

2. BIOPHYTUM Candolle, Prodr. 1: 689. 1824.

感应草属 gan ying cao shu

Herbs, annual or perennial. Stem sometimes woody at base, simple or dichotomously branched. Stipules filiform. Leaves crowded or almost whorled apically on stems, even-pinnate; petiole basally swollen; leaflets opposite, sessile; leaflet blade apices rounded and mucronate; apical leaflet blade reduced to an awn. Inflorescences umbellate, pedunculate or sessile. Sepals lanceolate, persistent in fruit, apex acuminate. Petals yellow, white, or rarely purple. Ovary subglobose. Capsule ovoid to oblong, loculicidally dehiscent, sometimes splitting to base into 5 spreading valves, each valve with several seeds. Seeds brown, often with small tubercles.

About 50 species: tropical and subtropical regions of the world; three species in China.

- 1a. Inflorescences sessile 3. *B. umbraculum*
- 1b. Inflorescences long pedunculate.
 - 2a. Stem dichotomously branched, rarely unbranched; leaflet blades with long recurved trichomes on both surfaces, base asymmetric; pedicel 3–10 mm; petals white 1. *B. fruticosum*
 - 2b. Stem unbranched; leaflet blades with short recurved trichomes or glabrous, base almost symmetric; pedicel ca. 2 mm; petals yellow 2. *B. sensitivum*

1. *Biophytum fruticosum* Blume, Bijdr. 242. 1825.

分枝感应草 fen zhi gan ying cao

Biophytum blumei Zuccarini; *B. esquirolii* H. Léveillé; *B. thorelium* Guillaumin var. *sinense* Guillaumin.

Perennials (3–)8–20(–40) cm tall, base woody. Stem usually shortly dichotomously branched, rarely unbranched, basally glabrous, apical parts densely covered with recurved trichomes. Leaf rachis 4–10 cm, densely long strigose; leaflets 6–16 pairs; leaflet blades oblong to obovate-oblong, asymmetric, 4–12 × 3–7 mm, both surfaces with long recurved trichomes, base very oblique. Umbels usually 1–3-flowered or sometimes more; peduncle 3–7 cm, equal to leaf length or longer, slender; bracts several, 1–2 mm, crowded into a cylindrical cluster at apex of peduncle, cluster 5–8 mm. Pedicel 3–10 mm. Sepals 3–5 mm, with simple trichomes. Petals white, longer than sepals. Capsule ellipsoid, 4–5 mm, equal to calyx or longer. Fl. Jun–Dec, fr. Aug–Feb.

Roadsides, rock walls, dense or sparse forests; 300–2300 m. Chongqing, Guangdong, Guangxi, Guizhou, Hainan, Sichuan, Yunnan [Cambodia, E India, Indonesia, Malaysia, Myanmar, New Guinea, Philippines, Thailand, Vietnam].

This species is used medicinally.

2. *Biophytum sensitivum* (Linnaeus) Candolle, Prodr. 1: 690. 1824.

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Oxalis sensitiva Linnaeus, Sp. Pl. 1: 434. 1753; *Biophytum cumingianum* (Turczaninow) Edgeworth; *O. cumingiana* Turczaninow; *O. metziana* Miquel ex Edgeworth & J. D. Hooker.

Annuals 5–25 cm tall, base woody. Stem simple, slender to robust, hispid especially apically. Leaves 3–13 cm; rachis slender, moderately hispid; leaflets 6–14 pairs; leaflet blades oblong to obovate-oblong, 3–15 × 2–7 mm, usually glabrous, occasionally sparsely covered with trichomes, base almost sym-

metric. Umbels several flowered; peduncle 2–7 cm, subequal to leaf length; bracts several, lanceolate, ca. 2 mm, densely crowded at apex of peduncle, cluster ca. 3 mm. Pedicel ca. 1 mm at anthesis but to 3 mm in fruit. Sepals 5–6 mm, with glandular septate trichomes. Petals yellow, longer than sepals. Capsule ellipsoid-obovoid, 4–5 × 3–4 mm, pubescent. Fl. and fr. Jul–Dec.

Roadsides, mountain slopes, forest floors; 100–700 m. SW Guangxi, ?Guizhou, Hainan, Taiwan, Yunnan [India, Indonesia, Malaysia, Nepal, Philippines, Sri Lanka, Thailand, Vietnam; tropical Africa].

This species is used medicinally.

Unvouchered reports of *Biophytum sensitivum* from Guizhou (L. Yang, Fl. Guizhou. 6: 27. 1989) need confirmation.

This species is similar to *Biophytum reinwardtii* (Zuccarini) Klotzsch of Bhutan, India (W Himalaya), Malaysia, Myanmar, Nepal, and Thailand, which differs in the longer pedicels (5–7 mm) and capsules, which are longer than sepals.

3. *Biophytum umbraculum* Welwitsch, Apont. 55: 590. 1859.

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Biophytum apodiscias (Turczaninow) Edgeworth & J. D. Hooker; *B. petersianum* Klotzsch; *B. sessile* (Buchanan-Hamilton ex Baillon) R. Knuth; *Oxalis apodiscias* Turczaninow; *O. gracilentia* Kurz; *O. petersiana* (Klotzsch) C. Müller; *O. sessilis* Buchanan-Hamilton ex Baillon.

Annuals 4–15 cm tall. Stem simple, slender, with dense recurved trichomes especially apically. Leaves 1–3.5 cm, with sparse recurved trichomes; rachis slender; leaflets 4–10 pairs; leaflet blades orbicular-ovate, 2.5–8 × 2.5–5 mm with basal one smallest, base almost symmetric to asymmetric. Umbels sessile, several flowered; bracts lanceolate, as long as pedicels. Pedicel ca. 3 mm. Sepals narrowly lanceolate, ca. 4 mm. Capsule ellipsoid-obovoid, ca. 3 × 2 mm. Fl. and fr. Aug–Nov.

Mountain valleys, forests; 800–1600 m. Yunnan [India, Indonesia, Malaysia, Myanmar, New Guinea, Philippines, Thailand, Vietnam; tropical Africa, Madagascar].

