

1. PHRYNIUM Willdenow, Sp. Pl. 1: 1, 17. 1797, nom. cons.

叶属 zhong ye shu

Phyllodes Loureiro, nom. rej.

Rhizomes creeping. Basal leaves 1 or more; cauline leaf 1 or absent; leaf sheath and petiole long. Inflorescences borne basally or above an elongate internode on leafy shoots, subtended by a cauline leaf or a reduced, bladeless sheath, compound, capitate, often with additional spikes borne in axils of basal bracts of initially produced spike and later additional ones in basal bracts of secondary spikes, often in a very compact, congested group of few to many small spikes; bracts spirally arranged, often shredding into fibers after anthesis, at least at apex. Flower pairs 2 to many per bract. Sepals usually longer than corolla tube, membranous. Corolla tube proximally ± solid, distally hollow; lobes 3, oblong, subequal. Outer staminodes 2, obovate, staminode tube longer than corolla tube; callose staminode wholly callose, not petaloid at apex. Style curved after tripping; stigma enlarged, blunted. Fruit globose to ellipsoid, dehiscent, often late dehiscent; pericarp hard. Seeds 1–3; aril membranous.

About 20 species: tropical Asia; five species (one endemic) in China.

- 1a. Bracts with a spinescent acumen at apex 1. *P. placentarium*
- 1b. Bracts without a spinescent acumen at apex.
 - 2a. Bracts 3.5–5 cm, apex soon withering; flowers yellowish 2. *P. oliganthum*
 - 2b. Bracts 2–3 cm, apex not withering; flowers white, yellow-orange, or purple.
 - 3a. Bracts wholly shredding into fibers after anthesis; flowers white 3. *P. hainanense*
 - 3b. Bracts apically shredding into fibers after anthesis; flowers not white.
 - 4a. Leaf blade oblong-ovate to oblong, 25–50 × 10–12 cm; inflorescence heads ca. 5 cm in diam. 4. *P. rheedei*
 - 4b. Leaf blade narrowly ovate, 35–45 × 6–8 cm; inflorescence heads ca. 3 cm in diam. 5. *P. tonkinense*

1. *Phrynium placentarium* (Loureiro) Merrill, Philipp. J. Sci. 15: 230. 1919.

尖苞 叶 jian bao zhong ye

Phyllodes placentaria Loureiro, Fl. Cochinch. 1: 13. 1790; *Phrynium parviflorum* Roxburgh; *P. sinicum* Miquel.

Plants 1–2 m tall. Basal leaf 1(or 2); leaf sheath 3–50 cm. Cauline leaf 1; leaf sheath 3–5 cm; petiole 7.5–60 cm, pulvinus 2–7 cm; leaf blade ovate to elliptic, 25–55 × (5.5–)8–20 cm, thinly leathery, glabrous, base rounded with an acute center, apex acuminate. Inflorescence sessile, composed of 4 or 5 or more spikelets, globose, 3–8 cm in diam.; bracts crowded, oblong, 2–2.5 cm, apex with a spinescent acumen. Flowers 2 per bract, white to yellowish white. Sepals linear, ca. 5 mm. Corolla tube ca. 8 mm; lobes elliptic, ca. 5 × 2 mm. Outer staminodes obovate, ca. 5 mm. Ovary glabrous or apically puberulent. Fruit oblong, ca. 1.2 cm; exocarp thin. Seed 1, ellipsoid, ca. 1 cm; aril red. Fl. (Feb–)May–Aug, fr. Aug–Nov.

Wet shaded places in forests, often in valleys along streams; near sea level to 1500 m. Guangdong, Guangxi, Guizhou, Hainan, SE Xizang (Médog Xian), S Yunnan [Bhutan, India, Indonesia, Myanmar, Philippines, Thailand, Vietnam].

2. *Phrynium oliganthum* Merrill, Philipp. J. Sci. 23: 239. 1923.

少花 叶 shao hua zhong ye

Phrynium dispernum Gagnepain.

Plants 1–1.6 m tall. Basal leaves 4 or 5; leaf sheath 30–55 cm. Cauline leaf 1; leaf sheath 5–10 cm; petiole yellow-green, 20–50 cm, pulvinus 3–9 cm; leaf blade elliptic to ovate-elliptic, 25–55 × 10–25 cm, glabrous, base rounded to obtuse and shortly and abruptly attenuate, apex obtuse with an acumen. Inflorescence sessile, composed of 2–6 readily distinguishable spikes, capitate, obovoid, 8–12 × 6–7 cm; bracts olive green, elliptic, 3.5–5 × ca. 3 cm, glabrous or basally pilose, apex spreading,

obtuse, soon withered and turning brown. Flowers yellowish. Sepals lanceolate, ca. 1.5 cm. Corolla tube white, ca. 1.3 cm; lobes strongly reflexed, reddish purple, oblong, ca. 1 cm. Outer staminodes yellow, obovate, ca. 4 mm, unequal, shorter than corolla lobes, wider one emarginate at apex; cucullate and callose staminodes yellow at apex. Fertile stamen ca. 3 mm, with a yellow, petaloid appendage. Ovary ca. 4 mm, light brown sericeous. Fruit ellipsoid to obovoid-ellipsoid, 1.3–1.5 × 0.7–0.9 cm; pericarp brown, shiny, dry and brittle. Seeds 2(or 3), ellipsoid, 7–9 mm. Fl. Apr–Aug.

