

## 6. SIDA Linnaeus, Sp. Pl. 2: 683. 1753.

黄花稔属 huang hua ren shu

Herbs perennial or annual, subshrubs or shrubs, to 2 m, most parts with stellate, simple and/or glandular hairs. Leaves simple; stipules threadlike to narrowly lanceolate; leaf blade entire (sometimes lobed), margin usually dentate, without foliar nectaries. Flowers solitary or paired, axillary or subterminal, often in axillary or terminal racemes or panicles, rarely in umbels or glomerules. Epicalyx absent. Calyx campanulate or cup-shaped, 5-lobed, often 10-ribbed basally and plicate in bud. Corolla mostly yellow, rarely white or ± orange [or rose or purplish], sometimes with a dark center. Petals 5, free, basally connate. Filament tube pubescent or glabrous, with many anthers at apex. Ovary 5–10-loculed; ovules 1 per locule, pendulous; style branches as many as carpels; stigma capitate. Schizocarp ± disk-shaped or globose; mericarps (4–)5–10(–14), sculptured or smooth, sometimes partly membranous, mostly beaked, often with 1 or 2 apical awns, often minutely stellate puberulent, dehiscent or indehiscent. Seeds 1 per mericarp, smooth, glabrous except sometimes for minute hairs around hilum.

Between 100 to 150 species: Africa, Asia, Australia, North and South America, Pacific islands; ca. 2/3 of the species American; 14 species (six endemic) in China.

Many species of this genus are used as fiber sources. Some species are widespread ruderals with sporadic distributions. Material with fully mature fruits is needed for reliable determinations. Studies of African material have demonstrated that there are superficially similar species that differ most obviously in details of mericarp morphology, and detailed studies have led to the recognition of more, rather than fewer, taxa. More information is needed on variation within populations, particularly in mericarp morphology, to assess the status of the awnless species of *Sida*, as there are indications that awned and awnless mericarps can occur on the same plant, thereby suggesting a possible reduction in species numbers.

*Sida cavaleriei* H. Léveillé is a synonym of *Alectra arvensis* (Benth) Merrill in the Scrophulariaceae (see Fl. China 18: 86. 1998).

- 1a. Calyx adaxially with long simple hairs at least along veins; mericarps smooth, thin-walled, not dehiscent.
  - 2a. Herbs erect; pedicel 2–6(–15) mm; live plants sticky, with inconspicuous glandular hairs as well as stellate and/or simple hairs ..... 11. *S. mysorensis*
  - 2b. Herbs or subshrubs procumbent; pedicel (1–)2–4 cm; plants not sticky, without glandular hairs.
    - 3a. Stems both stellate puberulent and simple pilose, never rooting at nodes; mericarps without distinct awns ..... 12. *S. cordata*
    - 3b. Stems subglabrous or stellate puberulent, rooting at nodes; mericarps with 2 short awns ..... 13. *S. javensis*
- 1b. Calyx adaxially stellate pubescent or glabrous, sometimes with ciliate margins; mericarps smooth, vertically grooved or reticulately wrinkled, sometimes dehiscent.
  - 4a. Mericarp awns conspicuous, 3–8 mm, retrorsely barbed.
    - 5a. Leaf blade 5–10 cm; corolla 2–3.5 cm in diam.; filament tube glabrous ..... 7. *S. subcordata*
    - 5b. Leaf blade 1–5 cm; corolla less than 1.5 cm in diam.; filament tube with long hairs ..... 8. *S. cordifolia*
  - 4b. Mericarp awns absent or less than 2 mm, hairs if present ± spreading.
    - 6a. Flowers fascicled or in umbel-like or subpaniculate inflorescences.
      - 7a. Leaf blade ovate, base cordate ..... 9. *S. cordifolioides*
      - 7b. Leaf blade obovate, broadly elliptic, or orbicular, base rounded or obtuse ..... 10. *S. yunnanensis*
    - 6b. Flowers usually solitary, axillary or subterminal, sometimes on racemelike axillary shoots.
      - 8a. Leaves distichous; leaf blade base rounded or obtuse; stipules unequal, one filiform with a single vein, the other linear-lanceolate with 2 or more veins; calyx and mericarps often glabrous ..... 3. *S. acuta*
      - 8b. Leaves spiral; leaf blade base cuneate to minutely rounded; stipules equal; calyx hairy; mericarps often with apex ± puberulent.
        - 9a. Mericarps without awns.
          - 10a. Leaf blade obovate, oblong, or suborbicular, 0.5–2 cm; petiole 2–4 mm ..... 1. *S. chinensis*
          - 10b. Leaf blade ovate to linear-lanceolate, 2–7 cm; petiole 8–20 mm ..... 2. *S. orientalis*
        - 9b. Mericarps with awns.
          - 11a. Petiole 5–11 mm.
            - 12a. Leaf margin irregularly sharply dentate to double dentate; calyx sparsely stellate pilose ..... 4. *S. szechuensis*
            - 12b. Leaf margin entire near base, otherwise obtusely denticulate; calyx densely stellate pubescent ..... 14. *S. quinquevalvacea*
          - 11b. Petiole 3–5(–8) mm.
            - 13a. Calyx stellate pubescent; filament tube glabrous; mericarps 7–10 ..... 5. *S. rhombifolia*
            - 13b. Calyx stellate tomentose; filament tube hairy; mericarps 6–8 ..... 6. *S. alnifolia*

