

13. COMMELINA Linnaeus, Sp. Pl. 1: 40. 1753.

鸭跖草属 ya zhi cao shu

Herbs annual or perennial. Rhizomes absent. Stems creeping, ascending, or erect. Leaves alternate. Cincinni subtended by and included in spathe-like involucre bracts; involucre bracts open or proximal margins coherent and becoming funnel-shaped, often forming heads; cincinni dichotomously branched, flowers in 1 branch smaller, infertile, falling early, those in other branch fertile; bracts not falcate curved, usually extremely small or absent. Flowers zygomorphic. Sepals lanceolate or ovate-orbicular, sometimes shallowly boat-shaped, inner 2 often connate at base. Petals free, blue, spatulate or orbicular, inner (anterior) 2 larger and clawed. Fertile stamens 3, on 1 side, 2 inserted opposite sepals, 1 opposite petal; filaments glabrous; staminodes 3; antherodes 4-lobed, butterfly-like. Ovary 2- or 3-loculed, posterior locule with 1 developed or abortive ovule or empty, anterior 2 locules each with 1 or 2 ovules. Capsule oblong, globose, or ellipsoid, 3- or most frequently 2-valved; posterior valve 1-seeded or seedless, often indehiscent; anterior 2 valves each seedless or 1- or 2-seeded. Seeds cylindrical or ellipsoid, reticulate or subsmooth; hilum linear.

About 170 species: mainly in tropical and subtropical regions; eight species in China.

- 1a. Proximal margin of involucre bracts open or folded but not basally connate, base cordate or rounded.
 - 2a. Capsule 3-valved; spathe-like involucre bracts lanceolate, base cordate or rounded 1. *C. diffusa*
 - 2b. Capsule 2-valved; spathe-like involucre bracts cordate.
 - 3a. Leaf blade 8–13 × 3–5 cm; valves 1-seeded; spathe obtuse at apex 3. *C. suffruticosa*
 - 3b. Leaf blade 3–9 × 1.5–2 cm; valves 2-seeded; spathe acute at apex 2. *C. communis*
- 1b. Proximal margin of involucre bracts connate, becoming funnel-shaped.
 - 4a. Capsule 3-valved; seeds 2 per valve; leaves obviously petiolate, leaf blade ovate to broadly ovate, less than 7 cm 4. *C. benghalensis*
 - 4b. Capsule 2- or 3-valved; seeds 1 per valve; leaves sessile (or petiolate and involucre bracts very small), leaf blade lanceolate to ovate-lanceolate, to 15 cm.
 - 5a. Spathe-like involucre bracts ca. 1 cm; plants often glabrous; leaves 2–4(–6) cm 8. *C. auriculata*
 - 5b. Spathe-like involucre bracts ca. 2 cm or more; plants hairy, less often glabrous; leaves more than 6 cm.
 - 6a. Plants robust, to 1 m tall; leaves 7–20 × 2–7 cm, leaf sheath mouth densely brown hirsute-ciliate; spathe-like involucre bracts 4–10 5. *C. paludosa*
 - 6b. Plants slender, short; leaves less than 12 × 2.5 cm, leaf sheath mouth glabrous or sparsely whitish hispid-ciliate; spathe-like involucre bracts 1 to several.
 - 7a. Plants usually creeping and branched; leaf blade ovate-lanceolate; spathe-like involucre bracts 2 or 3, ca. 2 cm, apex acute; capsule 3-valved 6. *C. maculata*
 - 7b. Plants erect or ascending, less often creeping and branched; leaf blade lanceolate, apex acuminate; spathe-like involucre bracts 1 to several, ca. 2.5 cm, apex shortly falcate-acuminate; capsule 2-valved, posterior valve falling with enclosed seed 7. *C. undulata*

1. *Commelina diffusa* N. L. Burman, Fl. Indica, 18. 1768.

