

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

## SMILACACEAE

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*Smilax sp.*, photo by P. Acevedo

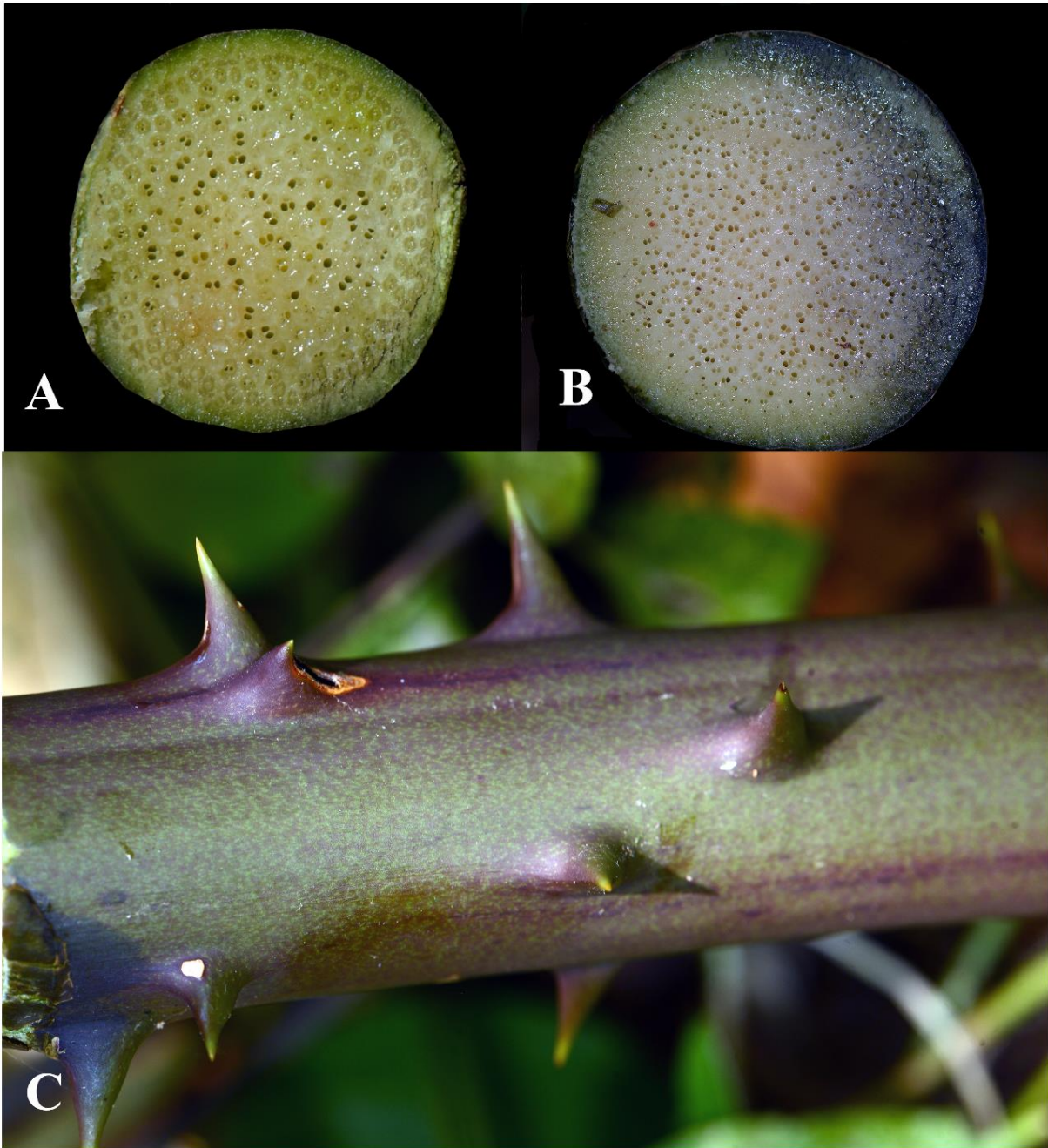
A widespread family with tropical to temperate distribution of rhizomatous, herbaceous to subwoody, tendrilled vines. The family contains 3 genera and about 300 species, most of which belong to the genus *Smilax*, the only representative in the Neotropics with

about 115 species in this region. The genus is generally found below 1500 m elevation with a few species reaching higher elevations and occurs in wet to dry forest and savannas.