1. *Sida chinensis* Retzius, Observ. Bot. 4: 29. 1786.

中华黄花稔 zhong hua huang hua ren

Shrubs erect, many branched, to 0.7 m tall, most parts densely stellate tomentose. Stipules subulate; petiole 2–4 cm, stellate tomentose; leaf blade obovate, oblong, or suborbicular, 5–20 × 3–10 mm, abaxially stellate tomentose, adaxially sparsely stellate hairy or subglabrous. Flower solitary, axillary. Pedicel ca. 1 cm, stellate tomentose, articulate at middle. Calyx campanulate, ca. 6 mm in diam., abaxially densely stellate tomentose, lobes triangular, ca. 2.5 mm. Corolla yellow, ca. 1.2 cm in diam.; petals obovate, ca. 6 mm. Filament tube ca. 4 mm, hirsute, filaments slender; anthers yellow. Schizocarp globose, ca. 4 mm in diam., upper surface broadly conical with prominent radial grooves; mericarps 7 or 8, enclosed by persistent calyx, smooth, pilose apically, apex not awned. Fl. winter–spring.

- Sunny slopes, streamsides. Hainan, Taiwan, Yunnan.

Some material named as *Sida chinensis* looks much like a hairy form of *S. acuta* with very acute but awnless sculptured mericarps.

## 2. *Sida orientalis* Cavanilles, Diss. 1: 21. 1785.

东方黄花稔 dong fang huang hua ren

Subshrubs erect, to 2 m tall; stems densely stellate woolly. Leaves dimorphic; stipules subulate, 3–5 mm, caducous; petiole of lower leaves ca. 2 mm, of upper leaves 8–10 mm, densely shortly stellate woolly; blades on proximal part of stem ovate, 4–7 × ca. 3 cm, both surfaces densely shortly stellate woolly, base nearly rounded, margin crenate, apex acute, those on distal part of stem linear-lanceolate to lanceolate, 2–4 × 0.5–1 cm. Flowers solitary, axillary or terminal. Pedicel 1.5–3 cm, densely shortly stellate woolly and with long silk hairs, articulate near apex. Calyx cup-shaped, ca. 8 mm, abaxially densely stellate woolly, lobes triangular, apices acute. Corolla yellow; petals ca. 14 mm. Filament tube ca. 6 mm, hirsute. Schizocarp ± disk-shaped, ca. 6 mm in diam.; mericarps 8 or 9, ca. 4 mm, wrinkled, minutely hairy, apex not awned. Fl. autumn–winter.

- Sunny dry slopes; 1000–2300 m. Taiwan, S Yunnan [?India].

The status of Chinese plants named as *Sida orientalis* needs more investigation. Borssum Waalkes (Blumea 14: 197. 1966) identified possible type material of *S. orientalis* as the following species, *S. acuta* N. L. Burman. The material identified by Hu (Fl. China, Malvaceae [Fam. 153], 14. 1955) as *S. orientalis* is much more closely related to *S. rhombifolia* Linnaeus, differing only by the absence of mericarp awns, a feature that is not as reliable as assumed by most authors, as specimens have been seen with both awned and awnless mericarps on the same plant.

## 3. *Sida acuta* N. L. Burman, Fl. Indica, 147. 1768.

黄花稔 huang hua ren

*Malvastrum carpinifolium* (Linnaeus f.) A. Gray; *Sida acuta* subsp. *carpinifolia* (Linnaeus f.) Borssum Waalkes; *S. acuta* var. *carpinifolia* (Linnaeus f.) K. Schumann; *S. acuta* var. *intermedia* S. Y. Hu; ?*S. bodinieri* Gandoger; *S. carpinifolia* Linnaeus f.; *S. carpinifolia* var. *acuta* (N. L. Burman) Kurz; ?*S. chanetii* Gandoger; *S. lanceolata* Retzius; *S. scoparia* Loureiro; *S. stauntoniana* Candolle.

