

10. GRATIOLA Linnaeus, Sp. Pl. 1: 17. 1753.

水八角属 shui ba jiao shu

Herbs, perennial or annual, erect or prostrate, succulent, glabrous or glandular hairy. Leaves opposite, sessile, margin entire or serrate. Flowers axillary, solitary. Pedicel short or long, filiform. Bracteoles 2, foliaceous, near calyx. Calyx deeply 5-lobed; lobes narrow, subequal, ± imbricate. Corolla 2-lipped to nearly so, lips spreading; lower lip 3-lobed; upper lip entire to 2-lobed. Stamens 2, inserted on upper side of corolla tube, included; anther locules distinct, parallel, transverse or erect; staminodes 2 and included, or absent. Style filamentous; stigma 2-lamellate, included. Capsule ovoid to globose, septifragal, 4-valved; valves separating from placental axis, apex acute. Seeds numerous; seed coat striate and transversely reticulate.

About 25 species: mostly temperate and tropics; three species in China.

1a. Leaf blade apex obtuse; staminodes absent; capsule ovoid, 2.5–3 mm in diam. 2. *G. griffithii*

1b. Leaf blade apex acute to apiculate; staminodes 2; capsule globose, 4–5 mm in diam.

2a. Flowers pedicellate, pedicel 0.7–1.5 cm; corolla 1–1.3 cm 3. *G. officinalis*

2b. Flowers sessile or subsessile; corolla 0.5–0.7 cm 1. *G. japonica*

1. *Gratiola japonica* Miquel, Ann. Mus. Bot. Lugduno-Batavum 2: 117. 1866.

水八角 shui ba jiao

Annuals, glabrous. Rhizomes slender, long. Stems 8–25 cm tall, erect or ascending. Leaves narrowly elliptic to lanceolate, 7–23 × 2–7 mm, base semiamplexicaul, margin entire, apex apiculate; veins 3, inconspicuous. Flowers sessile or subsessile. Bracteoles linear-lanceolate, 4–4.5 mm, herbaceous. Calyx 3–4 mm; lobes linear-lanceolate to oblong-lanceolate, margin membranous. Corolla white or yellowish, 5–7 mm, ± 2-lipped; tube cylindrical, 4–4.5 mm; limb shorter than tube; lower lip lobes obovate, sometimes concave; upper lip apex obtuse to concave. Filaments ca. 0.6 mm; staminodes 2, short, clavate, inserted at base of lower lip. Stigma 2-lobed. Capsule dark brown, globose, 4–5 mm in diam. Seeds slender, long. Fl. and fr. May–Jul.

Fields, beside water; low elevations. Heilongjiang, Jiangsu, Jiangxi, Jilin, Liaoning, Yunnan [Japan, Korea, E Russia].

cm × 2–8 cm, narrower on branches, margin sparsely and minutely serrate, apex acute. Pedicel slender, 0.7–1.5 cm. Bracteoles linear. Calyx lobes subulate, 3–4 mm. Corolla 1–1.3 cm; tube cylindrical, 6.5–9 mm; lower lobes slightly notched; upper lip lobes suborbicular, slightly notched. Filaments 5–5.5 mm; staminodes 2, anterior, filiform. Capsule globose, ca. 5 × 4 mm. Fl. Jun–Oct.

Marshes. N Xinjiang [Asia, Europe].

2. *Gratiola griffithii* J. D. Hooker, Fl. Brit. India 4: 273. 1885.

黄花水八角 huang hua shui ba jiao

Herbs, prostrate. Roots fibrous. Stems succulent, much branched from base. Branches 10–13 cm, stout. Leaves elliptic-oblong, 1.5–2 × 0.5–1.1 cm, abaxially with small black spots, base amplexicaul, apex obtuse; main veins 3. Pedicel ca. 1 mm. Bracteoles ovate. Calyx ca. 3.5 mm; lobes lanceolate, persistent. Corolla yellow to whitish, ca. 6 mm, ± constricted at middle; tube ca. 3 mm; limb ca. 3 mm; upper lip irregularly toothed. Stamens included; filaments ca. 1.5 mm; staminodes absent. Ovary ovoid, ca. 1.5 mm. Style ca. 1.8 mm; stigma enlarged. Capsule 2.5–3 mm in diam., apex apiculate.

Moist places; low elevations. Guangdong [tropics and subtropics].

3. *Gratiola officinalis* Linnaeus, Sp. Pl. 1: 17. 1753.

新疆水八角 xin jiang shui ba jiao

Perennials, erect, ca. 20 cm tall, glabrous throughout. Rhizomes short, horizontal. Stems terete, branched. Leaves sessile, oblanceolate, lanceolate, or linear, 1.5–4

