

## EUCOMMIACEAE

杜仲科 du zhong ke

Zhang Zhiyun (张志耘)<sup>1</sup>, Zhang Hongda (张宏达 Chang Hung-ta)<sup>2</sup>; Nicholas J. Turland<sup>3</sup>

Trees deciduous, dioecious. Sapwood and bark containing latex. Buds ovoid; scales deciduous. Leaves alternate, spirally arranged, exstipulate, petiolate; leaf blade simple, usually elliptic, sometimes somewhat ovate, obovate, or oblong, containing latex (forming strands if blade is transversely broken and pulled apart), pinnately veined, base rounded or cuneate-rounded, margin densely serrate with gland-tipped teeth, apex abruptly narrowed into an acuminate tip. Flowers axillary, borne near base of current year's branchlets, very shortly pedicellate, without perianth, wind pollinated. Male flowers clustered; stamens 5–12, linear; filaments very short; anthers basifixed, 4-locular, dehiscing by longitudinal slits; connective slightly prolonged. Female flowers solitary: ovary stipitate, composed of 2 connate carpels, 1-locular, elongate, compressed, glabrous, apex 2-lobed; stigmas 2, decurrent, reflexed-spreading; ovules 2, collateral, anatropous, 1 aborting. Fruit an indehiscent samara, long elliptic to narrowly oblong, compressed, winged around margin; wing gradually narrowed at base into stipe, shortly 2-lobed at apex with sinus stigmatic; pericarp thinly leathery. Seed 1, linear, compressed, rounded at both ends; testa membranous; endosperm copious; embryo erect, large; cotyledons compressed, fleshy.

- One species.

The taxonomic position of Eucommiaceae is controversial. It has been variously associated with Hamamelidales, Magnoliales, and Urticales, or placed in its own order, Eucommiales. Recent research suggests that it may belong to Garryales together with Garryaceae (including Aucubaceae) and, perhaps, Icacinaceae.

Chang Hung-ta. 1979. Eucommiaceae. *In*: Chang Hung-ta, ed., Fl. Reipubl. Popularis Sin. 35(2): 116–118.

### 1. EUCOMMIA Oliver, Hooker's Icon. Pl. 20: t. 1950. 1891.

杜仲属 du zhong shu

Morphological characters and geographical distribution are the same as those of the family.

1. *Eucommia ulmoides* Oliver, Hooker's Icon. Pl. 20: t. 1950. 1891.

杜仲 du zhong

Trees to 20 m tall. Trunk to 50 cm d.b.h.; bark gray-brown, scabrous. Young branches yellow-brown pubescent at first, soon glabrate, old ones conspicuously lenticellate. Buds shiny red-brown; scales 6–8, margin puberulous. Petiole 1–2.5 cm, sparsely villous; leaf blade pale green adaxially when old, 5–15 × 2.5–7 cm, brown pubescent at first, later pubescent only along veins, lateral veins 6–9-paired, together with reticulate veins slightly prominent abaxially, concave adaxially. Male flowers: stamens ca. 1 cm, glabrous, filaments ca. 1 mm. Female flower: ovary ca. 1 cm, glabrous. Samara 2.5–3.5 × 1–1.3 cm; stipe 2–5 mm, articulate at 1–3 mm pedicel. Seed 1.3–1.5 cm × ca. 3 mm. Fl. Mar–May, fr. Jun–Nov.

- Mixed forests, sparse forests, thickets, lower mountains, ridges, valleys, dry ravines, fields, also widely cultivated and locally becoming naturalized; 100–2000 m. Gansu, Guizhou, Henan, Hubei, Hunan, Shaanxi, Sichuan, Yunnan, Zhejiang; cultivated in Anhui and Beijing.

*Eucommia ulmoides* is now a rare species in the wild in China, although it is much cultivated. The timber is used for furniture and fuel; the bark, which contains aucubin, is used medicinally as an invigorator, a tonic for arthritis, and for reducing blood pressure; and the solidified latex is used for lining pipes, insulating electric cables, and for filling teeth.

<sup>1</sup> Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, People's Republic of China.

<sup>2</sup> Life Sciences College, Zhongshan (Sunyatsen) University, Guangzhou 510275, People's Republic of China.

<sup>3</sup> Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.

