

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

PETIVERIACEAE

By Pedro Acevedo-Rodríguez (Jul 2020)



Trichostigma octandrum, photo by P. Acevedo

For the most part, a neotropical family of herbs, shrubs, lianas or less often trees, consisting of 9 genera and 22 species. Lianas are restricted to the genera *SeQUIERIA* Loefl. and *Trichostigma* A. Rich. with a total of 6 species distributed from Mexico to southern Brazil; commonly found in dry to moist forests at low elevations.

DiagnosTics: Scrambling lianas 10-20 m long; stems cylindrical, leaves alternate, simple, exstipulate.

General Characters

1. STEMS. Cylindrical, woody, reaching 20 to 25 m in length and > 25 cm in diam. at the base; cross sections in *SeQUIERIA* with **successive cambia** that produce concentric rings of xylem and phloem dissected by numerous narrow rays (fig. 1a). *Trichostigma* has **regular**

- vascular anatomy with a relatively large medulla and vascular tissues dissected by numerous narrow rays (fig. 1b); bark smooth to slightly rough, lenticellate (fig. 2b).
2. EXUDATES. No visible exudate, however, many species of *Valeriana* have a strong fetid smell upon drying.
 3. CLIMBING MECHANISMS. Climbing Petiveriaceae are *scramblers* (fig. 2) with numerous, short lateral, hanging branches. In addition, species of *Seguieria* have a pair of recurved thorns produced at the base of lateral branches, that help with clinging on to host plants (fig. 3a).
 4. LEAVES. Alternate or sub-opposite, exstipulate, chartaceous to coriaceous, simple, entire; petioles short, glandless (fig. 3).
 5. INFLORESCENCE. Axillary or distal racemes or panicles.
 6. PEDICELS. Short to long.
 7. FLOWERS. Bisexual, sub-zygomorphic; calyx of 4 or 5 free, petaloid sepals; corolla absent; stamens 8-numerous, the filaments free; ovary superior, unilocular with a single ovule.
 8. FRUIT. A fleshy drupe or a samara with a distal wing.

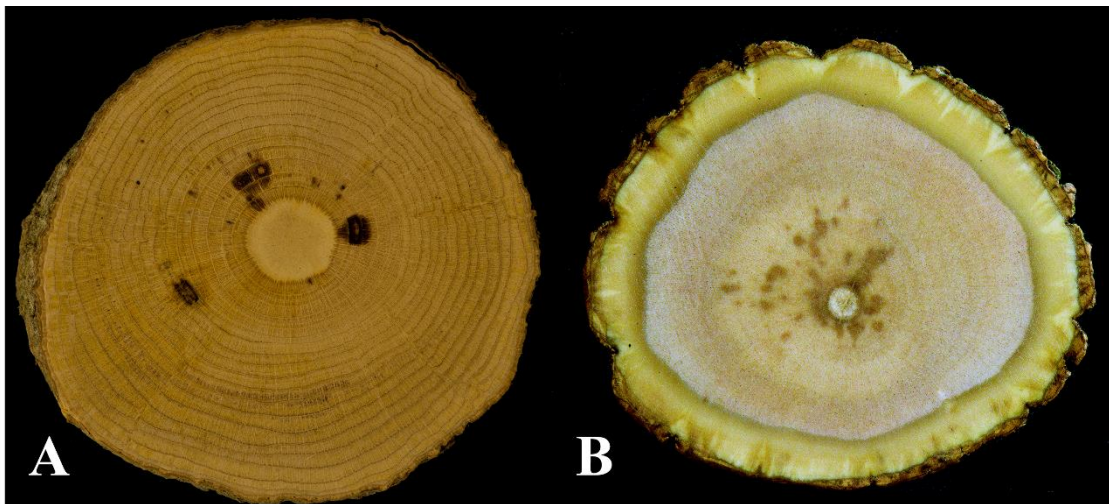


Figure 1. Stem cross sections of Petiveriaceae. **A.** *Seguieria americana* with successive rings of xylem and phloem. **B.** *Trichostigma octandrum*, stem nearly cylindrical with regular anatomy. Photos by P. Acevedo.



Figure 2. Vegetative features in Petiveriaceae. **A.** *Segueria americana*, a scrambling liana > 25 m long. **B.** *Trichostigma octandrum*, a scrambling liana, many-branched from base, bark semi-rough and lenticellate. Photos by P. Acevedo.