Subshrubs or herbs erect, 1–2 m tall. Branchlets pilose or subglabrous. Leaves ± distichous; stipules filiform, 4–6 mm, often longer than petiole, usually persistent; petiole 4–6 mm, sparsely pilose; leaf blade ovate, oblong, lanceolate, or linear-

lanceolate, 2–5 × 0.4–1 cm, both surfaces glabrous or sparsely stellate pilose, rarely with simple hairs adaxially, base obtuse, margin dentate, sometimes partly entire toward its base, apex acute or acuminate. Flowers solitary or paired, axillary, sometimes congested at stem apex. Pedicel 4–12 mm, pilose, articulate at middle. Calyx shallowly cup-shaped, connate in basal 1/2, ca. 6 mm, mostly glabrous, margins often ciliate, lobes 5, caudate. Corolla yellow, less often white or yellow-orange, 8–10 mm in diam.; petals obovate, 6–7 mm, ciliate, base attenuate, apex rounded. Filament tube ca. 4 mm, sparsely hirsute. Schizocarp nearly globose; mericarps (4–)6(–)9, segmentiform-tetrahedral, ca. 3.5 mm, basally transversely ridged, side walls reticulate-veined, glabrous, apex beaked, ± extending into 2 awns, apically dehiscent. Seed trigonous, ca. 2 mm, glabrous except around hilum. Fl. winter–spring.

Scrub, roadsides, wastelands. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan [Bhutan, Cambodia, India, Laos, Nepal, Thailand, Vietnam].

The glabrous calyx is usually diagnostic for *Sida acuta*. *Sida bodinieri* was described as glabrous and if correctly placed in *Sida* would most likely belong under *S. acuta*. *Sida chanetii* was related by the original author to *S. acuta* but it was based on a collection from near Beijing, well north of any other records for *Sida*, and so its identity needs confirmation.

The bark is a good fiber source, and the roots are used medicinally.

## 4. *Sida szechuensis* Matsuda, Bot. Mag. (Tokyo) 32: 165. 1918.

拔毒散 ba du san

Subshrubs erect, to 1 m tall. Branchlets stellate pubescent. Stipule subulate, shorter than petiole; petiole 5–10 mm, stellate pubescent; leaf blade broadly rhombic to flabellate to oblong-elliptic to oblong, 2–5 × 2.5–5 cm; blades on distal part of stem smaller and relatively narrower, abaxially densely gray stellate tomentose, adaxially sparsely stellate pubescent to subglabrous, base rounded to cuneate, margin irregularly dentate to double dentate, apex acute to obtuse, rounded. Flower solitary, axillary, often congested at shoot apex. Pedicel 0.6–1.5 cm, densely stellate pubescent and viscid-hairy, articulate above middle. Calyx cup-shaped, ca. 7 mm, lobes triangular, sparsely stellate pilose. Corolla yellow, 1–1.5 cm in diam.; petals obovate, ca. 8 mm. Filament tube ca. 5 mm, long hirsute. Schizocarp nearly globose, ca. 6 mm in diam.; mericarps 8 or 9, segmentiform, ca. 3 mm, obscurely transversely wrinkled to base, side walls veined, abaxially grooved near apex, upper surface stellate puberulent, beak acuminate, splitting from apex, each side merging into a flattened, ca. 0.7 mm awn. Seeds black-brown, ca. 2 mm, smooth, white pilose. Fl. Jun–Nov.

- Scrub, streamsides, roadsides; 300–1800 m. Guangxi, Guizhou, Sichuan, Yunnan.

The fibers are widely used, and the entire plant is of medicinal use.

## 5. *Sida rhombifolia* Linnaeus, Sp. Pl. 2: 684. 1753.

白背黄花稔 bai bei huang hua ren

*Malva rhombifolia* (Linnaeus) E. H. L. Krause; *Sida alba* Cavanilles (1785), not Linnaeus (1763); *S. insularis* Hatusima; *S. rhombifolia* subsp. *insularis* (Hatusima) Hatusima; *S.*

*rhombofolia* var. *rhomboidea* (Roxburgh ex Fleming) Masters; *S. rhomboidea* Roxburgh ex Fleming.

