective occasionally with a prominent extension beyond anther sacs; ovary superior, sessile, unilocular, with 2 pendent ovules, style 1 or rarely 2 or 3, the stigma capitate.
8. FRUIT. A pyriform, ovoid, oblong or globose drupe, with woody or thin endocarp, inner endocarp surface with sparse hairs (in *Leretia* and *Casimirella*); seed one, with abundant endosperm.

## USES

Species of *Casimirella* in central Amazonia produce a very large (up to 200 kg), subterranean tuber, locally known as “batata mairá” which contains abundant starch that is edible after a toxic, bitter substance is removed by repeated washing (Howard 1990; Ribeiro 2018).

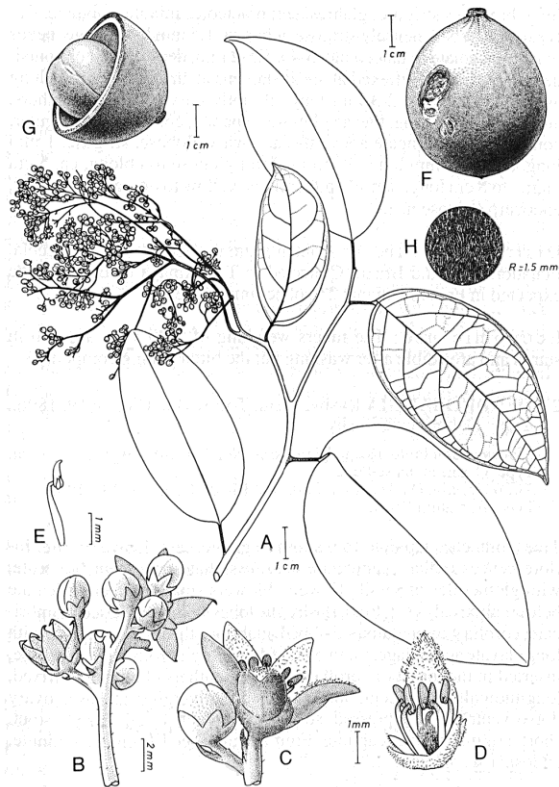
### Key to the genera of climbing Icacinaceae

1. Plant with Malpighiaceae pubescence .....*Leretia*

1. Plant lacking Malpighiaceae hairs .....2
2. Plant with hispid pubescence; inflorescence of axillary or terminal panicles of spikes or racemes, often with the flowers restricted to one face of the flattened inflorescence axis .....*Pleurisanthes*
2. Plant variously pubescent but not hispid; inflorescences terminal or extra axillary dichasial cymes ..... *Casimirella*

**CASIMIRELLA** Hassler, Feddes Repert. Spec. Nov. Regni Veg. 12: 249. 1913.

Scrambling lianas or less often shrubs or small trees, often with massive subterranean



*Casimirella ampla* (Miers) R.A. Howard,  
from Flora of the Guianas.

tubers that can weigh up to 200 kg. Shoots sometimes developing from large tubers. Pubescence densely stellate, glabrescent. Stems non-cylindrical, furrowed, with smooth gray bark, reaching up to 15 m in length, with scanty watery exudate; cross section with successive cambia producing non-cylindrical, concentric bands of xylem & phloem. Leaves alternate, simple with entire margins. Inflorescences terminal or supra axillary, umbelliform, paniculate dichasial cymes. Flowers bisexual, 5(6)-merous; pedicels articulated at the base. Sepals nearly free; petals

cream or light yellow, fleshy, free, adaxially tomentose, abaxially sericeous-hirsute; stamens 5, filaments free, glabrous, anthers dorsifixed, connectives with distinct apical protrusion; disk

absent; ovary superior, ovoid or conical, sessile with a terminal short, filiform style (rarely 2 or 3) with capitate stigma. Drupe ovoid, with woody endocarp, that is internally pubescent; seed solitary.

**Distinctive features:** Scrambling lianas with massive underground tubers; branches stellate pubescent; leaves simple, alternate; staminal connectives with distinct apical protrusion; endocarps pubescent on inner surface.

**Distribution:** A South American genus of seven species, three of which are climbers; northern South America south to Bolivia, Paraguay and SE Brazil; moist and wet forests; 200–500 m.

**LERETIA** Vellozo, Fl. Flumin. 99. 1829 [‘1825’].

Twining lianas or less often erect shrubs; pubescence of Malpighiaceae hairs. Stems



*Leretia cordata*, photo by E. Salicetti (La Selva, florula digital).

with no visible sap, reaching 10-12 m in length. Leaves alternate with entire margins; petiole with a distinct abscission line at the base.

Inflorescences hanging, axillary, of paniculate cymes. Flowers bisexual, 5-merous, pedicels articulate below the calyx. Sepals free nearly to the base;

petals light yellow, fleshy, strongly

revolute, adaxially pilose; stamens free, filaments glabrous, connectives with minute apical tip;

disc absent; ovary superior, conical, pilose, style glabrous, as long as the stamens, stigma

