

1. MALVA Linnaeus, Sp. Pl. 2: 687. 1753.

锦葵属 jin kui shu

Herbs annual or perennial, ascending or erect. Leaves alternate; stipule sessile, usually ciliate, persistent; leaf blade palmately lobed or sometimes deeply dissected. Flowers solitary or fascicled, axillary. Involucellar bracts usually 3, linear or foliaceous, usually free. Calyx cup-shaped, 5-lobed, often accrescent and spreading in fruit. Petals 5, usually purple, sometimes white, rose to dark red, apex usually emarginate or with a prominent notch. Anthers borne on staminal column apex. Ovary with 9–15 pistils; ovule 1 per locule, erect; style branches as many as pistils, adaxial surface stigmatic. Fruit a schizocarp, oblate, pubescent or glabrous; mericarps 9–15, indehiscent, mature carpels without spines. Seeds 1 per mericarp.

About 30 species: N Africa, Asia, Europe; three species (one introduced) in China.

Molecular data (Ray, Pl. Syst. Evol. 198: 29–53. 1995) indicate that a number of species, especially American and Australian, traditionally thought to belong to *Lavatera* are better considered species of *Malva*. Previously, the two genera were separated on the basis of the fusion or non-fusion of the epicalyx lobes, but this is an arbitrary division and, given current molecular evidence, untenable. The two genera are better separated on mericarp details.

Members of this genus are used as ornamental and medicinal plants; the young leaves are used as vegetables. Many species grow in disturbed situations.

Malva dendromorpha M. F. Ray (*Lavatera arborea* Linnaeus) is known in China only from botanical gardens.

- 1a. Mericarps 7; epicalyx lobes leaflike, ca. 10 × 14 mm *M. dendromorpha* (see note above)
- 1b. Mericarps 9–15; epicalyx lobes not leaflike, 3–6 × 1–2 mm.
 - 2a. Corolla 3–5 cm in diam., purplish red or white; epicalyx lobes oblong, apex rounded; mericarp abaxially puberulent, reticulate 1. *M. cathayensis*
 - 2b. Corolla 0.5–1.5 cm in diam., white to pinkish red; epicalyx lobes linear-lanceolate, apex pointed; mericarp abaxially glabrous, margin striate.
 - 3a. Plant small, procumbent, 20–50 cm tall; basal leaf 2–5 cm in diam.; pedicel 2–5 cm; petals ca. 2 × as long as sepals, claw bearded 2. *M. pusilla*
 - 3b. Plants large, erect, to 1 m tall; basal leaf 6–10 cm in diam.; pedicel 0.3–1.2 cm at anthesis; petals slightly longer than sepals, claw not bearded 3. *M. verticillata*

1. *Malva cathayensis* M. G. Gilbert, Y. Tang & Dorr, **nom. nov.**

锦葵 jin kui

Replaced synonym: *Malva sinensis* Cavanilles, Diss. 2: 77. 1786, not *Malva chinensis* Miller, Gard. Dict., ed. 8, *Malva* no. 6. 1768; *M. mauritiana* Linnaeus var. *sinensis* Candolle.

Herbs biennial or perennial, erect, many branched, 50–90 cm tall, strigose. Leaves alternate; stipule ovate-oblique, margin serrate, apex acuminate; petiole 4–8 cm, subglabrous, strigose adaxially; leaf blade cordate or reniform, 5–12 × 5–7 cm, papery, glabrous or sparsely strigose on veins, base subcordate to rounded, margin crenate, 5–7-lobed, lobes orbicular. Flowers 3–11-fascicled, axillary. Pedicel 1–2 cm, glabrous or strigose. Epicalyx lobes 3, oblong, 3–4 × 1–2 mm, apex rounded, pilose. Calyx cup-shaped, 6–7 mm, 5-lobed, broadly triangular, stellate pilose on both surfaces. Corolla purplish red or white, 3–5 cm in diam.; petals 5, spatulate, ca. 2 cm, apex slightly emarginate; claw barbed. Staminal column 8–10 mm, scabrous. Filaments glabrous. Style branches 9–11, minutely puberulent. Capsule flat globose, 5–7 mm in diam.; mericarps 9–11, reniform, pilose, abaxially puberulent, reticulate. Seeds dark brown, reniform, ca. 2 mm. Fl. May–Oct.

Mostly cultivated. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xinjiang, Xizang, Yun-

nan, Zhejiang [native to India].

Malva cathayensis is very similar to the European *M. sylvestris* but has pilose instead of glabrous fruit. The ICBN requires the epithets “*chinensis*” and “*sinensis*” to be treated as homonyms (*Vienna Code*, Art. 53 Voted Ex. 9), hence a new epithet is needed for this species.

This species is cultivated as an ornamental; plants with white flowers are used medicinally.

2. *Malva pusilla* Smith in Smith & Sowerby, Engl. Bot. 4: t. 241. 1795.

圆叶锦葵 yuan ye jin kui

Malva lignescens Iljin; *M. rotundifolia* Linnaeus, nom. utique rej.

