
Skinneria Choisy; Spiranthera Bojer.

Herbs or shrubs, often twining, sometimes prostrate. Leaves usually petiolate, rarely sessile, margin entire, denticate, or palmately or pedately lobed or compound. Flowers axillary, solitary or in few- to many-flowered, variously branched cymose inflorescences; bracts usually small. Sepals variable in shape, often convex, subequal or outer 2 smaller, persistent, often enlarged in fruit. Corolla often yellow or white, sometimes with a darker center, funnelform or campanulate, usually glabrous, or midpetaline bands ± sericeous, sometimes only at apex; limb entire or ± 5-angled. Stamens included, often unequal; anthers often spirally twisted; filaments basally dilated, filiform distally; pollen 3–12-colpate or polyrangular, not spiny. Disc ringlike. Pistil included; ovary (imperfectly 2–)4-loculed, 4-ovulately. Style 1, filiform; stigmas 2-globular. Capsule 1–4-loculed, usually 4-valved or ± irregularly dehiscing. Seeds 4 or fewer, glabrous or pubescent to villous especially at margin.

Approximately 80 species: tropical regions of Africa, Asia, Australia, North and South America; 19 species in China.

The generic name Merremia was published as a nomen nudum by Dennstedt (Schlüssel Hortus Malab. 12, 23, 34. 1818). Several modern floras attribute the valid publication of the name to H. Hallier (Bot. Jahrb. Syst. 16: 581. 1893), but Endlicher (1841) actually validated the name.

Merremia is often confused with Ipomoea, which has pantoporate, spiny pollen, straight anthers and very few species with yellow corollas. It is also confused with Operculina, which consistently has a fruit with a circumscissile lid that detaches first, leaving a fragile endocarp that shatters irregularly. The distribution of hairs on the corolla is taxonomically important in Merremia; this is most easily discerned on mature flower buds.

1a. Leaves ± palmately (3–)5–7-lobed or palmately compound, with 5 leaflets.
   2a. Leaves palmately compound, leaflets 5, entire .................................................................  6. M. quinata
   2b. Leaves ± palmately lobed, lobes entire, undulate-lobate, to dentate.
      3a. Leaves palmately divided nearly to base, lobes 5 or 7; corolla white, throat purple-red ....................  7. M. dissecta
      3b. Leaves palmately angled or lobed; corolla yellow.
         4a. Leaves palmately 5–7-angled or -lobed nearly to middle; outer sepals 14–18 mm, hispitate abaxially; anthers spirally twisted ............................................................... ............. 8. M. vitifolia
         4b. Leaves deeply 3-lobed to below the middle; outer sepals 6–7 mm, glabrous; anthers straight ............................................................... 14. M. caloxantha

1b. Leaves entire, irregularly coarsely crenate or serrulate, sometimes 3-lobed.
   5a. Corolla glabrous outside.
      6a. Peduncle very short or absent; flowers 1–3 per axil; leaves reniform to broadly ovate, 0.5–3.5 mm ............................................................................................................................. 5. emarginata
      6b. Peduncle distinct; flowers and leaves not as above.
         7a. Sepals acuminate or subulate, subequal.
            8a. Corolla pink, pale purplish, or white, 1.2–1.9 cm; sepals 5–7 mm, subulate-mucronate; leaves ovate-cordate, 3–13 × 1.7–7.5 cm, apex attenuate or caudate ............................. 9. M. sibirica
            8b. Corolla pale yellow, ca. 3 cm; sepals 10–15 mm, acuminate; leaves oblong-elliptic to ovate-lanceolate, 1.8–5 × 0.8–2.5 cm, apex rounded to acute ................................. 10. M. collina
         7b. Sepals rounded, obtuse (and apiculate in M. hainanensis), or emarginate, outer 2 clearly shorter than inner ones (± unequal in M. gemella).
            9a. Inner sepals 8–10 mm; corolla 1.8–2.2 cm.
               10a. Pedicel terete; outer 2 sepals abaxially smooth; petiole 1.5–3 cm; Hainan ........................ 3. M. hainanensis
               10b. Pedicel verruculose apically; outer 2 sepals verruculose abaxially; petiole 3–8 mm; Guangxi ................................................................. 17. M. verruculosa
            9b. Inner sepals 5–7 mm; corolla 0.6–1.5(–2) cm.
               11a. Sepal margins purplish; leaves linear, oblong-lanceolate, ovate-oblong, or ovate, entire, base truncate, rounded, ± auriculate, or hastate ............................................................. 4. M. hirta
               11b. Sepal margins not colored; leaves ovate or ovate-cordate, entire, coarsely crenate, or 3-lobed, base cordate or broadly cordate.
                  12a. Outer sepals glabrous, all sepals broadly obovate to spatulate or oblong, apex emarginate and distinctly mucronate, mucro directed outward; corolla 0.6–1 cm; stems, petioles, and pedicels tuberculate ................................................................. 1. M. hederacea
                  12b. Outer sepals usually ± pilose abaxially, all sepals broadly obovate to ± circular, apex emarginate, not or only slightly mucronulate; corolla 1.5–2 cm; stems,
petioles, and pedicels without tubercles ................................................................. 2. M. gemella

