

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

## ANACARDIACEAEAE

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*Toxicodendron radicans*, photo by P. Acevedo.

A predominantly pantropical family, extending to temperate regions, mostly of trees or shrubs, with very few lianas or scrambling shrubs; most diverse in the lowlands of the tropics. Lianas and climbing shrubs in the Neotropics are restricted to the genera *Attilaea*, *Rhus*, and *Toxicodendron*. A morphologically diverse family of about 81 genera and 800 species; represented in the Neotropics by 31 genera and about 170 species, three of which are lianas or scrambling shrubs.

**Diagnostics:** Leaves alternate, pinnately compound, and stipulate, usually with resinous, caustic exudate.

### General Characters

1. **STEMS.** Stems are cylindrical, with a regular anatomy showing wide rays. Stems of *Rhus* can reach a few centimeters in diameter and about 5 to 6 m in length, while in *Attilaea* and *Toxicodendron* they can reach 10 cm in diameter and 15 to 20 m in length.

2. EXUDATES. Exudates are resinous, colorless or white usually turning black on exposure, and highly toxic, causing severe dermatitis on contact.
3. CLIMBING MECHANISM. *Toxicodendron* climbs by means of adventitious roots; the climbing species in *Attilaea* and *Rhus* are scrambling shrubs.
4. LEAVES. Leaves are alternate, trifoliolate or pinnately compound, petiolate, and stipulate.
5. INFLORESCENCES. Flowers are produced in hanging, ascending or spreading, axillary, or distal paniculate thyrses or panicles. Inflorescences are never cauliflorous.
6. FLOWERS. Flowers unisexual or bisexual, actinomorphic, 4–5-merous; sepals free nearly to the base; petals free; stamens 5 or 8–10 (when 8–10 in two unequal series), anthers dorsifixed, opening by longitudinal slits; ovary superior, 2- or 3-carpellate, syncarpous, subtended by a more or less cupular nectary disk, style short, stigma capitate; ovule one per carpel, with basal placentation.
7. FRUITS. Fruit fleshy drupes, enclosing a single seed.

### **Key to the genera of climbing Anacardiaceae**

1. Root-climbing lianas with trifoliolate or less often 5-foliolate pinnate leaves (Mexico, C. America) ..... *Toxicodendron*
1. Scrambling shrubs; leaves 7–11-foliolate pinnate ..... 2
2. Leaflets with secondary veins not collected into a marginal vein; inflorescences of long (>15 cm) paniculate thyrses (Mexico) ..... *Rhus*
2. Leaflets with secondary veins collected into a conspicuous marginal vein; inflorescence of short (ca. 1 cm) racemose cymes (Mexico, Guatemala) ..... *Attilaea*

### **GENERIC DESCRIPTIONS**

**ATTILAEA** E. Martínez & Ramos, Acta Bot. Hungarica 49: 353. 2007.

Deciduous, small trees, erect or scrambling shrubs, with short, basal branches modified into spines. Leaves alternate, imparipinnate, 7–13-pinnate, exstipulate; leaflets subopposite, with

crenate margins, secondary veins collected into a conspicuous marginal vein. Inflorescences of short paniculate cymes 6–7(–12) mm long; bracts triangular, keeled, reddish. Calyx of 5, minute, deltoid sepals of equal size; petals 5, red, oblong, free to the base; stamens 8–10, in two series of equal length; ovary superior, bicarpellate, with an annular, lobed nectary at base, partly syncarpous, each carpel bearing a short style at apex, stigma capitate. Fruit a red drupe with fleshy pericarp.

**Distinctive features:** Inner bark red; short, basal branches modified into spines; leaflets with a marginal collecting vein.

**Distribution:** A genus of a single species (*A. abalak* E. Martínez & Ramos) known from the states of Campeche and Quintana Roo, Mexico and Guatemala.

**RHUS** Linnaeus, Sp. Pl. 265, 1753.

Polygamous, dioecious small trees, erect shrubs or scandent shrubs, with caustic exudate,



*Rhus terebinthifolia*, photo by P. Acevedo.

soon oxidizing black. Leaves alternate, imparipinnate, 3–11-pinnate or sometimes unifoliolate; leaflets opposite or nearly so, with crenate margins, secondary veins not collected into a conspicuous marginal vein. Inflorescences of distal or axillary panicles; bracts and bracteoles minute, deltoid. Calyx of 5, minute, deltoid sepals of equal size; petals 5, free; stamens 5 or 10; ovary superior, 3-carpellate, syncarpous, unilocular, subtended by an annular, 10-lobed nectary, style terminal with 3 stigmatic branches at the apex. Fruit a laterally compressed, red or orange drupe, with fleshy pericarp, < 1 cm long.

**Distinctive features:** Inflorescence of panicles, flowers sessile or pedicellate.

**Distribution:** A genus of > 35 species distributed in the northern hemisphere (N America, Europe, Asia) south to the Philippines in the Old World and to Panama in the New World; most species are centered in Mexico. The only scrambling species, *R. terebinthifolia* Schltld. & Cham., is distributed from Mexico south to Costa Rica.

**TOXICODENDRON** Miller, Gard. Dict. Abr. ed., 4. 1754.

Polygamous, dioecious trees, erect shrubs or root-climbing lianas, with caustic exudate,



*Toxicodendron radicans*, photo by P. Acevedo.

soon oxidizing black with exposure to air. Leaves alternate, trifoliolate or 5-pinnate; leaflets with crenate to dentate margins. Inflorescences of axillary panicles; bracts and bracteoles minute, deltoid. Calyx of 5, minute, deltoid sepals of equal size; petals 5, free, reflexed, stamens 5; ovary



superior, 3-carpellate, syncarpous, unilocular, subtended by an annular 5-lobed nectary, style terminal with 3 stigmatic branches at the apex. Fruit a globose, white drupe, with fleshy pericarp.

**Distinctive features:** Root-climbing liana, with trifoliolate, exstipulate leaves, usually with reddish petiolules.

**Distribution:** A genus of about 22 species distributed in the northern hemisphere, in North America and temperate East Asia, and from southern Canada to Bolivia. The only climbing species found in the Neotropics, *T. radicans*, is found in China, Canada, United States, and Mexico.

## RELEVANT LITERATURE

Martínez, E. and C.H. Ramos Álvarez. 2007. Un nuevo género de Anacardiaceae de la Península de Yucatán. *Acta Botanica Hungarica* 49: 353–358.

Medina Lemos, R., and R.M. Fonseca. 2009. Anacardiaceae. *Flora del Valle de Tehuacán-Cuicatlán*. Fasc. 71. 60 pp.

Pell, S.K. J.D. Mitchell, A.J. Miller, and T.A. Lobova. 2011. Anacardiaceae, In K. Kubitzki, *The Families and Genera of Vascular Plants. Flowering Plants. Eudicots: Sapindales, Cucurbitales, Myrtaceae: 7–50*. Springer, Berlin.

## PICTURE VOUCHERS

*Rhus terebinthifolia* (Acevedo 16409)