

CACTACEAE

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Primarily a neotropical family (except for a few species of *Rhipsalis* in Africa and Sri Lanka) with ~140 genera and 1,860 species of succulent herbs, shrubs, trees, terrestrial, epiphytic, erect, prostrate, hanging, or root-climbing vines. The family contains 3 genera and 13 species of vines that attain 2 or more m in length. For the most part, they are found in dry forests, arid areas or deserts from low to high elevations.

Diagnosics: Succulent, root-climbing or scrambling vines, with green photosynthetic stems, bearing fascicles of spines.

General Characters

1. STEMS. Succulent or woody, asymmetrical and lobed, green and photosynthetic (in *Selenicereus* and *Weberocereus*; Figures 68D, 69B), or cylindrical and woody (in *Pereskia*, Figure 68C); with clusters of spines. Cross sections with scanty xylem (in *Selenicereus* and *Weberocereus*, Figure 68B) or regular in *Pereskia* dissected by numerous narrow rays, and thick phloem region (Figure 68A).
2. EXUDATES. Scanty and watery.
3. CLIMBING MECHANISMS. *Selenicereus* and *Weberocereus* are root-climbers (Figure 68D), while *Pereskia* grows as a scrambling vine with twining branches in late stages (Figure 69A).
4. LEAVES. Alternate, spiral, succulent in *Pereskia* (Figure 69A) or wanting in other genera.
5. INFLORESCENCE. Flowers are solitary at the areoles in *Selenicereus* and *Weberocereus*, and racemes in *Pereskia aculeata* Mill.

6. FLOWERS. Bisexual, actinomorphic, usually very large and fleshy; tepals numerous, united at the base to form a perianth tube; stamens numerous, the filaments adnate at the base to the perianth tube, the anthers opening by longitudinal slits; ovary inferior, forming a hypanthium, carpels numerous, united, with numerous ovules with parietal placentation, the style solitary, stigma as many as the number of carpels.
7. FRUIT. A berry with numerous seeds.

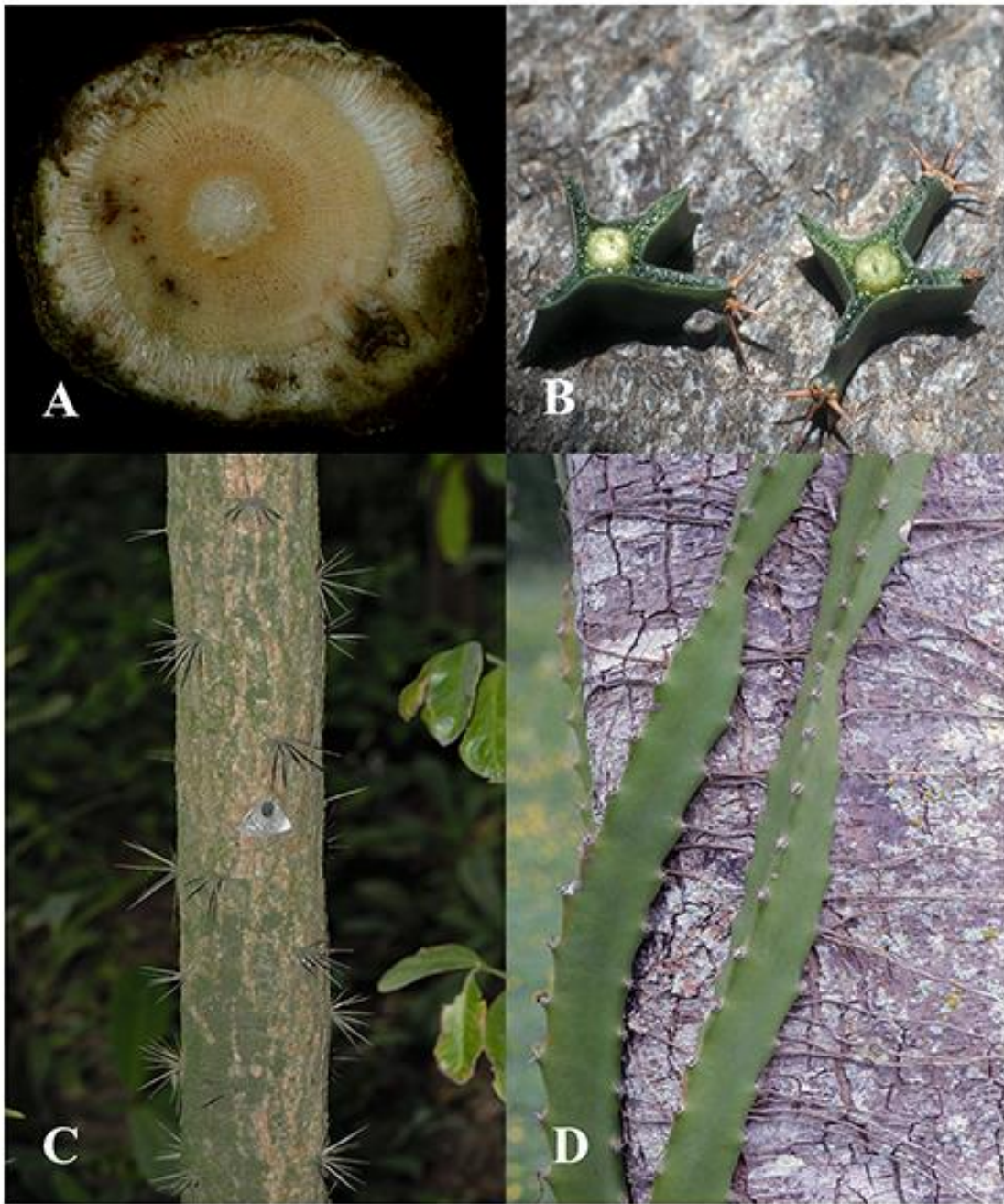


Figure 68. **A.** Stem cross section of *Pereskia aculeata*. **B.** Stem cross sections of *Selenicereus triangularis*. **C.** Main erect stem in *Pereskia aculeata*, with fascicles of spines. **D.** Root-climbing stems in *Selenicereus triangularis*. Photos by P. Acevedo.