5b. Corolla with midpetaline bands densely sericeous outside at least apically, sometimes throughout.

13a. Pedicel with a thick lobed ring immediately below calyx; stems and leaves densely pubescent or mealy, especially when young; extreme S Taylor ......................................................... 19. M. similis

13b. Pedicel without a thick lobed ring below calyx; stems and leaves glabrous, or tomentose and later glabrescent; mainland or Hainan (M. umbellata rare in Taiwan).

14a. Corolla lilac, pink, or white; seeds glabrous.

14b. Corolla yellow or white; seeds pubescent, at least on margins (unknown in M. caloxantha).

15a. Leaves rhombic, rhombic-ovate, or nearly circular, base cuneate; corolla narrowly campanulate, 3.5–4 cm ................................................................. 11. M. yunnanensis

15b. Leaves cordate, base cordate; corolla funnelform, 2–2.5 cm ...................... 16. M. longipedunculata

16a. Outer 2 sepals shorter than inner ones.

16b. All sepals ± equal.

17a. Inflorescences lax cymes, usually 2- to several flowered, rarely flowers solitary; outer sepals elliptic, glabrous; plants with tubers ........................................ 13. M. hungaiensis

17b. Inflorescences dense umbelliform or corymbose cymes, flowers few to many; outer sepals broadly ovate or broadly elliptic to nearly circular; tubers absent.

18a. Leaves usually nearly circular, rarely broadly ovate; inflorescence a many-flowered corymbiform cyme; corolla 1.4–2(–3.2) cm, yellow, midpetaline bands densely sericeous ........................................ 18. M. boisiana

18b. Leaves usually ovate or ovate-oblong to oblong-lanceolate; inflorescence a few- to many-flowered umbelliciform cyme; corolla 2.5–5.5 cm, white (or ?yellow), midpetaline bands pubescent only at apex ...................... 12. M. umbellata

19a. Woody climber, pubescent to tomentose (older parts glabrous); corolla 1.4–2(–3.2) cm, midpetaline bands sericeous throughout their length ........................ 18. M. boisiana

19b. Herbaceous twiner, subglabrous or glabrescent (petioles pilose apically); corolla 3–4 cm, midpetaline bands hairy at apex only.

20a. Leaf blade deeply 3-lobed, 3–3.5 cm; petiole 1.3–2.2 cm; sepals 6–7 mm, all obovate ................................................................. 14. M. caloxantha

20b. Leaf blade entire, cordate, 5–7 cm; petiole 3–6 cm; sepals ca. 10 mm, outer 2 elliptic, inner 3 obovate ......................................................... 15. M. cordata


篱栏网 li lan wang

Evolvulus hederacea N. L. Burman, Fl. Indica 77. t. 30, f. 2. 1768; Convolvulus acetosellifolius Desrussaux; C. chryseides (Ker Gawler) Sprengel; C. dentatus Vahl; C. flavus Willdenow; C. lapathifolius Sprengel; Ipomoea acetosellifolia (Desrussaux) Choisy; I. chryseides Ker Gawler; I. dentata (Vahl) Roemer & Schultes; I. subtriflora Zollinger & Moritz; Lepistemon glaber Handel-Mazzetti; L. muricatum Spanoghe; Merremia chryseides (Ker Gawler) H. Hallier; Merremia convolvulacea Dennstedt ex H. Hallier.