节节草 jie jie cao

Herbs annual. Stems creeping, branched (sometimes at every node), to more than 1 m, glabrous or hispidulous throughout or in a line. Leaves subsessile; leaf sheath hispid or hispid-ciliate, with red lines; leaf blade lanceolate or proximal ones oblong, 3–12 × 0.8–3 cm, glabrous or hispid. Involucre bracts borne opposite leaves, folded, ovate-lanceolate, 1–4 cm, glabrous or hispidulous abaxially, base cordate or rounded, apex acuminate or shortly so. Cincinni dichotomously branched from base; 1 branch with 1.5–2 cm long peduncle and 1–4 long-exserted male flowers; other branch with much shorter peduncle and 3–5 bisexual flowers included in involucre bracts; pedicels thick and curved, ca. 3 mm, to 5 mm in fruit. Sepals 3–4 mm, membranous. Petals blue, 2 longer ones 4.2–6 mm. Capsule oblong, trigonous, ca. 5 mm, 3-valved; posterior valve with 1 seed, indehiscent; other 2 valves each with 2 seeds, dehiscent. Seeds black, ovoid-globose, ca. 2 mm, reticulate. Fl. May–Nov.

Forests, thickets, streamsides, humid open places; near sea level to 2100 m. Guangdong, SW Guangxi (Longzhou Xian, Pingxiang Shi), SW Guizhou (Anlong Xian, Wangmo Xian), Hainan, SE Xizang (Mé-

dog Xian), SE Yunnan [tropics and subtropics worldwide].

A medicinal herb with febrifugal and diuretic effects. The petal juice can be used as a dye for painting.

2. *Commelina communis* Linnaeus, Sp. Pl. 1: 40. 1753.

鸭跖草 ya zhi cao

Commelina coreana H. Léveillé & Vaniot.

Herbs annual. Stems creeping, diffuse, numerous branched, to more than 1 m, glabrous proximally, puberulent distally. Leaf sheaths glabrous; leaf blade lanceolate to ovate-lanceolate, 3–9 × 1.5–2 cm, glabrous. Involucre bracts borne opposite leaves, with 1.5–4 cm long stalk, cordate, folded, 1.2–2.5 cm, often hirsute-ciliate, apex acute. Proximal branch of cincinni with peduncle ca. 8 mm and 1 or 2 male flowers, distal branch with short peduncle and 3 or 4 bisexual flowers, nearly included in involucre bracts; pedicels ca. 3 mm at anthesis, curved and less than 6 mm in fruit. Sepals ca. 5 mm, membranous. Petals dark blue, 9–10 mm except proximal one ca. 5 mm. Capsule ellipsoid, 5–7 mm, 2-valved. Seeds 2 per valve, brown-yellow, semiellipsoid, 2–3 mm, flat on 1 surface, irregularly pitted, truncate at 1 end.

Humid places. Throughout China except for Qinghai, Xinjiang, and Xizang. [Cambodia, Japan, Korea, Laos, ?Malaysia, Russia (Far East), Thailand, Vietnam].

A medicinal herb with febrifugal, anti-inflammatory, and diuretic effects; also used for relieving sore throat and tonsillitis.

3. *Commelina suffruticosa* Blume, Catalogus 35. 1823.

大叶鸭跖草 da ye ya zhi cao

Herbs perennial. Stems erect or ascending, branched only distally, to more than 35 cm, glabrous. Leaf sheaths sparsely hirsute-ciliate and hirsute in a line on 1 side; petiole obvious, to 1 cm; leaf blade lanceolate to ovate-lanceolate, 8–13 × 3–5 cm, glabrous on both surfaces. Involucral bracts borne opposite leaves, broadly cordate, open, ca. 1.6 × 1.1 cm when folded, sparsely puberulent, apex obtuse. Cincinni 4-flowered; peduncle ca. 8 mm; pedicels ca. 3 mm, twisted in fruit. Sepals ca. 4 mm, membranous. Petals white, ca. 4 mm. Capsule subglobose, 3.8–5 mm, 2-valved. Seeds 1 per valve, light brown, ca. 2.8 mm (immature).

On tree bark; ca. 1000 m. S Yunnan (Xishuangbanna Dai Zu Zizhizhou) [Bangladesh, India, Indonesia, Thailand].

Only one Chinese specimen was seen by the present authors.

4. *Commelina benghalensis* Linnaeus, Sp. Pl. 1: 41. 1753, nom. cons.

饭包草 fan bao cao

Commelina cavaleriei H. Léveillé.