Figure 3. Vegetative features in Petiveriaceae. **A.** *Segueria americana*, showing a short lateral branch with two recurved thorns at the base. **B.** *Trichostigma octandrum*, hanging fruiting branch. Photos by P. Acevedo.

KEY TO THE GENERA

1. Stem cross section with concentric successive ring of xylem and phloem; plant armed with axillary pairs of thorns; fruit a samara*Seguiera*
1. Stem cross section of a single vascular cylinder; plant unarmed; fruit a fleshy drupe*Trichostigma*

GENERIC DESCRIPTIONS

SEGUIERIA Loefling, Iter Hispan. 191. 1758.



S. americana, photo by P. Acevedo

Clambering shrubs or lianas, reaching > 25 m in length and 25 cm in diam.; cross section with *successive cambia* that produce concentric rings of xylem and phloem dissected by numerous narrow rays. Leaves alternate, simple, pinnately veined; petioles short; stipules absent but often with a pair or small recurved thorns at the base of the petiole that seem like stipules, but are modified prophylls that commonly are at the base of short axillary branches. Inflorescences of axillary panicles or racemes on short lateral branches; bracts minute, persistent. Flowers bisexual, actinomorphic or sub-zygomorphic, long-peduncled; calyx of 4 or 5 free sepals; petals absent; stamens numerous, the anthers lanceolate, dehiscent longitudinally; ovary superior, unilocular, with a single basal ovule, the style

laminar, one side developing into a wing, the stigma punctiform. Fruit a samara with a distal wing.

Distinctive features: Scrambling lianas with simple, alternate, exstipulate leaves. Easy to distinguish by the presence of a pair of axillary, recurved thorns at the base of short, lateral branches (and sometimes at the base of petiole) and by its samaras with a distal wing.

Distribution: A neotropical genus of 5 species, 3 of which are scrambling lianas; native from Panama to southern Brazil, in moist to seasonal forests of the low lands.

TRICHOSTIGMA Richard in Sagra, Hist. Fis. Pol. Nat. Cuba, Pt. 2, Hist. Nat. 10: 306. 1845.



T. octandrum, photo by P. Acevedo

Clambering shrubs or lianas with scandent or hanging branches, reaching 20 or more m in length and up to 7 cm in diam.; cross section with *regular* vascular anatomy with a relatively large medulla and vascular tissues dissected by numerous narrow rays; bark slightly rough, lenticellate, becoming corky with age. Leaves alternate or subopposite; petioles long; stipules absent. Flowers bisexual, actinomorphic, in axillary racemes; bracts deciduous; bracteoles persistent; calyx of 4 free tepals; petals absent; stamens 8-16, in two whorls, the anthers dehiscent longitudinally; ovary superior, unilocular, with a single ovule, the stigma sessile, penicellate. Fruit a fleshy drupe with a single seed and persistent reflexed sepals at the base.

Distinctive features: Scrambling lianas, with simple stems, alternate, simple exstipulate

leaves, inflorescences with reddish axes and flowers; drupes purplish black. Vegetatively similar and often confused with *Chamissoa altissima* (Amaranthaceae) but distinguished by the stem seen in cross section having regular anatomy (vs. successive cambia in *Chamissoa*).

Distribution: A genus of 3 species, distributed throughout the Neotropics from Mexico south to southern Brazil and throughout the West Indies; found in dry to moist forests.

RELEVANT LITERATURE

Acevedo-Rodríguez, P. 2005. Vines and climbing plants of Puerto Rico and the Virgin Islands.

Contrib. United States National Herbarium 51: 1-483.

Baillon, H. 1873. Histoire des plantes. Vol 4. XXV. Phytolaccacées. Paris.

PICTURE VOUCHERS

Figure 1.

A. *Seguieria americana* L. (Acevedo 16817).

B. *Trichostigma octandrum* (L.) H. Walter (no voucher).

Figure 2.

A. *Seguieria americana* L. (Acevedo 16836).

B. *Trichostigma octandrum* (L.) H. Walter (no voucher).

Figure 3.

A. *Seguieria americana* L. (Acevedo 16836).

B. *Trichostigma octandrum* (L.) H. Walter (no voucher).