Herbs, twining or prostrate; axial parts often minutely tuberculate. Stems glabrous or sparsely hirsute, rooting at nodes. Petiole 0.5–5 cm, glabrous or pubescent; leaf blade cordate-ovate, 1.5–7.5 × 1–5 cm, subglabrous to sparsely puberulent, base cordate or broadly cordate, margin entire, irregularly crenate, or 3-lobed. Inflorescences (1-) or few to many flowered, umbelliform, cymose in fruit; peduncle (0.3–)0.8–5 cm, thicker than petiole; bracts early deciduous, narrowly obovate. Pedicel 2–5 mm. Sepals broadly obovate to spatulate or oblong, reflexed in fruit, unequal; outer 2 sepals 3.5–4 mm; inner 3 ca. 5 mm, glabrous, apex emarginate and distinctly mucronate, mucro directed outward. Corolla yellow, campanulate, 6–10 mm, outside glabrous, inside villous basally. Stamens ca. as long as corolla; filaments sparsely villous basally. Ovary globose, glabrous; stigma globose. Capsule depressed globose or broadly conical, 5–6 mm, reticulate (but not coarsely) wrinkled. Seeds trigonous-globose, 2.5–3.5 mm, puberulent to glabrous or woolly along angles and at hilum. 2n = 30*.

Scrub, grassy roadsides in tropical areas; 100–800 m. Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Taiwan, Yunnan [Bangladesh, Cambodia, India, Indonesia, Japan (Ogasawara and Ryukyu Islands), Laos, Malaysia, Myanmar, Nepal, New Guinea, Pakistan, Philippines, Sri Lanka, Thailand, Vietnam; Africa, N Australia, Pacific Islands].

Used medicinally for treating acute tonsillitis.


金花鱼黄草 jin hua yu huang cao

Convolvulus gemellus (N. L. Burman) Roth; I. polyantha Miqel.

Herbs, twining or prostrate; axial parts smooth,
apressed yellowish pubescent. Stems often rooting at nodes and internodes. Petiole 1.5–6 cm, rarely minutely tuberculate; leaf blade often ovate, 2.5–6.5 × 1.5–4.3 cm, glabrous or short pilose, base broadly cordate, proximal margin entire, undulate or coarsely crenate, sometimes 3-lobed, apex ± attenuate, mucronulate. Inflorescences umbelliform or forked with short racemelike branches, few flowered; peduncle 2.5–10 cm; bracts early deciduous, minute. Pedicel 3–6 mm. Sepals broadly ovate to ± circular, ± unequal, margin scarious, emarginate, slightly mucronulate or not, slightly enlarged in fruit; outer 2 abaxially ± pilose, 4–6 mm; inner 3 subglabrous, 6–7 mm. Corolla yellow, campanulate to funnelform, 1.5–2 cm, midpetaline bands dark, glabrous outside; limb shallowly 5-lobed; lobes emarginate and mucronulate. Filaments pubescent basally. Ovary glabrous. Capsule depressed-globose, ca. 7 mm, coarsely wrinkled. Seeds trigonous, dark gray or brownish puberulent. 2n = 58.

Thickets, roadsides, waste places; 0–200 m. Taiwan ['Cambodia, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam; Australia].


海南山猪菜 hai nan shan zhu cai

Herbs twining. Stems dull yellow hisurate. Petiole 1.5–3 cm, sparsely villous; leaf blade ovate, 3.5–7.5 × 2–4 cm, glabrous, base cordate, margin entire, apex acute or acuminate, mucronulate. Inflorescences few to many flowered; peduncle 2–3.5 cm, glabrous; bracts persistent, ovate, concave, 3–4 mm, apex acuminate. Pedicel slender, 0.5–1.5 cm. Sepals unequal, glabrous, apex obtuse and mucronulate; outer 2 sepals 3–5 mm; inner 3 ca. 6 mm, margin purplish, apex obtuse. Corolla pale yellow or whitish, broadly funnelform, 0.9–1.1(–1.8) cm, midpetaline bands dark veined, glabrous outside. Stamens included; filaments dilated and pubescent basally. Ovary glabrous. Capsule broadly ovoid to globose, 6–7 mm, thinly papery, glabrous. Seeds brownish black, trigonous-ellipsoidal, ca. 3 mm, glabrous or sparsely flocose at margin and hilum.