Subshrubs erect or prostrate, many branched, to ca. 1 m tall. Branchlets stellate. Stipules spinelike, 3–5 mm; petiole 2–5(–8) mm, stellate puberulent; leaf blade rhombic to oblong-lanceolate or obovate, rarely linear-lanceolate, 1–4.5 × 0.6–2 cm, abaxially gray-white stellate pilose, adaxially sparsely stellate pilose to subglabrous, base broadly cuneate, margin dentate, apex obtuse to acute. Flowers solitary, axillary. Pedicel 1–2.5 cm, densely stellate tomentose, articulate above middle. Calyx cup-shaped, 4–5 mm, abaxially stellate pubescent, lobes triangular, apices acute. Corolla ca. 1 cm in diam.; petals yellow, obovate, ca. 8 mm, base attenuate, apex rounded. Filament tube 4–5 mm, glabrous. Style branches 8–10. Fruit semiglobose to broadly turbinate, 6–7 mm in diam.; mericarps 7–10, 2.5–3 mm excluding awn, shallowly grooved to near base, eventually dehiscent, side walls usually thin, not veined, stellate puberulent, apex usually (1 or)2-awned, awns to 1.5 mm. Seeds reniform, ca. 2 mm, blackish. Fl. autumn–winter.

Scrub, open slopes, streamsides. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Sichuan, Taiwan, Yunnan [Bhutan, Cambodia, India, Laos, Nepal, Thailand, Vietnam; pantropical].

The entire plant is used medicinally.

*Sida rhombifolia* is the type species of the genus *Sida*. The taxonomy of this species/species complex is controversial and is discussed by Verdcourt (Kew Bull. 59: 233–239. 2005). The lectotype of *S. rhombifolia* almost certainly came from Jamaica, not India as suggested by some authors, and is a match with neither African nor Asian material. Verdcourt recognized six varieties for East African material, differing most obviously in mericarp morphology: most notably the degree of dehiscence, which varies from completely indehiscent to dehiscent by an apical slit to breaking into two valves, the degree of sculpturing, and the presence or not of awns. Chinese material appears to have a comparable range of variation, though many collections lack fully mature mericarps, and more detailed studies could lead to the recognition of more, comparable taxa.

Hu (Fl. China, Malvaceae [Fam. 153], 20–21. 1955) recognized two varieties, var. *rhombofolia* and var. *corynocarpa* (Wallich ex Masters) S. Y. Hu (Fl. China, Malvaceae [Fam. 153], 20. 1955), differing only in minor quantitative characters. The validity of var. *corynocarpa* is open to question, as Masters (Fl. Brit. India 1: 324. 1874) only mentioned the supposed basionym "*Sida corynocarpa*" in a note under *S. rhombifolia* var. *retusa* and therefore cannot be said to have accepted it as a species. Plants with prostrate stems from Taiwan, Japan (Ryukyu Islands), and the Philippines have been placed in *S. rhombifolia* subsp. *insularis*. Their status needs more detailed investigation. Borssum Waalkes included *S. alnifolia* Linnaeus within *S. rhombifolia* as var. *retusa*.

*Hu 12784*, from Hong Kong, has 10 indehiscent mericarps per flower, each with a single awn, suggesting a relationship to *Sida rhombifolia* var. *maderensis* (Lowe) Lowe (*S. maderensis* Lowe; *S. unicornis* Marais). That taxon has rather more strongly sculptured mericarps than *Hu 12784*, which might represent a distinct taxon.

**6. *Sida alnifolia* Linnaeus, Sp. Pl. 2: 684. 1753.**

栲叶黄花稔 qi ye huang hua ren

Subshrub or shrubs erect, 1–2 m tall. Branchlets thin, stellate pilose. Stipules subulate, usually shorter than petiole; petiole 2–8 mm, stellate pilose; leaf blade obovate, ovate,

ovate-lanceolate, or nearly orbicular, 2–5 × 0.3–3 cm, abaxially stellate velutinous, adaxially stellate pilose, base rounded to cuneate, margin regularly dentate to crenately serrulate, apex acute to rounded. Flowers solitary, axillary. Pedicel to 3 cm, articulate in distal 1/2, densely stellate tomentose. Calyx cup-shaped, 6–8 mm, stellate tomentose, lobes triangular. Corolla yellow, ca. 1 cm in diam.; petals obovate, ca. 1 cm. Filament tube 4–5 mm, hirsute. Schizocarp subglobose; mericarps 6–8, ca. 3 mm, hairy, apex 2-awned. Fl. Jul–Dec.

Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Taiwan, Yunnan [India, Thailand, Vietnam].

This species is very similar to *Sida rhombifolia*. It differs in having a hirsute filament tube and 6–8 mericarps per flower, while *S. rhombifolia* has a glabrous filament tube and 8–10 mericarps. It has been confused with *S. fallax* Walpers, described from Hawaii. The treatment of the taxa included within this species has varied greatly between all the accounts that have dealt with them. Four varieties are tentatively accepted here but as with *S. rhombifolia* there is a need for much more detailed studies.

- 1a. Leaf blade 2–5 cm; mericarps velutinous ..... 6a. var. *alnifolia*
- 1b. Leaf blade less than ca. 2 cm; mericarps villous at apex or pubescent.
  - 2a. Pedicel to 3 cm; leaf blade orbicular ..... 6d. var. *orbiculata*
  - 2b. Pedicel less than 1 cm; leaf blade ovate, oblong, or obovate.
    - 3a. Leaf blade ovate or oblong, margin dentate; mericarps villous at apex ..... 6b. var. *microphylla*
    - 3b. Leaf blade oblong or obovate, margin crenately serrulate; mericarps pubescent ..... 6c. var. *obovata*

**6a. *Sida alnifolia* var. *alnifolia***

栲叶黄花稔(原变种) qi ye huang hua ren (yuan bian zhong)

*Sida retusa* Linnaeus; *S. rhombifolia* Linnaeus subsp. *retusa* (Linnaeus) Borssum Waalkes; *S. rhombifolia* var. *retusa* (Linnaeus) Masters.

Petiole to 8 mm; leaf blade 2–5 × 0.8–3 cm, margin dentate. Filament tube hirsute. Mericarps velutinous.

Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Taiwan, Yunnan [India, Thailand, Vietnam].

**6b. *Sida alnifolia* var. *microphylla* (Cavanilles) S. Y. Hu, Fl. China, Malvaceae [Fam. 153], 22. 1955.**

小叶黄花稔 xiao ye huang hua ren

*Sida microphylla* Cavanilles, Diss. 1: 22. 1785; *S. rhombifolia* var. *microphylla* (Cavanilles) Masters.

Petiole 2–3 mm; leaf blade oblong to ovate, 0.5–2 × 0.3–1.5 cm, margin dentate. Pedicel less than 1 cm. Filament tube hirsute. Mericarps apically long hairy.

Fujian, Guangdong, Guangxi, Hainan, Yunnan [India].

**6c. *Sida alnifolia* var. *obovata* (Wallich ex Masters) S. Y. Hu,**

Fl. China, Malvaceae [Fam. 153], 22. 1955.

倒卵叶黄花稔 *dao luan ye huang hua ren*

*Sida rhombifolia* Linnaeus var. *obovata* Wallich ex Masters, Fl. Brit. India 1: 324. 1874.

Leaf blade oblong to obovate, 0.5–2 × 0.4–1.2 cm, margin denticulate. Pedicel 8–10 mm. Filament tube long hirsute. Mericarps puberulent.

Guangdong, Guangxi, Hainan, Yunnan [India].

**6d. *Sida alnifolia* var. *orbiculata*** S. Y. Hu, Fl. China, Malvaceae [Fam. 153], 22. 1955.

圆叶黄花稔 *yuan ye huang hua ren*

Petiole ca. 5 mm, densely stellate pilose; leaf blade orbicular, 0.5–1.3 cm in diam., both surfaces stellate hirsute, margin crenate. Flower solitary. Pedicel ca. 3 cm. Calyx stellate tomentose, lobes apically ciliate. Filament tube long hirsute.

• Guangdong.

**7. *Sida subcordata*** Spanoghe, Linnaea 15: 172. 1841.

榛叶黄花稔 *zhen ye huang hua ren*

*Sida corylifolia* Wallich ex Masters.

Subshrubs erect, 1–2 m tall; most parts sparsely stellate puberulent, simple hairs absent. Stipule filiform, 3–4 mm; petiole 2–6 cm; leaf blade orbicular or ovate, 5–10 × 3–7.5 cm, base rounded, margin minutely crenate, apex shortly acuminate. Flowers mostly subterminal, in umbel-like terminal clusters, often on reduced axillary, 2–7 cm shoots. Pedicel 0.6–2.5 cm, articulate at middle, sparsely stellate pilose. Calyx 8–11 mm, sparsely stellate pilose, lobes 5, triangular. Corolla yellow, 2–3.5 cm in diam.; petals 5, obovate, ca. 1.2 cm. Filament tube ca. 1 cm, glabrous, filaments numerous, slender, ca. 3 mm. Style branches 8–9. Schizocarp nearly globose; mericarps 8 or 9, with vertical grooves, apex 2-awned, exceeding calyx, awn 3–6 mm, retrorsely hispid. Seeds ovoid, apex densely brown puberulent. Fl. winter–spring.

