

EPHEDRACEAE

Description as for *Ephedra*, the only genus in the family.

1. *Ephedra* L.

Xeromorphic shrubs, usually dioecious; leaves opposite or in whorls of 3-4, scale-like, fused at the base; flowers in small cones; male flowers subtended by a bract, perianth 2-lipped, staminal column with 2-9 anthers; female flowers solitary or in groups of 2-3, subtended by 2-4 pairs of bracts; ovules with scarious or fleshy bracts. 40 species, Mediterranean region to China, South America.

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| 1. Margins of bracts and leaf sheaths glabrous | 2 |
| + Margins of bracts and leaf sheaths ciliate | 3 |
| 2. Stems erect, male flowers with 6-8 anthers | 5. <i>E. pachyclada</i> |
| + Stems climbing or hanging, male flowers with 4-6 anthers | 4. <i>E. foemina</i> |
| 3. Leaves 1-1.5(-3.5) cm | 3. <i>E. ciliata</i> |
| + Leaves to 3(-6) mm | 4 |
| 4. Male flowers with 3-4 sessile anthers; ripe cones fleshy, red | 2. <i>E. aphylla</i> |
| + Male flowers with 4-6 distinctly stipitate anthers; ripe cones with broad scarious margins, not fleshy | 1. <i>E. alata</i> |

1. **Ephedra alata** Decne., Ann. Sci. Nat. Bot., sér. 2, 2: 239 (1834).

Shrub to 1 m; stems richly branching, erect, not climbing; leaves to 3 (-6) mm; margins of leaf sheaths and bracts ciliate; male cones in dense axillary clusters; flowers with 4-6 anthers, distinctly stipitate; female cones 2-seeded, bracts with broad scarious margins at maturity.

O, M, D, S; desert sandy plains. North Africa, Palestine, Sinai, Arabia, Iraq.

2. **Ephedra aphylla** Forssk., Fl. Aegypt.-Arab. 170 (1775).

Syn. *Ephedra alte* C. A. Mey., Monogr. Ephedra, Mém. Acad. Sci. Pétersb. 5: 75 (1846).

Erect or hanging shrub to 1.5 m, leaves to 3 mm, margins of sheaths and bracts ciliate; male cones in dense axillary clusters, male flowers with 3-4 sessile anthers; female cones 1(-2)-seeded; ripe cones fleshy, red.

M, D, S; calcareous slopes and wadi beds. Northeast Africa, Syria to northern Arabia.

3. **Ephedra ciliata** Fischer & C. A. Mey., Monogr. Ephedra, Mém. Acad. Sci. Pétersb. 4: 100 (Mar. 1846).

Syns. *Ephedra foliata* Boiss., Diagn. Pl. Orient. 7: 101 (Jul.-Oct. 1846).

Ephedra peduncularis Boiss. & Hausskn., Fl. Orient. 5: 716 (1884).

Shrub to 3 m, climbing or prostrate; leaves 1-1.5 (-3.5) cm; margins of leaf sheaths and bracts ciliate; male cones at the tips of branches; flowers with 3-4 sessile anthers; female cones 1-3-seeded; ripe cones fleshy, white.

De, GE, S; scrambling on shrubs and trees, rocky slopes. North and East Africa, Sinai, Arabia, eastwards to India.

4. **Ephedra foemina** Forssk., Fl. Aegypt.-Arab. 219 (1775).

Syns. *Ephedra campylopoda* C. A. Mey., Monogr. Ephedra, Mém. Acad. Sci. Pétersb. 4: 107 (1846).

Ephedra fragilis Desf. subsp. *campylopoda* (C. A. Mey.) Asch. & Graebn., Syn. Mitteleur. Fl. 1: 258 (1897).

Shrub to 4 m, stems climbing or hanging; leaves 1-2.5 mm; leaf sheaths and bracts with glabrous margins; male flowers with 4-6 sessile anthers; female cones in axillary clusters, usually on curved stalks; 1-2-seeded; ripe cones fleshy, red.

S; rocky cliffs. East Mediterranean region, Sinai, southern Arabia, Ethiopia.

5. **Ephedra pachyclada** Boiss., Fl. Orient. 5: 713 (1884) subsp. **sinaica** (Riedl) Freitag & Maier-Stolte, Edinb. J. Bot. 49: 92 (1992).

Syn. *Ephedra sinaica* Riedl, Notes Roy. Bot. Gard. Edinb. 38: 291 (1980).

Shrub to 1 m; stems richly branching, erect; leaf sheaths and bracts with glabrous margins; male flowers with 6-8 sessile or short-stipitate anthers; female cones on short stalks or in axillary clusters, 1-seeded; ripe cones fleshy, red.



Plate 3.

EPHEDRACEAE: *Ephedra alata*

2, branch with female cones (upper); branch with male flowers (middle); leafy branch (lower). *Ephedra aphylla* 3, female cone (upper), branch with male flowers (middle); branch with female cones (lower). *Ephedra ciliata* 4, branch with female cones (upper); branch with male flowers (lower). *Ephedra foemina* 5, branch with male flowers (left); branch with female cones (right); female cone (upper). *Ephedra pachyclada* 6, branch with male flowers (right); branch with female cones (left). All drawings to the same scale except enlarged parts (scale given).

S; rocky cliffs and slopes. Sinai, Arabia, extending eastwards to Iran and Pakistan.