Open grasslands, cultivated fields, roadsides, thickets, forest margins; 0–1000 m. Guangdong, Guangxi, Taiwan, Yunnan [India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam; N Australia].

Used medicinally to treat arthritis.


肾叶山猪菜 shen ye shan zhu cai

Evolvulus emarginatus N. L. Burman, Fl. Indica 77. 1768; Convolvulus reniformis Roxburgh; Ipomoea reniformis (Roxburgh) Choisy.

Herbs perennial, prostrate; axial parts sparsely hirtellous or glabrescent. Stems rooting at nodes, becoming tuberculate. Petiole 0.2–3.7 cm; leaf blade reniform to broadly ovate, 0.5–3.5 × 0.6–3.5 mm, glabrous or sparsely appressed pilose, base cordate, margin entire or coarsely crenate, apex obtuse to broadly rounded or slightly emarginate. Inflorescences sessile, 1–3-flowered; bracts unequal, ovate to linear, pubescent, apex acute. Pedicel 2–4 mm. Sepals obovate to circular or subquadrate, ± pubescent abaxially, margin long ciliate; outer 2 sepals 2.5–3.5 mm, apex obtuse, hoodlike and distinctly mucronate; inner 3 sepals 3–6 mm, deeply emarginate. Corolla yellow, tubular-campanulate, 5–9 mm, midpetaline bands distinctly 5-veined, purplish tinged outside, inside pubescent basally; limb slightly 5-lobed. Filaments pubescent basally. Ovary glabrous. Capsule enclosed by persistent calyx, brown-black, ± globular, 5–6 mm, longitudinally grooved, glabrous, apiculate. Seeds grayish brown, ca. 2.5 mm, glabrous. 2n = 30.

Weedy in fields, roadsides, grasslands, on clay to sandy soils, forest floors; 0–200 m. Guangdong, Hainan [India, Indonesia, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam; Africa].


指叶山猪菜 zhi ye shan zhu cai

Ipomoea quinata R. Brown, Prodr. 486. 1810; Convolvulus quinatus (R. Brown) Sprengel; I. pentactylis Choisy.

Herbs twining; axial parts ± hisurate with erect yellowish hairs, or glabrous. Stems slender, to 2 m. Petiole 1–2.5 cm; leaf blade palmately compound; leaflets 5, linear, lanceolate, or oblong-elliptic, 1.5–4.2 cm × 2.5–15 mm, often glabrous, sometimes hisurate along midvein and margin abaxially, base attenuate, margin entire, apex obtuse and mucronulate. Pedicel 3–6(–9) mm. Flowers 1 or 2; peduncle shorter to
longer than leaves, glabrous or hirsute basally; bracts ovate-deltate, 3–4 mm, apex acuminate. Sepals elliptic to ovate-oblong, unequal; outer 2 sepals 8–10 mm; inner ones ca. 1.5 cm, glabrous, apex obtuse, mucronulate. Corolla white, campanulate or funnelform, ca. 4 cm. Filaments inserted 6–7 mm above base of corolla. Ovary glabrous. Capsule ovoid, 1–1.3 cm, apex ± acuminate. Seeds black, 4–6 mm, pale yellow pubescent.

Open mountain slopes. Guangxi, Hainan, Hong Kong, Taiwan, Yunnan [Indonesia, Myanmar, New Guinea, Philippines, Thailand; N Australia].

Van Ooststroom (Fl. Malesiana, ser. I.: 4: 447. 1953) expressed doubt that plants occurring in Myanmar, S China, and southeast Asia are conspecific with those in New Guinea and Australia. We applied the name provisionally, pending consideration of the range of variation in populations throughout the region, and examination of type specimens for the names involved.


