

#### 4. ARIVELA Rafinesque, Sylva Tellur. 110. 1838.

##### 黄花草属 *huang hua cao shu*

Herbs, annual, glandular pubescent or glabrous. Stipules absent. Leaves alternate, palmately compound; petiole long or short, with pulvinus at basal or distal end; leaflets 3 or 5; petiolule bases connate forming a pulvinar disk; leaflet blades ovate to oblanceolate-elliptic, margin entire or serrulate. Inflorescences terminal or axillary from apical leaves, racemose or sometimes flat-topped or elongated, elongating in fruit; bract present [or absent] at base of pedicels. Sepals 4, equal, distinct. Petals 4, equal, distinct. Stamens 14–25[–35]; filaments inserted on a discoid or conical receptacle (androgynophore). Pistil lacking a gynophore; style short, thick; stigma 1, capitate. Fruit an oblong capsule, partly dehiscent with persistent valves. Seeds 10–40 per capsule, spheroidal, not arillate; cleft fused between 2 ends of seed.

About ten species: Africa, Asia; one species in China.

**1. *Arivela viscosa*** (Linnaeus) Rafinesque, Sylva Tellur. 110. 1838.

黄花草 *huang hua cao*

Herbs, annual, (10–)30–100(–160) cm tall. Stems simple or branched, ± glandular hirsute, viscous. Petiole 1.5–4.5(–8) cm, glandular hirsute; leaflets 3 or 5; leaflet blades ovate to oblanceolate-elliptic, (0.6–)2–6 × 0.5–3.5 cm, both surfaces glandular hirsute, margin entire to glandular ciliate, apex acute to obtuse. Inflorescences 5–10 cm but 10–15 cm in fruit; bracts 1–2.5 cm, palmately compound, 3-foliolate, often deciduous, glandular hirsute. Pedicel 0.6–3 cm, glandular hirsute. Inflorescences 3–6-flowered. Sepals green, equal, distinct, 5–10 × 0.8–1.2 mm, lanceolate, persistent, glandular hirsute, base cuneate, margin entire. Petals bright yellow, basally sometimes purple, arranged in an adaxial semicircle before anthesis but radially arranged at anthesis, 7–14 × 3–4 mm, oblong to ovate, clawed. Stamens (dimorphic, 4–10 adaxial ones much shorter with a swelling below anthers) green, 5–9 mm; anthers green, 1.4–3 mm. Pistil 6–10 mm, densely glandular; style 1–1.2[–8] mm; stigma capitate. Fruit lacking a gynophore; capsule 3–10 cm × 2–4 mm, strongly ridged longitudinally, dehiscent only partway from apex to base, glandular pubescent or essentially glabrous. Seeds 25–40[to ca. 100] per capsule, light brown, 1.2–1.8 × 1–1.2 mm, compressed spherical, transversely finely ridged. Fl. Jul–Sep, fr. Oct.  $2n = 20, 34, 60$ .

Grassy slopes, wastelands, orchards, rice paddies; near sea level to 300 m. S Anhui, S Fujian, Guangdong, Guangxi, Hainan, E Hubei, Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang [Bhutan, Cambodia, India, Indonesia, Japan (Ryukyu Islands), Laos, Malaysia, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam; tropical Africa, SW Asia, tropical Australia; naturalized in tropical America].

This species comprises three varieties, two of which occur in China and one of which occurs in India.

The seeds have a high oil content (ca. 26%) and are rich in linoleic acid; they are eaten in India. The leaves and seeds have been used medicinally in Asia (S China, India) and the Pacific islands (Guam) for the eyes and intestines and as a poultice for headaches and rheumatism (Chopra et al., Glossary Indian Medicinal Pl. 1956; Manandhar, Pl. People Nepal. 2002).

1a. Plants throughout with thin yellow viscid glandular trichomes and pubescence, with a bad smell ..... 1a. var. *viscosa*

1b. Plants smooth and glabrous, without any special smell ..... 1b. var. *deglabrata*

**1a. *Arivela viscosa* var. *viscosa***

黄花草(原变种) *huang hua cao* (yuan bian zhong)

*Cleome viscosa* Linnaeus, Sp. Pl. 2: 672. 1753; *C. icosandra* Linnaeus; *Polanisia viscosa* (Linnaeus) Candolle.

Plants throughout with thin yellow viscid glandular trichomes and pubescence, with a bad smell. Fl. Jul–Sep, fr. Oct.

Grassy slopes, wastelands, orchards, rice paddies; near sea level to 300 m. S Anhui, S Fujian, Guangdong, Guangxi, Hainan, E Hubei,

Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang [Bhutan, Cambodia, India, Indonesia, Japan (Ryukyu Islands), Laos, Malaysia, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam; tropical Africa, SW Asia, tropical Australia; naturalized in tropical America].

**1b. *Arivela viscosa* var. *deglabrata*** (Backer) M. L. Zhang & G. C. Tucker, **comb. nov.**

无毛黄花草 wu mao huang hua cao

Basionym: *Polanisia viscosa* var. *deglabrata* Backer, Fl. Bat. 53. 1907; *Cleome viscosa* f. *deglabrata* (Backer) Jacobs; *C. viscosa* var. *deglabrata* (Backer) B. S. Sun; *P. icosandra* Wight & Arnott f. *deglabrata* (Backer) Backer.

Plants throughout smooth and glabrous, without a distinctive or unpleasant smell. Ovary and fruit glabrous. Fr. Oct.

Near sea level to 300 m. S Fujian, Guangdong, Jiangxi, Zhejiang [Indonesia, Malaysia, Vietnam].

This taxon is reported here for the first time from Vietnam (Phuoc Vinh, 6 Oct 1970, *R. V. Hoffman s.n.*, NY).

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