

GNETOPSIDA

GNETALES

XXX. EPHEDRACEAE¹

Dioecious; shrubs with opposite or whorled leaves, usually reduced to short, more or less coalescent sheaths; not resiniferous. Inflorescences axillary, on short shoots. Flowers enclosed in 2–4 membranous perianth-segments. Fruit a globose syncarp formed from 1 or 2 seeds, surrounded by 2 pairs of red or yellow, fleshy bracts.

1. *Ephedra* L.²

Twigs green. Male flower with free perianth-segments and a few 2- to 3-celled microsporangia, opening by apical, horizontal slits. Female flowers with connate perianth-segments; ovule orthotropous, with integument prolonged into a slender tube.

Literature: O. Stapf, *Denkschr. Akad. Wiss. Math.-Nat. Kl. (Wien)* 56 (2): 1–112 (1889). F. Widder, *Phyton (Austria)* 1: 71–5 (1948).

- 1 Twigs flexible; fruit 8–9 mm; seed almost completely concealed by bracts 1. *fragilis*
- 1 Twigs rigid; fruit 5–7 mm; upper part of seed emerging from bracts
- 2 Leaves green on back; male inflorescence ovoid-oblong, with 4–8 pairs of flowers; female inflorescence 2-flowered 2. *distachya*
- 2 Leaves almost completely membranous; male inflorescence globose, with 2–4 pairs of flowers; female inflorescence 1-flowered 3. *major*

1. *E. fragilis* Desf., *Fl. Atl.* 2: 372 (1799) (*E. altissima* sensu Willk.). Scrambling up to 5 m, or procumbent. Leaves up to 2 mm, with green back. Male inflorescence subsessile, ovoid, with 4–8 pairs of flowers; bracts firm, suborbicular. Female inflorescence 1- to 2-flowered, with 2–3 pairs of bracts. Tube of integument 3 mm. Fruit 8–9 mm, red. *Mediterranean region*; *S. Portugal*. Al Bl Bu Cr Gr Hs It Ju Lu Si Tu.

(a) Subsp. *fragilis*: More or less erect; twigs very readily disarticulating at the nodes; pith yellow to brown. Inflorescence very slender. *W. Mediterranean region*; *S. Portugal*.

¹ Edit. V. H. Heywood.

² By F. Markgraf.

(b) Subsp. *campylopoda* (C. A. Meyer) Ascherson & Graebner, *Syn. Mitteleur. Fl.* 1: 258 (1897): Climbing and pendent; twigs less fragile; pith white. Inflorescence broad. *E. Mediterranean region*.

2. *E. distachya* L., *Sp. Pl.* 1040 (1753) (*E. vulgaris* L. C. M. Richard). Low shrub up to 0.5 m, with subterranean rhizome. Leaves up to 2 mm, green on back; old leaf-sheaths whitish-grey. Male inflorescence sessile or stalked, ovoid-oblong, with 4–8 pairs of flowers. Female inflorescence 2-flowered, generally with 3 pairs of bracts. Tube of integument 1.5 mm. Fruit 6–7 mm, red. *S. Europe, extending northwards to N.W. France, S. Slovakia, C. Ukraine and c. 55° N. in E. Russia*. Al Bu Co Cz Ga Gr He Hs Hu It Ju Rm Rs (C, W, E) Sa Si.

(a) Subsp. *distachya*: Twigs ascending, pale green or glaucous. Female inflorescence stipitate. Tube of integument straight. $2n=24, 28$. *Sandy shores and stream-banks. Almost throughout the range of the species.*

(b) Subsp. *helvetica* (C. A. Meyer) Ascherson & Graebner, *Syn. Mitteleur. Fl.* 1: 260 (1897): Twigs erect, deep green. Female inflorescence subsessile. Tube of integument twisted. *Rocks*. ● *S.W. Alps*.

3. *E. major* Host, *Fl. Austr.* 2: 671 (1832) (*E. nebrodensis* Tineo ex Guss., *E. scoparia* Lange). Shrub up to 2 m. Leaves up to 3 mm, completely membranous; old leaf-sheaths dark brown. Male inflorescence sessile, globose, with 2–4 pairs of flowers. Female inflorescence shortly stipitate, 1-flowered, generally with 2 pairs of bracts. Tube of integument 3 mm. Fruit 5–7 mm, red or yellow. *Mediterranean region*. Ga Gr Hs It Ju Sa Si.

(a) Subsp. *major*: Twigs rough. Female inflorescence broad. Seed ovoid. $2n=14$. *W. & C. Mediterranean region*.

(b) Subsp. *procera* (Fischer & C. A. Meyer) Markgraf, *Feddes Rept.* 70: 1 (1964) (*E. procera* Fischer & C. A. Meyer): Twigs smooth. Female inflorescence long and slender. Seed ovoid-oblong. ● *Mountains of S. Greece*.