Figure 69. A. Habit in *Pereskia aculeata*, with short lateral branch. B. Scrambling habit of *Selenicereus triangularis*. Photos by P. Acevedo.

USES

Some species of *Selenicereus* (e.g., *S. triangularis* & *S. undatus* (Haw.) D.R. Hunt.) are commercially cultivated for their edible fruits, known as *pitahaya* or *dragon-fruit*; a few other species of *Selenicereus* are cultivated as garden plants due to their beautiful, fragrant flowers. The leaves of *Pereskia aculeata*, locally known in southern Brazil as *ora-pro-nóbis*, are part of the local cuisine, where they are prepared in cooked dishes with poultry, beef and other vegetables.

Key to the genera of climbing Cactaceae

1. Stems dark brown, cylindrical, without ribs; leaves present; plants scramblers or twiners;
flowers in terminal inflorescences *Pereskia*
1. Stems green, angular, compressed, or cylindrical, but then with longitudinal ribs; leaves
absent; plants climbing through the aid of adventitious roots; flowers solitary 2
2. Areoles of perianth tube with scales or downy felt; flowers nocturnal *Selenicereus*
2. Areoles of perianth tube with tufts of black spines; flowers diurnal *Weberocereus*

PERESKIA Miller, Gard. Dict. Abr. ed. 4. 1754.

Shrubs, trees or scrambling, sometimes twining lianas. Stems cylindrical, without ribs,



Pereskia aculeata, photo by P. Acevedo.

with axial areoles surrounded by spines; glochids absent. Leaves alternate, persistent, succulent, petiolate, often with a pair of short, recurved spines at the base; blades simple.

Flowers actinomorphic,

unisexual, solitary or in racemes, panicles, or cymes; receptacle with areoles and bracteoles in 2 series; perianth of sepaloid and petaloid tepals; stamens numerous, the filaments usually unequal, shorter than the perianth; ovary inferior or half-inferior, the style thick, the stigmas numerous, digitiform, papillose. Fruit a berry with persistent bracts and areoles; seeds few, small.

Distinctive features: Scrambler or twining vine, with alternate, fleshy leaves

Distribution: A South American genus of ~ 17 species, of these, only two are known to be lianas, one of which (*P. aculeata* Mill.) grows as an erect shrub in early stages, later producing long climbing stems; this species has been introduced throughout the Neotropics; dry to moist forests at low elevations.

SELENICEREUS (A. Berger) Britton & Rose, Contr. U.S. Natl. Herb. 12: 429. 1909.

Hylocereus (A. Berger) Britton & Rose (1909).

Lianas, climbing by adventitious roots, unbranched or with numerous lateral branches.



Selenicereus triangularis, photo by P. Acevedo.

Stems green, angular with 3 or 4 prominent longitudinal ribs or cylindrical with 4–12 shallow angles or ribs. Leaves absent; areoles surrounded by conical spines along the margin of the ribs or forming a small promontory that is densely covered with lanate

hairs and acicular spines. Flowers bisexual, actinomorphic, solitary, nocturnal, sessile, usually at the ends of the branches; perianth elongate, infundibuliform; outer tepals scale-like, glabrous or the areoles densely covered with long, lanate hairs; inner tepals petaliferous; stamens numerous, the filaments shorter than the perianth, inserted on the perianth; ovary inferior, forming an elongate, infundibuliform hypanthium, the style elongate, not exerted, the stigmas numerous, filiform. Fruit a large berry with persistent tepals or covered by basal bracts and several spines; seeds numerous, minute.

Distinctive features: Root-climbing cacti, attaining 5–7 m long and forming large entanglements; flowers nocturnal, inner perianth white.

Distribution: A neotropical genus of ~26 species; dry forest and scrubs at low elevations.

WEBEROCEREUS Britton & Rose, Contr. U.S. Natl. Herb. 12: 431. 1909.

Lianas, climbing by adventitious roots, with numerous basal branches. Stems green,



Weberocereus tonduzii, photo from World of Succulents.

triangular. Leaves absent; areoles small, felted, without spines, but sometimes with weak bristles along the margin of the ribs.

Flowers bisexual, actinomorphic, solitary, diurnal, sessile, usually at the ends of the branches; perianth ~8 cm long, shortly

infundibuliform; areoles of perianth tube and ovary bearing clusters of dark spines and short, black wool; outer tepals brownish, 1–2 cm long, oblong; inner tepals oblong, creamy white, 2.5 cm long; stamens numerous, exerted; style longer than the stamens. Berry globose, yellow, umbilicate at the apex, with a white pulp.

Distinctive features: Root-climbing vines, with triangular, unarmed stems; flowers large, diurnal, creamy white.

Distribution: A neotropical genus of nine species, distributed from southeastern Mexico to Panama and Peru, with only one species (*W. tonduzii* (Weber) Rowley) of vine that reaches more than 2 m in length; distributed in Costa Rica and Panama; ~1,300 m.