多裂鱼黄草 duo lie yu huang cao

Twining, semi-woody; axial parts ± yellowish spreading hirsute. Stems woody basally, pubescent, herbaceous when young. Petiole 2.5–7 cm; leaf blade palmately 5–7-doubly to base; segments lanceolate, middle 2.5–10 × 0.5–3 cm, lateral ones smaller, glabrous or pubescent along veins abaxially, margin coarsely dentate to irregularly pinnately lobed, apex mucronulate. Inflorescences 1–5-flowered; peduncle 5–10 cm. Pedicel 1.5–2 cm, thicker distally, minutely tuberculate, glabrous. Sepals ovate-lanceolate, subequal, 2–2.5 cm, enlarged and leathery in fruit, glabrous, margin narrowly scarious, apex acute, mucronulate. Corolla white, with purple-red throat, funnelform, 2.5–5.5 cm, glabrous outside; limb ± 5-angled. Stamens ca. 1.1 cm; anthers spirally twisted. Ovary glabrous. Capsule straw colored, ± globose, ca. 1.2 cm, papery. Seeds black-brown, trigonous-ovoid, ca. 7 mm, glabrous.

Roadsides, thickets, forests; (100–)400–1600 m. Guangdong, Guangxi, Hainan, Yunnan [India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

Used medicinally to treat bladder infections and stomach aches.


北鱼黄草 bei yu huang cao

Herbs twining, subglabrous. Stems stricate. Petiole 2–7 cm; leaf blade ovate-cordate, 3–13 × 1.7–7.5 cm, base cordate, margin entire or undulate, apex attenuate-acuminate or caudate. Inflorescences (1–)3–7(–20)-flowered; peduncle often shorter than pediole, 1–6.5 cm, angular or narrowly winged; bracts linear, small. Pedicel 3–15 mm, thicker distally. Sepals elliptic, subequal, 5–7 mm, glabrous, distinctly subulate-mucronate. Corolla pink, pale purplish or occasionally white, campanulate, 1.2–1.9 cm, glabrous; limb 5-lobed, lobes delinate or nearly circular. Stamens included; anthers not twisted. Ovary glabrous. Capsule ± globose, broadly ovoid, or conical-ovoid, 5–14 mm, apex rounded or acute. Seeds ellipsoid-trigonous or oblong-trigono-ovoid, 3–8 mm, glabrous, puberulent, scurfy-scyi, or with swollen-based hairs, apex obtuse or acute.

Roadsides, open sunny places; 600–2900 m. Anhui, Gansu, NW Guangxi, Guizhou, Hebei, Hunan, Jiangsu, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Mongolia, NE Russia].

Used medicinally to treat trauma and external infections.

1a. Seeds glabrous; capsule broadly ovoid or subglobose.
2a. Seeds 3–4 mm; capsule subglobose, apex rounded ....................... 9a. var. sibirica
2b. Seeds 4–7 mm; capsule broadly ovoid, apex acute ......................... 9b. var. macrosperma
1b. Seeds with indumentum; capsule conical-ovoid.
3a. Seeds 6–8 mm, densely covered by swollen-based hairs; capsule 0.9–1.4 cm high; corolla pink ......................... 9c. var. vesiculosa
3b. Seeds 3–4 mm, whitish puberulent or ± densely scaly; capsule mostly smaller; corolla white or pale purplish.
4a. Seeds densely scurfy-scyi; corolla often white .................. 9d. var. trichosperma
4b. Seeds densely whitish puberulent; corolla pale purplish ............ 9e. var. jiuhuaensis
9a. Merremia sibirica var. sibirica
Liaoning, Shaanxi, Sichuan, Yunnan.