Herbs perennial, usually procumbent, many branched, 20–50 cm tall, scabrous. Stipule small, ovate-lanceolate, 4–6 × 2–3 mm; petiole 3–12 cm, stellate velutinous; leaf blade reniform, rarely 5–7-lobed, 1–3 × 1–4 cm, papery, abaxially sparsely stellate puberulent, adaxially sparsely velutinous, base cordate, margin minutely denticulate, apex rounded. Flowers usually 3–4-fascicled, axillary, rarely solitary on stem. Pedicel 2–5 cm, sparsely stellate puberulent. Epicalyx lobes lanceolate, 2–5 × 1–1.5 mm, stellate puberulent. Calyx campanulate, 5–6 mm, stellate puberulent, 5-lobed, lobes triangularly acuminate. Corolla white to pinkish, 10–12 mm in diam.; petals obovate, 9–15 × 3–5 mm, apex notched; claw bearded. Filament tube stellate puberulent. Style branches 13–15. Fruit flat globose, 5–6 mm in

diam.; mericarps 12–15, abaxially smooth, angles rounded, puberulent. Seeds reniform, ca. 1 mm in diam., reticulate or not. Fl. summer.

Grassy slopes, open areas. Anhui, Gansu, Guizhou, Hebei, Henan, Jiangsu, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Kazakhstan, Kyrgyzstan, Mongolia, Turkmenistan, Uzbekistan; Asia, Europe].

3. *Malva verticillata* Linnaeus, Sp. Pl. 2: 689. 1753.

野葵 ye kui

Herbs biennial, 50–100(–120) cm tall; stem sparsely stellate velutinous. Stipules ovate-lanceolate, 3–5 × 2–4 mm, stellate puberulent; petiole 2–8(–15) cm, puberulent in adaxial groove, glabrescent; leaf blade reniform or round, (3–)5–11 × (2–)5–11 cm, both surfaces very sparsely strigose or subglabrous, 5–7-lobed, lobes rounded or acute, margin crenate-serrate. Flowers 3- to many-fascicled, axillary. Pedicels 2–15(–40) mm. Epicalyx lobes filiform-lanceolate, (3–)5–6 mm, ciliate. Calyx cup-shaped, 5–8 mm, lobes broadly triangular, sparsely stellate strigose. Corolla whitish to reddish, slightly longer than sepals; petals 6–8 mm, apex retuse; claw glabrous or sparsely hairy. Filament tube 3–4 mm, glabrous or with a few simple hairs. Style branches 10–11. Schizocarp flat-globose, 5–7 mm in diam.; mericarps 10–12, abaxially smooth, ca. 1 mm thick, angles rounded and rugose, sides reticulate. Seeds purple-brown, reniform, ca. 1.5 mm in diam., glabrous. Fl. Mar–Nov.

Hills, plains, also cultivated and becoming weedy. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan, Zhejiang [Bhutan, India, Korea, Mongolia, Myanmar, Pakistan; E Africa (Ethiopia), Europe; invasive weed in North America].

This species is similar to *Malva parviflora* but differs in having a glabrous staminal column and obviously reticulate mericarps.

- 1a. Leaves on distal part of stem with lobes rounded; flowers in looser fascicles; pedicels unequal, the long ones not obscured by flowers or fruits 3c. var. *rafiqii*
- 1b. Leaves on distal part of stem with lobes triangular; flowers in compact fascicles; pedicels uniformly short, obscured by flowers or fruit.
 - 2a. Herbs biennial or perennial; leaf margin not undulate; schizocarp 5–7 mm in diam. 3a. var. *verticillata*
 - 2b. Herbs annual; leaf margin strongly undulate; schizocarp ca. 8 mm in diam. 3b. var. *crispa*

3a. *Malva verticillata* var. *verticillata*

野葵(原变种) ye kui (yuan bian zhong)

Malva chinensis Miller (1768), not *Malva sinensis* Cavanilles (1786); *M. mohileviensis* Downar; *M. pulchella* Bernhardt; *M. verticillata* subsp. *chinensis* (Miller) Tzvelev; *M. verticillata* var. *chinensis* (Miller) S. Y. Hu.

Herbs biennial or perennial. Leaf blade margin not wrin-

kled; blades on distal part of stem with lobes triangular. Flowers in compact fascicles. Pedicels uniformly short or absent, concealed by flowers or fruits. Schizocarp 5–7 mm in diam.

Hills, plains. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan, Zhejiang [?Bhutan, India, Korea, Myanmar; Africa (Ethiopia), Europe].

The seeds, roots, and leaves are used medicinally; the young leaves are edible.

3b. *Malva verticillata* var. *crispa* Linnaeus, Sp. Pl. 2: 689. 1753.

冬葵 dong kui

Malva crispa (Linnaeus) Linnaeus.

Herbs annual. Leaf blade margin strongly wrinkled; blades on distal part of stem with lobes bluntly triangular. Flowers solitary or fascicled. Pedicels uniformly short or absent. Schizocarp ca. 8 mm in diam. Fl. Jun–Sep.

Cultivated, often becoming weedy. Gansu, Guizhou, Hunan, Jiangxi, Sichuan, Yunnan [India, Pakistan; Europe; invasive weed in North America].

This taxon is cultivated as an ornamental and as a salad crop.

3c. *Malva verticillata* var. *rafiqii* Abedin, Fl. W. Pakistan 130: 45. 1979.

中华野葵 zhong hua ye kui

Herbs biennial or perennial. Leaf blade margin not wrinkled; blades on distal part of stem with lobes rounded. Flowers in looser fascicles. Pedicels very unequal, longest to 4 cm, easily seen. Schizocarp 5–7 mm in diam.

Anhui, Gansu, Guangdong, Guizhou, Hebei, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Yunnan, Zhejiang [N India, Korea, Pakistan].

This variety was misidentified as *Malva verticillata* var. *chinensis* by S. Y. Hu and subsequent Chinese authors, but the type of var. *chinensis* is typical of *M. verticillata* var. *verticillata*.