Margins of open forests, grasslands, roadsides. Guangdong, Guangxi, Hainan, Yunnan [India, Indonesia, Laos, Myanmar, Thailand, Vietnam].

*Sida subcordata* is very variable in leaf shape and density of indumentum, but the combination of the large leaves and flowers and conspicuously retrorsely hispid mericarp awns is diagnostic. Borssum Waalkes (Blumea 14: 202. 1964) speculated that the species may have arisen through hybridization between *S. rhombifolia* Linnaeus and *S. cordifolia* Linnaeus, but this needs to be verified.

The entire plant is used medicinally.

**8. *Sida cordifolia*** Linnaeus, Sp. Pl. 2: 684. 1753.

心叶黄花稔 *xin ye huang hua ren*

*Sida herbacea* Cavanilles; *S. holosericea* Willdenow ex Sprengel; *S. hongkongensis* Gandoger; *S. rotundifolia* Lamarck ex Cavanilles.

Subshrubs erect, ca. 1 m tall. Branchlets, stipules, petioles,

and leaves densely stellate strigose; branchlets and petioles velutinous, hairs ca. 3 mm. Stipule filiform, ca. 5 mm; petiole 1–2.5 cm; leaf blade ovate, 1.5–5 × 1–4 cm, abaxially velutinous on veins, base minutely cordate or rounded, margin crenate, apex obtuse to rounded. Flower solitary or fascicled, axillary or terminal. Pedicel 5–15 mm, densely stellate pilose and with long hairs, articulate in distal part. Calyx cup-shaped, lobes triangular, 5–6 mm, densely stellate pilose and with long hairs. Corolla yellow, ca. 1.5 cm in diam.; petals oblong, 6–8 mm. Filament tube ca. 6 mm, hirsute. Schizocarp 6–8 mm in diam.; mericarps 10, with vertical grooves, apex 2-awned, awn 3–4 mm, exceeding calyx, retrorsely barbed. Seeds long ovoid, apex hairy. Fl. year-round.

Scrub on slopes, grassy roadsides. Fujian, Guangdong, Guangxi, Hainan, Sichuan, Taiwan, Yunnan [Bhutan, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand; Africa, South America; ± pantropical].

**9. *Sida cordifolioides*** K. M. Feng, Acta Bot. Yunnan. 4: 27. 1982.

湖南黄花稔 *hu nan huang hua ren*

Subshrubby herbs erect, many branched, to 40 cm tall. Stem and branchlets stellate pilose or subglabrous. Stipules filiform, ca. 6 mm, stellate pilose; petiole 6–20 mm, sparsely stellate pilose; leaf blade ovate, 1.4–4 × 0.6–2.2 cm, abaxially stellate pilose, adaxially subglabrous or sparsely stellate pilose, base cordate. Flower solitary or nearly fascicled, axillary. Pedicel 4–7 mm, sparsely stellate pilose, articulate near apex. Calyx campanulate, ca. 4 mm, stellate pilose. Corolla yellow, ca. 8 mm in diam.; petals obovate-lanceolate. Filament tube sparsely strigose. Mericarps 5, with vertical grooves, densely stellate pilose, apically 2-awned.

• Hunan (Yongshun).

*Sida cordifolioides* is very similar to *S. cordifolia* Linnaeus, but differs by the uniformly stellate pilose stems and fruits with five mericarps. *Sida cordifolia* has stems with prominent simple hairs as well as stellate hairs and fruits with 10 mericarps.

**10. *Sida yunnanensis*** S. Y. Hu, Fl. China, Malvaceae [Fam. 153], 16. 1955.

云南黄花稔 *yun nan huang hua ren*

*Sida yunnanensis* var. *longistyla* J. L. Liu; *S. yunnanensis* var. *viridicaulis* J. L. Liu; *S. yunnanensis* var. *xichangensis* J. L. Liu.

