

ARECACEAE

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A tropical family with 182 genera and ~2,000 species of large to small, erect, prostrate or acaulescent palms, and less often scrambling lianas, commonly climbing through the aid of cirri or flagella. Climbing Arecaceae in the Old World are found in 11 genera, of which *Calamus* L. is the largest genus with ~440 species of rattan palms. In the Neotropics, lianas are restricted to the genus *Desmoncus*, to two species of *Chamaedorea*, and one species of *Bactris*. They are all scramblers, but in *Desmoncus* the species climbs through the aid of cirri with hook-shaped acanthophylls, in *Chamaedorea*, climbing is aided by the slightly rigid distal leaflets (Henderson pers. comm.), and in *Bactris* by the presence of foliar spines; moist, wet, or seasonal lowland forests in continental tropical America.

Diagnosics: Scrambling palms, with thin, flexible stems reaching several m in length.

General Characters

1. **STEMS.** With the exception of *Desmoncus giganteus* A.J. Hend. and *Chamaedorea elatior* Mart., all climbing palms in the Neotropics have clustered stems. They are woody, cylindrical, unarmed in *Chamaedorea* and *Bactris* but heavily armed with straight sharp spines in *Desmoncus*, known to reach 3–11(20) m in length and in 2–3(4.8) cm in diam.; cross section with an atactostele with collateral vascular bundles with a fiber sheath or sclerenchyma scattered in the ground tissue (Quiroz et al. 2008).
2. **EXUDATES.** Watery or no visible exudate.
3. **CLIMBING MECHANISMS.** All species are scramblers; *Chamaedorea* and *Bactris* lack cirri, while *Desmoncus* has cirri that help in climbing and clinging on to host plants. The

cirrus is a whip-like structure derived from the distal portion of leaves, where the leaflets are reduced into down-pointing hooks or acanthophylls.

4. LEAVES. Alternate, pinnately compound; leaflets sessile, long, opposite or alternate, elliptic or oblong, membranaceous to coriaceous, flat or involute, with parallel venation and entire margins; petiolules short, enlarged.
5. INFLORESCENCE. Axillary panicles, solitary or seldom 2–3 per node, with armed or unarmed rachis and spathe, with sessile flowers, lacking bracts at maturity.
6. FLOWERS. Unisexual (the plant dioecious or monoecious), commonly ~5 mm long; calyx of 3 distinct sepals; petals distinct or variously connate; stamens 6, the filaments free, the anthers opening through longitudinal slits; ovary superior, tricarpellate, trilocular with 1 ovule per locule, the stigma 3, short.
7. FRUIT. Small, drupe with fleshy mesocarp, often red or orange at maturity.

USES

The stems of neotropical climbing Arecaceae are commonly used for basketry. Several species of *Desmoncus* are used in local communities (Belize, Brazilian state of Amazonas) as a source for basket frames and rustic furniture (Belsky & Siebert 1998). In Guatemala and Peru various species of *Desmoncus* are used as a substitute for rattan in the making of fine furniture (Escalante et al. 2004).

Key to the genera of climbing Arecaceae

1. Distal portion of leaves modified into a cirrus that help in climbing and clinging on to host plants..... *Desmoncus*
1. Distal portion of leaves with regular leaflets, not modified into cirri.....2

2. Plant unarmed; stems commonly solitary; inflorescence paniculate, with orange axes

..... *Chamaedorea*

2. Plant totally armed with straight spines; stems commonly clustered; inflorescence fasciculate,

axes green, distally yellowish *Bactris*

BACTRIS Jacquin ex Scopoli, *Introd.* 70. 1777.