Lanceolate, subequal, 1–1.5 cm, ± hirsute to glabrous 1(–3)-flowered; peduncle ca. 5 mm; bracts ovate. Sepals apex rounded to acute, mucronulate. Inflorescences usually rounded, shallowly cordate or broadly cuneate, margin entire, sparsely hirsute, more densely so along veins, ciliate, base cuneate, apex abruptly acuminate or acute, rarely obtuse and mucronulate. Inflorescences 1- to many flowered; peduncle 2–12.5 cm; bracts scale-like, 2–3 mm, pubescent. Pedicel 7–10 mm, thicker than peduncle, glabrous. Sepals unequal; outer 2 obovate-oblong, 0.8–1.2 cm, abaxially pubescent, mucronulate; inner ones obovate or elliptic, 1.3–1.4 cm, apex obtuse. Corolla lilac or pink to white, narrowly campanulate, 3.5–4 cm; limb shortly 5-lobed; lobes dull yellow ciliate, mucronulate. Stamens unequal; filaments fimbriate-scapulose basally; anthers twisted. Ovary glabrous. Capsule ovoid or globose, ca. 1 cm. Seeds trigonous-ovoid, glabrous. Fl. Sep-Oct, fr. Oct-Dec.

- Hillside thickets; ca. 100 m. Guangxi (Yongning Xian).


**蓝花土瓜** (*lan hua tu gua*)

Herbs perennial, with fusiform tubers; axial parts densely pubescent. Stems twining, striate. Petiole 0.4–2 cm; leaf blade rhombic, rhombic-ovate, or nearly circular, 3–10.5 × 1.5–10 cm, densely dull yellow sericeous, glabrescent, base cuneate, margin entire, apex abruptly acuminate or acute, rarely obtuse and mucronulate. Inflorescences 1- to many flowered; peduncle 2–12.5 cm; bracts scale-like, 2–3 mm, pubescent. Pedicel 7–10 mm, thicker than peduncle, glabrous. Sepals unequal; outer 2 obovate-oblong, 0.8–1.2 cm, abaxially pubescent, mucronulate; inner ones obovate or elliptic, 1.3–1.4 cm, apex obtuse. Corolla lilac or pink to white, narrowly campanulate, 3.5–4 cm; limb shortly 5-lobed; lobes dull yellow ciliate, mucronulate. Stamens unequal; filaments dilated basally, pubescent. Ovary glabrous. Capsule oblong, 7–9 mm. Seeds black, ca. 5 mm, glabrous.

- Grassy, shrubby mountain slopes, thickets, forests; 1400–3000 m. Sichuan, Yunnan.

In the original description, the corolla of *Merremia yunnanensis* was said to be pale blue, but it is described here as lilac, pink, or white. Specimens at A and K, apparently this species, have labels indicating corolla colors as pale yellow, pale yellow tinged rose, canary yellow, or even blue (*Wilson 4183* at K). Yellow or white corollas are common in *Merremia*, but lilac, pink, and rose are unusual, and blue is unheard of. Such a wide variation of corolla color in a single species is anomalous in the genus and warrants further investigation. Until a critical study is made, the original concept for *M. yunnanensis* is here maintained. It is possible that some early collections have incorrect label data with respect to flower color.

1a. Corolla pink to white; leaves rhombic or rhombic-ovate ................................. 11c. var. *pallescens*
1b. Corolla lilac; leaves broadly rhombic to nearly circular.
2a. Leaf blade densely dull yellowish sericeous ................................. 11a. var. *yunnanensis*
2b. Leaf blade subglabrous or sparsely sericeous ................................. 11b. var. *glabrescens*

11a. Merremia yunnanensis var. *yunnanensis*

**蓝花土瓜 (原变种)** (*lan hua tu gua (yuan bian zhong]*)


- Hillside thickets; ca. 100 m. Guangxi (Yongning Xian).


**蓝花土瓜** (*lan hua tu gua*)
Merremia umbellata

Merremia orientalis

Petiole 1–4(–6) cm; leaf blade ovate, ovate-oblong, or oblong-glabrous, with milky sap. Stem striate, rooting at nodes. Inflorescences umbelliform cymes, few to many flowered; peduncle 2–6 cm, glabrous; bracts scalelike, ca. 1 mm. Pedicel 0.5–2 cm, thicker than peduncle, glabrous. Sepals elliptic, unequal, outer 2 sepsals 0.7–1.4 cm, inner ones 1.2–1.5 cm, glabrous. Corolla yellow, funnelform, 3.5–6 cm, midpetaline bands pubescent apically. Stamens slightly unequal; filaments pubescent basally. Ovary conical, glabrous. Capsule oblong, 1–1.3 cm. Seeds 5.5–7 mm, densely dark brown tomentose.