Subshrubs erect, to 1 m tall. Branchlets stellate puberulent. Stipule filiform, ca. 5 mm; petiole 3–7 mm, stellate; leaf blade obovate, elliptic, or orbicular, 1–4 × 0.5–3 cm, abaxially stellate tomentose, adaxially sparsely minutely stellate puberulent to glabrous, base obtuse, margin dentate, apex obtuse to acute. Flowers subterminal, ± apically congested, mostly on reduced axillary shoots. Pedicel 3–4 mm at anthesis, to 1.5 cm in fruit, stellate puberulent, apically articulate. Calyx ca. 4 mm, minutely stellate puberulent, lobes triangular, acute to slightly acuminate. Corolla yellow, ca. 1 cm in diam.; petals obovate-lanceolate, ca. 8 mm. Filament tube usually hirsute. Mericarps 5–7, with vertical grooves, 3–4 mm, densely stellate, usually

apically 2-awned. Fl. autumn–winter.

• Scrub on slopes, grassy roadsides. Guangdong, Guangxi, Guizhou, Sichuan, Yunnan.

The original author suggested that *Sida yunnanensis* was related to *S. spinosa* Linnaeus, but it is distinguished by the broadly elliptic or obovate leaf blades (ovate-lanceolate in *S. spinosa*), shorter petioles (3–7 mm as opposed to 2–20 mm in *S. spinosa*), and the absence of the short nodal spines characteristic of *S. spinosa*. Paul (Fl. India 3: 290. 1993) included *S. yunnanensis* within *S. rhombifolia* var. *rhombifolia*, while Abedin (Fl. W. Pakistan 130: 81. 1979) accepted it and extended it to include material from India, Kashmir, Myanmar, and Pakistan.

**11. *Sida mysorensis*** Wight & Arnott, Prodr. Fl. Ind. Orient. 1: 59. 1834.

粘毛黄花稔 nian mao huang hua ren

*Sida glutinosa* Roxburgh, Fl. Ind., ed. 1832, 3: 172. 1832, not Cavanilles (1785); *S. urticifolia* Wight & Arnott (1834), not A. St.-Hilaire (1829); *S. wightiana* D. Dietrich.

Herbs subshrublike, erect, to 1 m tall. Stem with minute stellate hairs, multicellular glandular hairs, and long simple hairs. Stipule filiform, ca. 5 mm; petiole 1–3 cm, pilose; leaf blade ovate-cordate, 3–6 × 2.5–4.5 cm, viscid-stellate on both surfaces with minute stellate hairs and multicellular glandular hairs, base cordate, margin crenate, apex acuminate. Flowers solitary or paired, axillary or subterminal, often on congested reduced axillary shoots. Pedicel slender, 2–6(–15) mm, articulate at or above middle. Calyx widely campanulate, 6–8 mm, sparsely pilose with long hairs, lobes 2.5–3 × ca. 2.5 mm, acute or acuminate. Corolla yellow, 1–1.2 cm in diam.; petals obtriangular, glabrous. Filament tube strigose. Schizocarp nearly globose, 3–4 mm in diam.; mericarps 5, ovoid-tetrahedral, ca. 2.5 mm, smooth, apex shortly hairy, not awned, shortly acute, enclosed in persistent calyx. Seeds ovoid, slightly 3-sided, ca. 2 mm, glabrous.

Forest margins, slopes, grassy roadsides. Guangdong, Guangxi, Hainan, Taiwan, Yunnan [Cambodia, India, Indonesia, Laos, Philippines, Thailand, Vietnam].

*Sida mysorensis* is often confused with the closely related species *S. javensis* Cavanilles and *S. cordata* (N. L. Burman) Borssum Waalkes but can usually be distinguished by the presence of glandular hairs and the erect habit.

**12. *Sida cordata*** (N. L. Burman) Borssum Waalkes, Blumea 14: 182. 1966.

长梗黄花稔 chang geng huang hua ren

*Melochia cordata* N. L. Burman, Fl. Indica, 143. 1768; *Sida humilis* Cavanilles; *S. humilis* var. *veronicifolia* (Lamarck) Masters; *S. multicaulis* Cavanilles; *S. veronicifolia* Lamarck; *S. veronicifolia* var. *humilis* (Cavanilles) K. Schumann; *S. veronicifolia* var. *multicaulis* (Cavanilles) E. G. Baker.