With the exception of *B. glassmanii* A.J. Hend. which is a scrambling palm aided by



Bactris glassmanii, photo by A. Popovkin.

numerous spines on petioles and leaf rachis, the species in this genus are slender, erect, cespitose, understory palms. *Bactris glassmanii* is a dioecious, armed palm with weak, cylindrical, slender scrambling stems that reach 12 m in length and 0.8–2 cm in diam. Leaves alternate, pinnately

compound, up to 1.5 m long; pinnae linear

or lanceolate, 12–25 per side, irregularly arranged in clusters of 2–5, spreading in different planes; rachis angled, with scattered spines; petioles 10–60 cm long, densely covered with yellowish brown, flat spines; sheath densely spiny. Inflorescences axillary, short, with several green axes that are distally yellowish; flowers in triad with a central pistillate flower and two lateral staminate flowers. Flowers short pedicellate, unisexual, actinomorphic, minute; staminate flowers ephemeral; pistillate flowers with tubular corolla. Fruit a depressed globose, purple-black drupe, 0.6–2 cm in diam.

Distinctive features: Long, slender cane-like stems; petioles, leaf-sheath, and spathe densely spiny. May be confused with *Desmoncus* but distinguished by the lack of cirri.

Distribution: A neotropical genus of ~75 species, with a single climbing species, *B. glassmanii* which is naturally found in the Atlantic coastal forests in Brazil (Alagoas, Bahia, Pernambuco), in coastal restinga vegetation on sandy soils, near sea level (Henderson, 2000).

CHAMAEDOREA Linnaeus, Sp. Pl. 1032. 1753.

With the exception of *C. elatior* which is a scandent palm aided by rigid down-pointing



Chamaedorea elatior, photo by T. Rodd.

distal leaflets, the species in this genus are erect, procumbent or acaulescent understory palms.

Chamaedorea elatior is a dioecious unarmed palm with weak, cylindrical, slender scrambling stems that reach several m in length and 1.5–2 cm in diam. Leaves alternate, pinnately compound, up to 3 m long; leaflets narrowly elliptic or oblong, opposite or subopposite, with parallel venation, reflexed and slightly rigid at the base, supporting the plant on to the host plants; petioles commonly short. Inflorescences axillary, panicles with orange axes. Flowers sessile, unisexual, actinomorphic,

3-merous, minute; stamens 6; ovary superior but slightly

embedded on the inflorescence rachilla. Fruit a globose, black drupe, ~1 cm in diam.

Distinctive features: Several m long, unarmed palm with weak, scandent stems; inflorescences with orange axes; fruits green. May be confused with members of Cyclanthaceae, but *Chamaedorea* do not produce adventitious roots.

Distribution: A neotropical genus of ~100 species, with two climbing species, *C. elatior* which is naturally found in Mexico (Chiapas and Vera Cruz), central Guatemala (Huehuetenango and Alta Verapaz) and Honduras; and *C. tacanensis* Pérez-Farr. et al. in moist or wet forests.

DESMONCUS Linnaeus, Sp. Pl. 1032. 1753.

Monoecious, scandent palms, most parts armed with straight sharp spines; climbing through the aid of cirri. Stems cylindrical, reaching 3–10 m in length and up to 3.5 cm in diam.;



Desmoncus leptoclonos, photo by P. Acevedo.

cross sections with typical monocot atactostele with collateral vascular bundles scattered in the ground tissue; exudate inconspicuous. Leaves alternate, pinnately compound, usually more than 1 m long, commonly distally modified into a cirrus where leaflets are reduced to hook-shaped acanthophylls; basal and medial leaflets commonly opposite, elliptic or oblong, with parallel venation; petioles, rachis and sometimes the leaflet costa with straight or slightly recurved spines. Inflorescences axillary panicles, the axis green, commonly armed with spines; spathe densely covered with straight spines. Flowers commonly ~5 mm long, cream. Drupes ellipsoid or

globose, 1–1.5 cm long, red, orange or yellow at maturity.



Desmoncus stem x-section, photo by M.R. Pace.

Distinctive features: Armed slender scrambling palms easily distinguished by the cirri with down-pointing acanthophylls developed from the distal portion of leaves.

Distribution: A neotropical genus of 25 species of scrambling lianas (Henderson 2011); distributed from southern Mexico to southern Brazil, Trinidad and Lesser Antilles (Martinique, St. Vincent and Barbados), often in lowland gallery or seasonally flooded forests.