**Diagnosics:** *Smilax* is easily recognized by the presence of two stipular tendrils at the junction of the petiole with the leaf sheath. Stems are wiry, and usually armed with prickles, the leaves are simple, with 3-11 main arcuate, parallel veins. Fruits are berries of various colors.

## General Characters

1. **STEMS.** Stems are deep green, cylindrical, **wiry** (reaching up to 2.5 cm in diam.) and commonly provided with straight **prickles**. Cross section with typical monocot configuration of scattered, discrete **bicollateral vascular bundles**.
2. **EXUDATES.** Exudates are odorless and *colorless*.
3. **CLIMBING MECHANISM.** All species of *Smilax* have a pair of long, simple, stipular **tendrils**, however, the leaves of fertile branches usually lack tendrils.
4. **LEAVES.** Leaves are simple, alternate, distichous, with entire or spiny margins, parallel venation (3-11 main arcuate veins), and short to long petioled.
5. **INFLORESCENCES.** Axillary or terminal in short branches, short to long-peduncled umbels; peduncle distally enlarged into a receptacle.
6. **FLOWERS.** *Actinomorphic*, unisexual (plant dioecious); pedicelled. Tepals 6, in two whorls, commonly white, cream or greenish, of similar size and shape, free, erect or reflexed at apex. Staminate flowers: stamens 6 in two whorls, the filaments free or less often connate into a tube; anthers opening by longitudinal slits; pistillode absent. Pistillate flowers: staminodes sometimes present; gynoecium superior, syncarpous, 3-carpellate, with 1 or 2 axial ovules per carpel, the style usually absent, the stigmas 3, reflexed.
7. **FRUITS.** Globose, fleshy berries, green, red, orange, or black, < 1 cm wide.
8. **SEEDS.** Seeds prismatic, 1–3 per fruit.



**Figure 1.** A & B. Stem cross sections of two species of *Smilax*, showing wide, evenly scattered vessels. C. Armed stem of *Smilax* sp. Photos by P. Acevedo.



**Figure 2.** A. Young shoot of *Smilax sp.* showing precociously developed tendrils. B. *Smilax coriacea*, branch with pistillate inflorescences. C. Staminate inflorescences of *Smilax sp.* Photos by P. Acevedo.



**Figure 3.** A. Pistillate umbel of *Smilax sp.* B. Infructescence of *Smilax sp.* Photos by P. Acevedo.

## GENERIC DESCRIPTION

**SMILAX** Linnaeus, Sp. Pl. 1028. 1753.

Dioecious, rhizomatous, tendrilled vines. Stems wiry, cylindrical or angled, green, with



*S. coriacea*, photo by P. Acevedo

recurved thorns; 2–5 mm in diam. and up to 10 m long. Leaves in 1 or 2 fascicles per node, short-petiolate or sessile, with fine parallel venation. Inflorescence of axillary, simple or compound racemes, with flowers in small fascicles. Flowers unisexual; long-pedicelled; tepals 6, in two whorls, free, of similar shape and size, yellowish or greenish white.

Stamens six, opposite to the tepals, filaments free, flattened, subulate; anthers oblong to linear.

Ovary trigonous-globose or trigonous-oblong, with 4 to 6 ovules per carpel; style trigonous; stigma trilobed. Fruit a trigonous loculicidal capsule; seeds 1-3 per locule, nearly lenticular with a narrow, panoramic wing.

**Distinctive features:** Stems twining, wiry, green and spiny, leaves in lateral fascicles.

**Distribution:** A pantropical genus of about 260 species, some of which extends into temperate regions in North America, Europe and Eastern Asia. Represented in the Neotropics by 110 species, that are distributed from Mexico to Northern Argentina and Uruguay; found in diverse habitats in scrubs, and dry to humid forests, from sea level to 3600 m elevation.

## USES

In some species, the young shoots and tendrils are used as salads or cooked vegetables, the leaves as a source of tee, and starchy rhizomes are eaten as potatoes. Local medicines such as

stomach tonic are derived from the rhizomes of some species (Mitchell, 2004; Dahlgren et al. 1985). Since some species contain poisonous saponins it is advisable not to consume any of these unless they are confirmed to be safe.

## **RELEVANT LITERATURE**

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