Moist shady areas in forests; 500–600 m. Fujian, Guangdong, Hainan [Vietnam].

3. *Phrynium hainanense* T. L. Wu & S. J. Chen in T. L. Wu, Fl. Reipubl. Popularis Sin. 16(2): 176. 1981.

海南 叶 hai nan zhong ye

Plants ca. 1 m tall. Basal leaves several; cauline leaf 1; leaf sheath strigose; petiole pulvinus 3–4 cm; leaf blade oblong, 25–45 × 8–14 cm, glabrous, base rounded to subrounded and shortly and abruptly attenuate, apex acuminate to caudate. Inflorescence pedunculate, composed of several clustered spikes, capitate, 7–8 cm in diam.; peduncle 2.5–6 cm; bracts oblong-ovate, 2–3 cm, glabrous, wholly shredding into fibers after anthesis. Flowers white; pedicel ca. 5 mm. Sepals ovate, 1.1–1.3 cm. Corolla tube ca. 7 mm; lobes obovate-oblong, ca. 7 mm. Outer staminodes equaling corolla tube. Ovary ca. 2.5 mm, angled, densely golden yellow villous. Fruit white, trigonous obpyramidal, 0.8–1 × 1–1.2 cm, villous. Seeds 3. Fl and fr. Jul–Oct.

• Valleys; ca. 1600 m. Guangdong, Hainan.

4. *Phrynium rheedei* Suresh & Nicolson, Taxon 35: 355. 1986.

叶 zhong ye

Pontederia ovata Linnaeus, Sp. Pl. 1: 288. 1753; *Phry-*

nium capitatum Willdenow (1797), nom. illeg. (included *Pontederia ovata*); *Phrynium ovatum* (Linnaeus) Druce (1914), not Nees & Martius (1823).

Plants ca. 1 m tall. Rhizomes tuberous. Basal leaves several; cauline leaf 1; petiole to 60 cm, pulvinus 3–7 cm, glabrous; leaf blade ovate-oblong to oblong, 25–50 × 10–12 cm, glabrous, base acute, apex shortly acuminate. Inflorescence sessile, capitate, ca. 5 cm in diam.; bracts purple-red, oblong-lanceolate, 2–3 cm, apex initially acute, shredding into fibers after anthesis. Flower pairs 3 per bract, sessile. Sepals linear, ca. 1 cm, sericeous. Corolla tube violet, shorter than calyx; lobes dark red, oblong-obovate. Outer staminodes light red, obovate, slightly corrugated; cucullate and callose staminodes yellowish, shorter than outer staminodes. Ovary sericeous. Fruit dark red, shiny, pyriform, ca. 1 cm, slightly 3-angled; exocarp hard. Seeds 2 or 3, shallowly grooved. Fl. May–Jul.

Wet shaded places in dense forests; 100–1400 m. Fujian, Guangdong, Guangxi, S Yunnan [India, Vietnam].

5. *Phrynium tonkinense* Gagnepain, Bull. Soc. Bot. France 51. 179. 1904.

云南 叶 yun nan zhong ye

Plants ca. 1 m tall. Basal leaves 1 to several; cauline leaf 1; leaf sheath to 27 cm; petiole 3–25 cm, pulvinus 1–2 cm, puberulent; leaf blade lanceolate, 35–45 × 6–8 cm; adaxially glabrous, abaxially velvety along midvein, base attenuate, apex long acuminate. Inflorescence composed of 4 or 5 crowded spikes, capitate, ca. 3 cm in diam.; bracts dark green, ovate, ca. 1.5 × 1 cm, apex obtuse, densely pilose, soon shredding into fibers. Flowers yellow-orange or purple; pedicel ca. 5 mm, velvety. Sepals linear, ca. 7 mm, membranous, apex hirsute. Corolla lobes reflexed, elliptic, 4–5 mm. Staminodes ca. 3 mm. Ovary hirsute. Fruit brown, trigonous, 0.6–0.7 × ca. 1.2 cm, velvety, both ends compressed. Seeds 3, ca. 5 × 5 mm, 3- or 4-angled, truncate; aril small. Fl. Apr–Aug, fr. Aug–Oct.

Forests. SE Yunnan (Pingbian Miao Zu Zizhixian) [Vietnam].