Herbs perennial. Stems mostly creeping, ascending distally, diffuse, numerous branched, to 70 cm, sparsely pubescent. Leaf sheaths sparsely hirsute-ciliate; petiole distinct; leaf blade ovate, 3–7 × 1.5–3.5 cm, subglabrous. Involucral bracts borne opposite leaves, often several, aggregated at apex of branches, very shortly stalked, funnellform, 0.8–1.2 cm, sparsely hairy, proximal margins connate, apex acute or obtuse. Proximal branch of cincinni with elongate peduncle and 1–3 exerted, infertile flowers, distal branch longer, with several included, fertile flowers. Sepals ca. 2 mm, membranous. Petals blue, 3–5 mm. Capsule ellipsoid, 4–6 mm, 3-valved; posterior valve 1-seeded or seedless, indehiscent; other 2 valves each 2-seeded, dehiscent. Seeds black, cylindrical or semicylindric, ca. 2 mm, rugose, irregularly reticulate, truncate at 1 end. Fl. summer to autumn.

Wet places; near sea level to 2300 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [tropical and subtropical Africa and Asia].

Cleistogamous flowers are formed in the smaller, funnellform involucral bracts on slender and creeping branches, which possess bladeless leaf sheaths and arise from the base of the plants. Capsules produced by such flowers are at the soil surface or in the soil, but only 1 or 2 valves are developed, each containing 1 or 2 seeds, which are larger than normal.

A medicinal herb with febrifugal, anti-inflammatory, and diuretic effects.

5. *Commelina paludosa* Blume, Enum. Pl. Javae 1: 2. 1827.

大苞鸭跖草 da bao ya zhi cao

Commelina obliqua Buchanan-Hamilton ex D. Don.

Herbs perennial. Stems often erect, simple or sometimes branched distally, to 1 m, glabrous or sparsely hispidulous. Leaves sessile; leaf sheath densely brown hispid at mouth and in a line on 1 side, sometimes either glabrous with only a few hairs at mouth or hirsute throughout; leaf blade lanceolate to ovate-lanceolate, 7–20 × 2–7 cm, glabrous on both surfaces or adaxially granular hairy and abaxially hirsute. Involucral bracts often 4–10, forming terminal heads, sessile, funnellform, ca. 2 × 1.5–2 cm, glabrous, proximal margins connate, apex acute or shortly so. Cincinnus 1; peduncle ca. 1.2 cm; flowers 1 to several, nearly included in involucral bracts; pedicels ca. 7 mm, twisted. Sepals 3–6 mm, membranous. Petals blue, 4.5–8 mm. Capsule ovoid-globose, trigonous, ca. 4 mm, 3-valved. Seeds 1 per valve, dark brown, ellipsoid, ca. 3.5 mm, slightly flattened, finely reticulate. Fl. Aug–Oct, fr. Oct–Apr.

Forests, streamsides in ravines; near sea level to 2800 m. Fujian, Guangdong, Guangxi, SW Guizhou (Ceheng Xian), S Hunan, SW Jiangxi (Longnan Xian), SW Sichuan, Taiwan, SE Xizang (Mêdog Xian), Yunnan [Bhutan, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sikkim, Thailand, Vietnam].

6. *Commelina maculata* Edgeworth, Trans. Linn. Soc. London 20: 89. 1851.

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Commelina obliqua Buchanan-Hamilton ex D. Don var. *viscida* C. B. Clarke; *C. paludosa* Blume var. *viscida* (C. B. Clarke) R. S. Rao & Kammathy.

Herbs perennial. Stems procumbent or creeping, branched, elongate, glabrous or sparsely hispidulous throughout or in a line. Leaf sheaths brown, white, or yellow ciliate at mouth, glabrous elsewhere or hairy in a line on 1 side; leaf blade ovate-lanceolate or lanceolate, 4–10 × 1.5–2.5 cm, villous on both surfaces. Involucral bracts 2 or 3 (or 4), forming heads at apex of branches, sessile or with stalks less than 5 mm, funnellform, 1.5–2 cm, glabrous or sparsely multicellular hispid, proximal margins connate, apex shortly acute. Cincinni with 3 or 4 (or several) flowers slightly exerted only at anthesis and included in fruit; pedicels ca. 3 mm. Sepals ca. 4 mm, membranous. Petals blue, 2 anterior ones to 10 mm, posterior one ca. 4 mm. Capsule globose, trigonous, ca. 4 mm, 3-valved, or 2-valved by abortion of 1 ovule. Seeds 1 per valve, gray-black, ellipsoid, ca. 3 mm, slightly flattened, subsmooth. Fl. Jun–Aug.

