CYCLANTHACEAE

P. Acevedo-Rodríguez

A neotropical family of 12 genera and ~225 species of terrestrial, epiphytic or epilithic herbs or less often root-climbing vines. A total of 48 species in five genera are reported as vines; distributed from south-central Mexico south to SE Brazil, and Cuba; most diverse in moist lowland forests and cloud forest of the Andean range up to 3,000 m elevation.

Diagnostics: Root-climbing vines, usually a few m long, but up to 15 m in *Thoracocarpus.* Stems cylindrical, slender; leaves alternate with parallel venation, commonly bifid at apex, long-petioled.

General Characters

1. STEMS. Cylindrical, subwoody; commonly 3–5 m long, but some species (e.g., *Thoracocarpus bissectus* (Vell.) Harling) reaching 10 or more m in length, and commonly a few cm in diam., bark smooth. Cross section with typical monocot configuration of scattered, discrete bicollateral vascular bundles (Figure 24D).
2. EXUDATES. Clear, watery or mucilaginous exudates.
3. CLIMBING MECHANISMS. Long adventitious roots at the nodes below the leaf insertion (Figure 24C).
4. LEAVES. Large, alternate, spiral in vines, coriaceous with parallel veins (Figure 24A), the blade commonly bifid on distal half, or plicate; petioles elongated, woody, adaxially flattened in lianas, sheathed at base.
5. INFLORESCENCE. A solitary, peduncled spadix, axillary, subtended by 2 to several clustered or loosely arranged bracts (spathes).

6. FLOWERS. Unisexual, actinomorphic or zygomorphic, in the lianas spirally arranged with 1 pistillate flower surrounded by 4 staminate flowers; staminate flowers without perianth, with numerous stamens; pistillate flowers with 4 tepals, 4 long staminodes opposite to the tepals; ovary inferior, partly inferior to superior, of 4 connate carpels, unilocular; ovules numerous per locule, with parietal placentation, the stigmas 4, stocky, short, sometimes basally connate into a short style.
7. FRUIT. A coherent berry within the spadix.

Key to the genera of climbing Cyclanthaceae

1. Leaves distichous, entire, acuminate at apex ..... ***Ludovia***

1. Leaves spiral, commonly bifid.....2

2. Pistillate flowers and berries free..... ***Evodianthus***

2. Pistillate flowers and berries connate 3

3. Spathes 3–5(8), diminishing in size acropetally; seeds smooth ..... ***Asplundia***

3. Spathes 8–11, diminishing in size basipetally; seeds striate ..... ***Thoracocarpus***

ASPLUNDIA Harling, Acta Horti Berg. 17: 41. 1954 (nom. cons.).

Terrestrial or epiphytic herbs or root-climbing vines, mostly 1–2 m long, but some species reaching up to 10 m in length. Stems cylindrical, commonly with short internodes. Branching monopodial, short, bearing several spiral, bifid leaves; petioles long, adaxially flattened.

Asplundia ceci A. Staminate & pistillate inflorescences. B. Climbing habit. Photos by B. Hammel.

Spadix widely ellipsoid, subtended by 3–5 spathes that diminish in size acropetally; pistillate flowers actinomorphic or zygomorphic, pedicellate, partly connate, surrounded by 4 staminate flowers. Berries partly connate.

Distinctive features: Root-climbing vines with spiral bifid, plicate leaves; spadix widely ellipsoid.

Distribution: A neotropical genus of ~100 species, 47 of which are reported as root-climbing vines or lianas; although the genus is distributed from Mexico south to SE Brazil, climbing species are known only from Panama, south to Peru and east to the Guianas; common in wet or moist lowland forests.

EVODIANTHUS Oersted, Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1857: 194. 1857.

Terrestrial or epiphytic herbs, or root-climbing vines. Stems cylindrical, slender.

Evodianthus funifer, photo by A. Monro.

Branches sympodial, short, bearing several spiral, bifid leaves; petioles long, adaxially flattened. Spadix subtended by a cluster of 3 spathes; staminate flowers actinomorphic, tepals in two whorls; pistillate flowers and berries free.

Distinctive features: Vegetatively similar to other genera of Cyclanthaceae but distinguished by the free pistillate flowers and berries on the spadix.

Distribution: A single species *E. funifer* (Poit.) Lindm. distributed from Nicaragua south to Bolivia and the Amazon basin to NE Brazil; in moist and wet, lowland forests.

LUDOVIA Brongniart, Ann. Sci. Nat. Bot. ser. 4, 15: 361. 1861 (nom. cons.).

Erect terrestrial herbs, epiphytes or root-climbing vines, mostly 1–4 m long. Stems cylindrical, smooth, with short internodes. Branching monopodial, short, bearing several distichous leaves with simple blades; venation pinnate-ascending; petioles long, sheathed for most of their length. Spadix ellipsoid to fusiform, subtended by 3–5 caducous spathes on upper half of peduncle; staminate flowers nearly actinomorphic, the perianth 20–30, glanduliferous; pistillate flowers and berries entirely connate, the staminodes 4, very long, white.

Ludovia integrifolia, photo by B. Hammel.

Distinctive features: Root-climbing vines with simple, long, distichous leaves with long petioles, venation pinnate-ascending.

Distribution: A New World genus of three species, two of which sometimes grow as vines; distributed from Nicaragua south to Peru and the Amazon Basin; in wet or moist, lowland forests.

THORACOCARPUS Harling, Acta Horti Berg. 18(1): 254. 1958.

Root-climbing vines or epiphytic vines, stems slender 15–30 m long. Stems cylindrical, smooth, commonly with short internodes. Branching monopodial, short, bearing several spiral, deeply bifid leaves; petioles long, adaxially flattened. Spadix cylindrical to ellipsoid, subtended by 8–11 spathes that diminish in size basipetally; staminate flowers actinomorphic, the perianth with 10–15 lobes, glanduliferous; pistillate flowers and fruits basally connate; ovary with 4 parietal placentae. Berries partly connate on the spadix.

Distinctive features: Root-climbing vine with long, slender stems and deeply bifid leaves; spadix subtended by 8–11 spathes.

Distribution: A neotropical genus with a single species (*T. bissectus* (Vell.) Harling); distributed from Costa Rica south to Bolivia and SE Brazil; in wet or moist, lowland forests.

Figure 24. *Thoracocarpus bissectus.* **A**. Root-climbing liana > 15 m long, with short sympodial branches. **B**. High climbing liana with sympodial branches. **C.** Branch with juvenile leaves and adventitious roots. **D**. Stem cross section with atactostele. Photos by P. Acevedo.