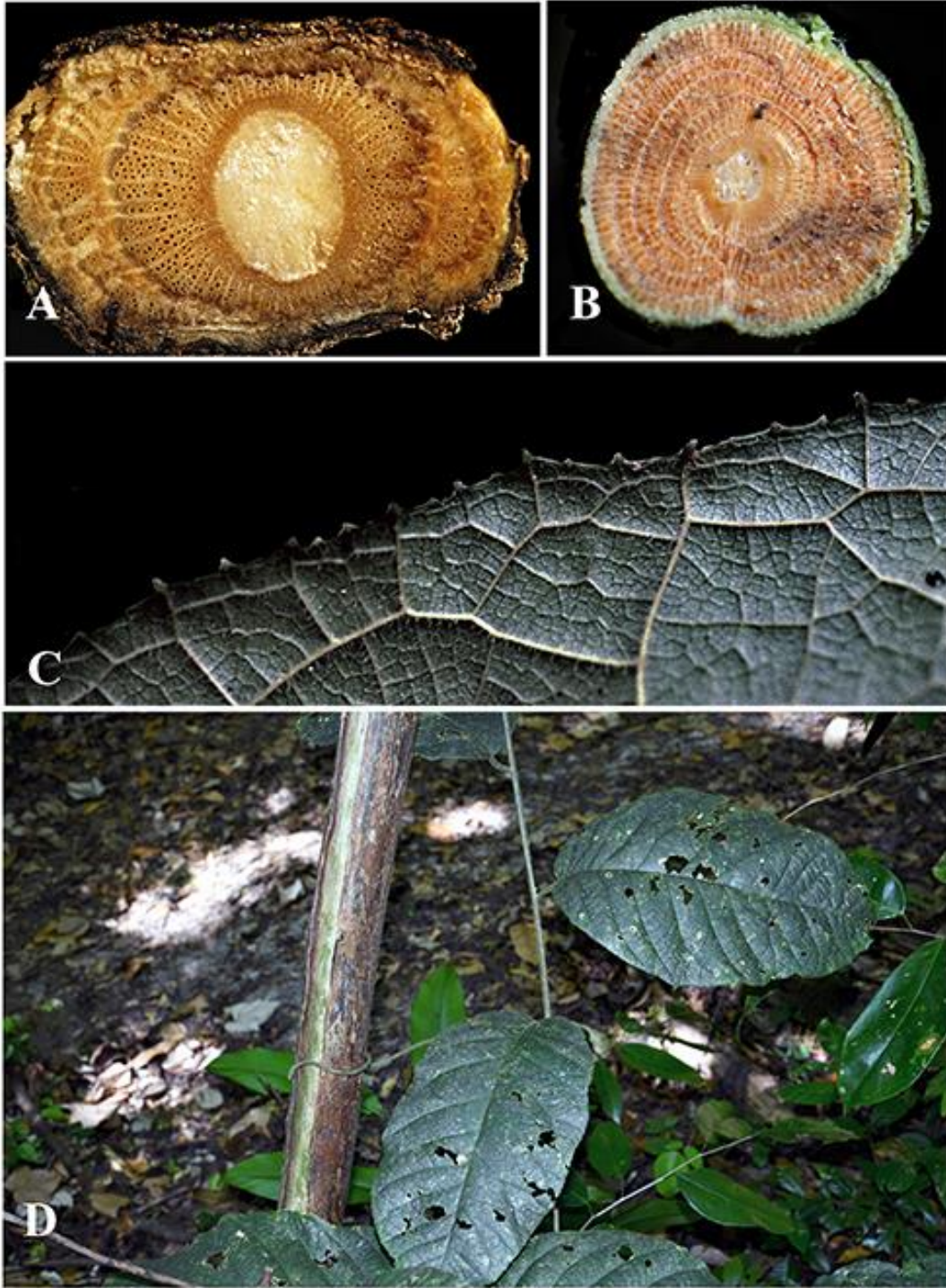
capitate, obliquely umbonate at the apex. Drupe depressed-ovoid-ellipsoidal; inner endocarp surface lined with sparse hairs.

**Distinctive features:** Twining lianas covered throughout by Malpighiaceae pubescence; leaves simple, with entire margins; petioles canaliculate with abscission line at base; inner endocarp surface sparsely pubescent.

**Distribution:** A neotropical genus of two species, one of which, *L. cordata* Vell., is a liana; Panama, northern South America to Ecuador, Peru and Brazil; moist or wet, terra firme forests; 200–500 m.

**PLEURISANTHES** Baillon, *Adansonia* 11: 201. 1874.

Twining lianas with pubescence of hispid hairs, climbing by means of a sympodial succession of twinig stems with determinate growth that behave like tendrils; stems cylindrical or flattened, attaining up to 5 cm in diam. and 10-12 m in length; exudate watery or mucilaginous, especially at the periphery of the medulla; cross section with successive cambia producing concentric rings or bands of xylem and phloem (Figure 128A, B). Leaves alternate, distichous, simple with entire or dentate margins; venation penninerved, tertiary veins commonly clathrate and abaxially prominent, sometimes bullate or abaxially sericeous-tomentose; domatia absent. Inflorescences terminal or supra axillary panicles of spikes or racemes, flowers often restricted to one side of the inflorescence axis; pedicels non-articulated. Flowers bisexual, 4–5(6)-merous. Calyx cupulate, sepals nearly free, much shorter than the petals; petals free or connate at base, fleshy, commonly with prominent midvein, adaxially glabrous; stamens 4–5, free, filaments filiform; disc absent; ovary conical, pilose; style short to as long as ovary, the stigma capitate, minute. Drupe ellipsoid to obovoid, orange when mature.



**Figure 128.** *Pleurisanthes*. **A.** Stem cross section of *Pleurisanthes* sp. with non-cylindrical, concentric bands of xylem and phloem. **B.** Stem cross section of *P. artocarpi*, with nearly cylindrical, concentric rings of xylem and phloem. **C.** Glandular-dentate leaf margin of *P. emarginata*. **D.** *P. artocarpi*, with sympodial, twining stems with determinate growth. Photos by P. Acevedo.

**Distinctive features:** Twining lianas; stems with successive cambia; older branches strap-shaped; leaves simple, alternate, with tertiary clathrate venation, secondary veins often protruding beyond margin and forming small teeth.

**Distribution:** A South American genus of six or seven species of lianas; northern South America to Ecuador, Peru and Brazil; moist to wet forests; 200–500 m.