12. Merremia yunnanensis

Herbs perennial, twining, with globose or ovoid tubers. Stems striate, glabrous. Petiole 0.8–3.5 cm, pubescent; leaf blade elliptic, ovate, oblong, or narrowly elliptic to linear, 2.5–11.5 × 0.4–0.7–5 cm, glabrous, sparsely ciliate only at base, base obtuse, cuneate, or shallowly cordate, margin entire or minutely erose, apex obtuse, emarginate, acuminate, or acute, mucronulate. Inflorescences lax dichasial cymes, 2- to several flowered, rarely flowers solitary; peduncle 2–6 cm, glabrous; bracts scalelike, ca. 1 mm. Pedicel 0.5–2 cm, thicker than peduncle, glabrous. Sepals elliptic, unequal, outer 2 sepsals 0.7–1.4 cm, inner ones 1.2–1.5 cm, glabrous. Corolla yellow, funnelform, 3.5–6 cm, midpetaline bands pubescent apically. Stamens slightly unequal; filaments pubescent basally. Ovary conical, glabrous. Capsule oblong, 1–1.3 cm. Seeds 5.5–7 mm, densely dark brown tomentose.

13. Merremia hungaiensis

Herbs perennial, twining, with globose or ovoid tubers. Stems striate, glabrous. Petiole 1–4(–6) cm; leaf blade ovate, ovate-oblong, or oblong-lanceolate, 3.5–13.5 × 1.3–10 cm, softly whitish puberulent, adaxially more densely so, base elliptic, ovate, or acutete, margin entire, apex obtuse, emarginate, acuminate, or acute, mucronulate. Inflorescences umbelliform cymes, few to several flowered, rarely flowers solitary; peduncle 2–6 cm, glabrous; bracts scalelike, ca. 1 mm. Pedicel 0.5–2 cm, thicker than peduncle, glabrous. Sepals elliptic, unequal, outer 2 sepsals 0.7–1.4 cm, inner ones 1.2–1.5 cm, glabrous. Corolla yellow, funnelform, 2.5–5.5 cm, midpetaline bands with a strip of whitish pubescence apically; limb slightly lobed. Stamens included; anthers not twisted. Ovary glabrous or sparsely pubescent apically. Capsule conical-ovoid, 0.7–1.3 cm × 7–8 mm, glabrous or sparsely pubescent apically, apiculate. Seeds ca. 5 mm, densely pubescent long pubescent.

Roadsides, forested valleys, thickets; 0–1600 m. Guangdong, Guantong, Guangxi, Hainan, Taiwan, Yunnan [Bangladesh, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam; E Africa, N Australia, Pacific Islands].

Used in Guangxi for treating infections.

线叶山土瓜 xian ye shan tu gua


Leaf blade narrowly elliptic to linear, 5–10 × 0.4–1.5 (–3) cm.

- Roadsides, thickets; 1200–2500 m, Sichuan, Yunnan.

The roots are used externally to treat scabies.


美花鱼黄草 mei hua yu huang cao


Herbs perennial, prostrate (and ?twining), 1–3 m, almost completely glabrous. Petiole 1.3–2.2 cm, pilose apically; leaf blade deeply 3-lobed, 3.5–2–2.5 cm, base cordate; basal lobes entire or undulate-lobate, median lobe longest, lanceolate, long attenuate. Inflorescences 3-5-flowered; peduncle 2.5–4.5 cm; bracts 2, minute scales. Pedicel 6–13 mm. Sepals obovate, concave, subequal, 6–7 mm, glabrous, margin thinner, sometimes recurved above middle, apex rounded to emarginate, mucronulate. Corolla bright yellow, broadly funnelform, 3–4 cm, midpetaline bands hairy at apex only. Stamens unequal; anthers straight. Pistil equal to longest stamens, included; ovary broadly ovoid, 2-locular, glabrous; ovules 4. Stigma 2-globose. Fruit unknown. Fl. Sep.