Subshrubs procumbent, to 1 m. Stems slender, with simple pilose hairs, stiffly stellate hairs, and sometimes small simple multicellular hairs. Stipule filiform, 2–3 mm, sparsely pilose; petiole 1–3 cm, with conspicuous long simple hairs; leaf blade broadly ovate, (1–)2–5 × 1.8–4.5 cm, both surfaces stellate puberulent and ± appressed pilose, base cordate, margin crenate or

dentate, apex acuminate. Flowers usually solitary, axillary, often on leafy, racemelike, axillary shoots. Pedicel slender, 1.5–4 cm, articulate on distal part, sparsely stellate and with long hairs. Calyx cup-shaped, 4–6 mm, sparsely pilose with long hairs, lobes 2–3 mm, acute. Corolla yellow, 8–9 mm in diam. Filament tube ca. 2 mm, glabrous or sparsely pilose. Schizocarp nearly globose, ca. 3 mm in diam.; mericarps 5, ovoid-tetrahedral, ca. 2.5 mm, smooth, glabrous or sparsely minutely hairy at apex, apex not beaked, not awned. Fl. Jul–Feb.

Scrub, grassy roadsides. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan [India, Philippines, Sri Lanka, Thailand; pantropical species of unknown origin].

*Sida cordata* var. *nasirii* Abedin was erected for a group of specimens from Pakistan with distinctive, very slender, purple pedicels.

**13. *Sida javensis*** Cavanilles, Diss. 1: 10. 1785.

爪哇黄花稔 zhao wa huang hua ren

*Sida veronicifolia* Lamarck var. *javensis* (Cavanilles) E. G. Baker.

Herbs procumbent, 50–70 cm tall, rooting at nodes. Stems, petiole, and pedicels subglabrous or sparsely stellate strigose, sometimes sparsely pilose. Stipule subulate, ca. 2 mm; petiole 1–3 cm; leaf blade ovate or subcordate, sometimes obscurely 3-lobed, 1–3 × 1–2 cm, abaxially stellate strigose, adaxially sparsely strigose, base subcordate, margin dentate, apex obtuse. Flower solitary, axillary, mostly subterminal. Pedicel 2–2.5(–3.5) cm. Calyx 4–5 mm, sparsely pilose with long hairs. Corolla yellow; petals slightly longer than sepals. Filament tube glabrous. Schizocarp globose, ca. 3 mm in diam.; mericarps 5, segmentiform with sharp angles, ca. 2.5 mm, smooth, minutely hairy apically, with 2 tightly convergent awns to 1.5 mm, side walls thin, partly disintegrating.

Taiwan [Indonesia, Malaysia, Philippines; ?Africa].

This species is similar to *Sida cordata*; differences found in this species are the much sparser, not viscid, indumentum on the stems, stems that root adventitiously at the nodes, the glabrous filament tube, and the 2-awned mericarps.

Borssum Waalkes (Blumea 14: 184–186. 1964) recognized two subspecies, subsp. *javensis*, which is found in China, and subsp. *ex-pilosa* Borssum Waalkes, presumed to be native to the West Indies but also found in Indonesia and the Philippines. The latter subspecies is distinguished by its unlobed (vs. ± 3-lobed) leaf blades, shorter pedicels and calyx, and presence of simple hairs intermixed with the stellate hairs.

**14. *Sida quinquevalvacea*** J. L. Liu, Acta Bot. Yunnan. 14: 261. 1992.

五月黄花稔 wu pan huang hua ren

Shrubs erect or procumbent, many branched, to 1 m tall, most parts densely stellate tomentose. Stipules linear, 4–7 mm, caducous; petiole 8–11 mm, densely stellate pubescent; leaf blade elliptic, obovate-elliptic, to broadly obovate, (1–)2–5.6 × (0.4–)1.4–4.6 cm, papery, abaxially densely stellate pubescent, adaxially sparsely stellate pubescent or glabrescent, base broadly cuneate, obtuse or nearly rounded, margin entire near base, otherwise obtusely denticulate, apex obtuse, rounded or

emarginate. Flowers solitary or fascicled near twig tip, axillary. Pedicel (2.5–)4–7 mm, densely stellate pubescent. Calyx cup-shaped, densely stellate pubescent, lobes triangular, ca. 2 mm, apex acuminate or acute, persistent. Corolla yellow, 1.2–1.5 cm in diam.; petals obovate or obovate-triangular, 6–8 × 6–7 mm. Filament tube ca. 3 mm, sparsely hispid. Schizocarp 5-angled,

3.5–4 mm in diam.; mericarps 5(or 6), densely stellate pubescent, apex awned, awn 0.5–1 mm. Seeds triangular-obovoid, black. Fl. May–Oct, fr. Jul–Nov.

- Forest understories, wastelands, roadsides, growing with *Sida szechuensis*; 1100–1600 m. SW Sichuan.

This species is known to us only from the protologue.

Flora of China 12: 270–275. 2007.