Humid forest margins, grasslands, roadsides, ditches; near sea level to 2900 m. SW Guizhou, SW Sichuan, S Xizang, Yunnan [Bhutan, India, Myanmar, Sikkim].

Commelina maculata is very similar to *C. paludosa*, from which it differs in having stems creeping proximally, numerous branched, slender, rooting at nodes; leaves smaller, 4–10 × 1.5–2.5 cm; and involucral bracts fewer and smaller, often only 2 or 3 forming heads.

7. *Commelina undulata* R. Brown, Prodr. 270. 1810.

波缘鸭跖草 bo yuan ya zhi cao

Commelina obliqua Buchanan-Hamilton ex D. Don var. *mathewii* C. B. Clarke; *C. paludosa* Blume var. *mathewii* (C. B.

Clarke) R. S. Rao & Kammathy; *C. kurzii* C. B. Clarke; *C. striata* Edgeworth.

Herbs perennial. Stems erect or ascending, diffuse, numerous branched, to 60 cm, glabrous. Leaves sessile; leaf sheath usually ciliate; leaf blade lanceolate, 6–9 × 1.2–2.8 cm, glabrous or ± hirsute on both surfaces. Involucral bracts 2–4, in fascicles at apex of branches and opposite smaller leaves, sessile, funnellform, 2–2.5 cm, glabrous or ± hirsute, proximal margins partly connate (2–3 mm free), apex retrorsely falcate-acuminate. Proximal branch of cincinni often abortive, sometimes with ca. 2 cm long peduncle but without flowers, distal branch with peduncle to 1 cm and with several flowers; pedicels twisting. Sepals 3.5–4 mm, membranous. Petals pinkish blue, to 1 cm. Capsule subglobose, 3–4 mm, 2- or 3-valved, sometimes only 1 valve containing seed and dehiscent; posterior valve indehiscent. Seeds 1 per valve, brown-black, oblong, ca. 4 mm, flat on 1 surface. Fl. and fr. Jul–Dec.

Humid mountain slopes. Guangdong, S Sichuan (Leibo Xian), Taiwan, E and S Yunnan [India, Indonesia, Philippines; tropical Oceania].

Commelina undulata is common in tropical Oceania, but scattered in Asia. It varies widely, with plants erect or diffuse, glabrous or hairy, and capsule (1 or)2- or 3-valved. The species is characterized by having apically falcate-acuminate involucral bracts only partly connate at the proximal margins, arising opposite the fascicled smaller leaves, and therefore resembling compound heads.

8. *Commelina auriculata* Blume, Enum. Pl. Javae 1: 2. 1827.

耳苞鸭跖草 er bao ya zhi cao

Herbs perennial. Stems erect, to 1.4 m, glabrous except sparsely hairy in a line distally. Leaf sheaths hirsute-ciliate at mouth, ciliate in a line along 1 side, with red lines; petiole short, ca. 3 mm; leaf blade elliptic or lanceolate, 2–4(–6) × 1–2 cm, adaxially sparsely scabrid, abaxially sometimes pubescent, or glabrous on both surfaces. Involucral bracts borne opposite leaves, 1(–3) aggregated at apex of each branch, with ca. 5 mm long stalk, funnellform, ca. 1 cm, glabrous or slightly white hispid, proximal margins connate, apex acute. Cincinnus 1; proximal branch undeveloped; distal branch with 2–5 small, bisexual flowers. Sepals 3–4 mm, membranous. Petals white, 2 longer ones ca. 7 mm, proximal one ca. 3 mm. Capsule globose, trigonous, ca. 4 mm, 3-valved, or 2-valved with posterior valve indehiscent. Seeds 1 per valve, gray-brown, ellipsoid, ca. 3.5 mm, smooth, flat on 1 surface. Fr. Nov.

Hill forests, streamsides in ravines. S Fujian (Zhangpu Xian), Guangdong, Taiwan [Indonesia; W Oceania].

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