

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

## ARECACEAE

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*Desmoncus leptoclonos*, photo by P. Acevedo

A tropical family with 182 genera and about 2000 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 about 440 species of rattan palms. In the Neotropics, lianas are restricted to *Desmoncus* and to one species of *Chamaedorea*. The former climbs through the aid of cirri with hook-shaped acanthophylls while in the latter the distal leaflets are slightly rigid but not modified into acanthophylls (Henderson pers. comm.); they are found in moist, wet, or seasonal lowland forests in continental tropical America.

**Diagnostics:** Scrambling palms, the genus *Desmoncus* commonly provided with spines in all vegetative parts and the inflorescence, and the distal portion of leaves modified into a cirrus with down-pointing acanthophylls.

### 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 ca. 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.

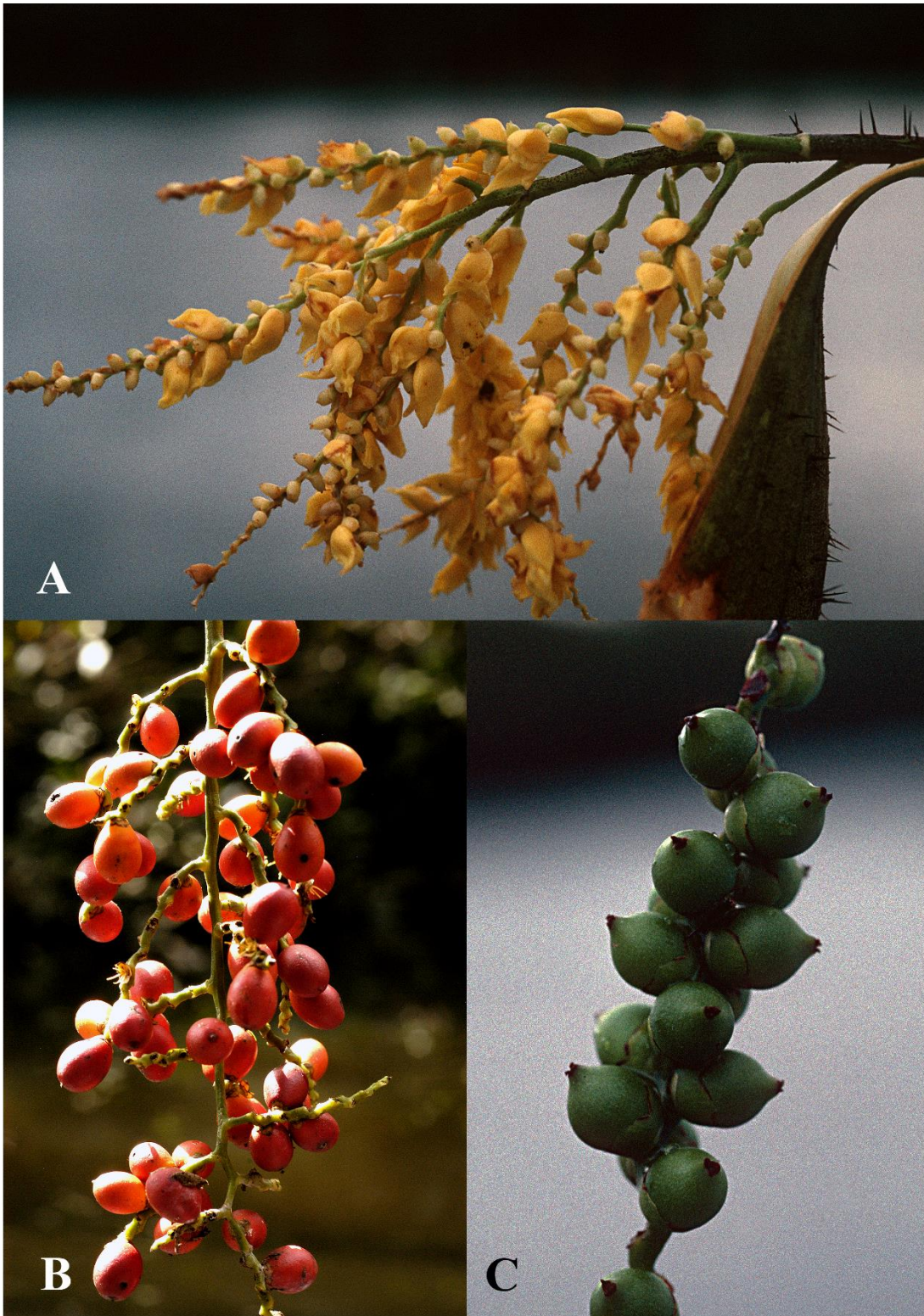
### KEY TO THE GENERA

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*



**Figure 1.** Vegetative organs in *Desmoncus*. **A.** Habit of *D. leptoclonos* with distal portion of leaves modified as cirri. **B.** Leaf of *D. horridus* armed with straight sharp spines. **C.** Juvenile plant of *D. myriacanthos*. **D.** Middle portion of cirrus with hook-shaped acanthophylls in *D. horridus*. Photos by P. Acevedo.





**Figure 2.** Fertile organs in *Desmoncus*. **A.** Inflorescence of *D. orthacanthos*. **B.** Infructescence of *Desmoncus* sp. **C.** Detail of infructescence in *D. orthacanthos*. Photos by P. Acevedo.

## 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 et al, 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).

## GENERIC DESCRIPTION

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



*B. glassmanii*, photo by Alex Popovkin.

With the exception of *B. glassmanii* Med.-Costa & Noblick ex A.J. Hend. which is a scandent palm aided by 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 pedicelled, 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 about 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).

**CHAMAEODORA** Linnaeus, Sp. Pl. 1032. 1753.



*C. elatior*, photo by Tony Rodd.

drupe, ca. 1 cm in diam.

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

**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 about 100 species, with a single climbing species, *C. elatior* which is naturally found in Mexico (Chiapas & Vera Cruz), central Guatemala (Huehuetenango and Alta Verapaz) and Honduras, in moist or wet forests.

**DESMONCUS** Linnaeus, Sp. Pl. 1032. 1753.



Cirrus of *D. leptoclonos*, photo by P. Acevedo

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.; 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



Stem cross section of *D. cirrhifer*, photo by P. Acevedo

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

ca. 5 mm long, cream. Drupes ellipsoid or globose, 1-1.5 cm long, red, orange or yellow at maturity.

**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 24 species, 23 of which are scrambling lianas; distributed from southern Mexico to southern Brazil, Trinidad and Lesser Antilles (Martinique, St. Vincent and Barbados), often in lowland gallery or seasonally flooded forests.

## RELEVANT LITERATURE

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## PICTURE VOUCHERS

Figure 1.

- A. *Desmoncus leptoclonos* Drude (no voucher).
- B. *Desmoncus horridus* Mart. (Acevedo 16744).
- C. *Desmoncus myriacanthus* Dugand (no voucher).
- D. *Desmoncus horridus* Mart. (Acevedo 16744).

Figure 2.

- A. *Desmoncus orthacanthos* Mart. (Acevedo 8070).
- B. *Desmoncus* sp. (Acevedo 14585).
- C. *Desmoncus orthacanthos* Mart. (Acevedo 8070).