

1. GONOCARPUS Thunberg, Nov. Gen. Pl. 3: [55]. 1783.

小二仙草属 xiao er xian cao shu

Herbs terrestrial, prostrate or erect. Stem smooth or 4-ribbed, glabrous to sparsely pubescent. Leaves decussate or alternate, rarely in whorls of 3(–5), petiolate or sessile, simple, margin serrate or entire; venation pinnate. Inflorescence an indeterminate spike of solitary flowers borne in axils of alternate, opposite, or whorled primary bracts, with lateral spikes in axils of upper leaves. Flowers bisexual, (3 or)4-merous. Sepals deltoid, often with midrib and median basal callus, persistent in fruit. Petals hooded, keeled, usually shortly clawed, caducous. Stamens usually 2 × as many as sepals; filaments short; anthers oblong, 4-loculed, antisealous anthers slightly longer than antipetalous ones. Ovary incompletely (3 or)4-loculed, with 1 pendulous ovule per locule (if 2, then 1 aborting early), (6–)8-ribbed, ornamented, mid-sepaline ribs less distinctly raised than others; styles as many as sepals; stigma capitate. Fruit small, nutlike, 1-loculed (septa almost absent); pericarp somewhat membranous. Seed 1, occupying entire fruit.

About 35 species: SW Asia, and primarily Australia and New Zealand; two species in China.

In FRPS (53(2): 140–143. 2000), *Gonocarpus* was included in *Haloragis* J. R. Forster & G. Forster. However, the present treatment follows Orchard (Bull. Auckland Inst. Mus. 10: 1–299. 1975), who recognized *Gonocarpus* based on differences of the inflorescence, septa, pericarp, and development of the fruit.

- 1a. Herbs pubescent; leaf blade linear-lanceolate or oblong-lanceolate, 10–28 × 1–9 mm; flowers erect, yellow; fruit with 1 or 2 weak, oblique calluses between ribs 1. *G. chinensis*
- 1b. Herbs glabrous; leaf blade ovate or elliptic, 6–17 × 4–8 mm; flowers nodding at anthesis, red or rose; fruit often smooth 2. *G. micranthus*

1. *Gonocarpus chinensis* (Loureiro) Orchard, Bull. Auckland Inst. Mus. 10: 207. 1975.

(W Iran), N and W Australia, Pacific islands (Caroline Islands, introduced in Hawaii)].

黄花小二仙草 huang hua xiao er xian cao

Chinese plants belong to *Gonocarpus chinensis* subsp. *chinensis*, whereas subsp. *verrucosus* (Maiden & Betche) Orchard (*Haloragis verrucosa* Maiden & Betche) is found along the coastal regions of New South Wales and Queensland. The fruit of the latter taxon have papillae (never calluses) on and between the ribs and are always globular.

Gaura chinensis Loureiro, Fl. Cochinch. 1: 225. 1790; *Gonocarpus scaber* K. D. Koenig; *G. tetragynus* Labillardière; *Haloragis chinensis* (Loureiro) Merrill; *H. chinensis* var. *yapensis* Tuyama; *H. scabra* (K. D. Koenig) Benthams; *H. scabra* var. *elongata* Schindler; *H. scabra* var. *novaguineensis* Valetton; *H. tetragyna* (Labillardière) J. D. Hooker; *H. tetragyna* var. *micrantha* Benthams.

Herbs perennial, erect or ascending, 10–60 cm tall. Stem weak, 4-ribbed, scabrous with sparse appressed hairs. Leaves decussate, becoming alternate near inflorescence, sessile or subsessile; leaf blade linear-lanceolate, oblong, or linear, 10–28 × 1–9 mm, surfaces scabrous, base rounded, margin thickened, serrate with 15–30 small teeth, apex obtuse. Inflorescence an indeterminate spike, branched; bracts leaflike, lanceolate to narrowly ovate, 0.5–1.5 × 0.3–0.5 mm, adaxially pubescent, margin thickened, entire; bracteoles brown, linear to lanceolate, 0.2–0.5 mm, membranous. Flowers erecto-patent, 4-merous; pedicel ca. 0.2 mm. Sepals green, triangular, 0.6–0.9 × 0.4–0.5 mm, glabrous, with a small, median-basal callus, margin thickened. Petals yellow, sometimes reddish, hooded, very shortly clawed, 1–1.5 × 0.3–0.5 mm, sparsely hirsute on keel. Stamens 8, ca. 1 mm. Ovary 4-loculed; styles clavate, 0.1–0.3 mm; stigmas reddish, capitate, fimbriate. Fruit silver-gray to dark gray, broadly ellipsoid, 0.7–1 × 0.8–1 mm, weakly 4-angled or 8-ribbed, with up to 2 oblique calluses between ribs, scabrous, with short, curved, appressed hairs confined almost entirely to ribs. Seed 1 per fruit. Fl. Mar–Oct, fr. May–Nov.

Open grasslands, waste land, river banks, deforested slopes; 100–800 m, to 1500 m in SW China. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang [Indonesia, Malaysia (Sabah), Papua New Guinea, Philippines, Singapore, Vietnam; SW Asia

2. *Gonocarpus micranthus* Thunberg, Nov. Gen. Pl. 3: [55]. 1783.

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Gonocarpus citriodorus A. Cunningham; *G. depressus* A. Cunningham; *Haloragis citriodora* (A. Cunningham) Walpers; *H. depressa* (A. Cunningham) Walpers; *H. micrantha* (Thunberg) R. Brown; *H. minima* Colenso.

Herbs perennial, prostrate or decumbent, 5–15(–45) cm tall. Stem sometimes reddish, smooth, glabrous. Leaves decussate; petiole 0.5–2 mm; leaf blade ovate-cordate or elliptic, 6–17 × 4–8 mm, surfaces glabrous, base rounded, sometimes cordate, margin thickened, crenate-serrulate with 6–20 small teeth. Inflorescence an indeterminate spike, unbranched or branched; bracts lanceolate, 0.5–0.8 × 0.1–0.2 mm, membranous, margin entire; bracteoles brown, suborbicular, 0.1–0.2 × 0.1–0.2 mm, membranous, margin serrulate or entire; all bracts deciduous at anthesis. Flowers erect then nodding, 4-merous; pedicel 0.1–0.3 mm. Sepals green, deltoid, ca. 0.5 mm, sometimes with a median-basal callus, base shallowly cordate. Petals reddish, hooded, keeled, 0.8–1.2 mm, sparsely hirsute on keel. Stamens 8, ca. 1 mm. Ovary 4-loculed; styles clavate, ca. 0.8 × 0.7 mm; stigmas red, capitate, fimbriate. Fruit reddish to gray, obovoid-globose to depressed globose, 0.9–1 × 0.8–1.1 mm, 8-ribbed, glabrous. Seed 1 per fruit. Fl. Apr–Aug, fr. May–Oct.

Wet or boggy places, either in open or grassy situations; 100–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, NE India (Assam, Sikkim), Indonesia, Japan, Korea, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam; S and E Australia, Pacific islands (New Zealand)].

Gonocarpus micranthus subsp. *micranthus* is found almost throughout the range of the genus, whereas subsp. *ramosissimus* Orchard is found almost entirely along the coastal regions of New South Wales and Queensland. Plants of the latter taxon are erect, 25–60 cm tall, and have diffuse inflorescences.

HALORAGACEAE