- Dry exposed rocky slopes; ca. 1400 m, Yunnan (Yongping Xian).

Known only from the type collection, made by George Forrest in 1905 in the valley of the Mekong at “the crossing of the Teng-yueh and Dalifu road.” On first sight, the deeply trilobate leaves of *Merremia caloxantha* suggest *M. gemelata* and *M. hederacea* of sect. *Merremia*. However, the anthers that remain straight at dehiscence, the much larger corollas, and the corolla pubescence confined to the apex of the weakly delineated midpetaline bands indicate that this species may belong to sect. *Xanthips*. Further collections are needed to elucidate its relationships.


心叶山土瓜 xin ye shan tu gua

Herbs twining. Stems striate, glabrescent. Petiole 3–6 cm, pilose distally; leaf blade cordate, 5–7 × 3.5–5.5 cm, base cordate, margin entire or undulate, apex abruptly acuminate or long acuminate. Inflorescences 3–9-flowered; peduncle 6–16 cm, glabrescent; bracts scalelike, 1–1.5 mm. Pedicel 1–2.5 cm, glabrous. Sepals subequal, ca. 1 cm, margin scarios, glabrous; outer 2 elliptic; inner ones obovate, emarginate and with micro. Corolla yellow, funnelform, 3.5–4 cm, with distinct midpetaline bands with a tuft of hairs apically; limb shallowly 5-lobed; lobes triangular. Stamens unequal; filaments papillate pubescent basally. Ovary conical. Capsule ± globose. Seeds brown, woolly on margin.

- Roadside and riverside thickets; 1400–1800 m, Sichuan, Yunnan.


长梗山土瓜 chang geng shan tu gua


Herbs climbing, ca. 1.7 m tall; axial parts mostly glabrous. Stems twisted. Petiole 5–15 cm; leaf blade cordate, basal leaves ca. 15 × 14 cm, upper leaves 5–6 × 4–5 cm, sparsely puberulent to glabrescent, base cordate, margin undulate, short ciliate, apex long acuminate. Inflorescences 6–17-flowered; peduncle 6–12 cm, pale yellowish villous distally; bracts and bracteoles persistent, ca. 2.5 mm. Pedicel 1.5–3 cm, thickened distally, pale yellow villous. Sepals purple-brown, elliptic, unequal; outer 2 ca. 7 × 5 mm; inner ones ca. 9 × 6 mm, abaxially glabrous or pale yellow villous, margin scarios, apex rounded or emarginate. Corolla white or pale rose, funnelform, 2.2–5 cm; limb with 5 short triangular lobes, pilose apically. Stamens included, inserted below middle of corolla tube; filaments pilose basally; anthers oblong, ca. 3 mm. Ovary glabrous. Capsule brown, ± globose, ca. 1.2 cm. Seeds black, 5–6 mm, glabrous.

- Open fields, thickets in valleys; 500–1000 m, Guangxi, Yunnan.


疣萼鱼黄草 you e yu huang cao

Herbs twining. Stems ca. 2 m, axillary buds and lower stems grayish white pubescent, glabrescent distally. Petiole 3–8 mm, pubescent; leaf blade cordate or ovate, 1.5–5 × 1–3.5 cm, adaxially sparsely puberulent, base cordate, margin entire, apex short acuminate, mucronulate. Inflorescences 1–4-flowered; peduncle slender, 1–2.2 cm, whitish pubescent basally; bracts ovate, glabrous. Pedicel 5–7 mm, thicker apically, verruculose. Sepals unequal; outer 2 oblong to ovate-oblong, 5–7 mm, abaxially verruculose, apex rounded to shallowly emarginate; inner 3 oblong to obovate-oblong, 8–10 mm, apex deeply emarginate or irregularly 2-lobed. Corolla yellow, funnelform, 1.8–2.2 cm, midpetaline bands distinct, ?glabrous. Stamens included, subequal; filaments with scalelike fimbriate appendages basally; anthers spirally


Leaf blade elliptic, ovate, or oblong, 2.5–11.5 × 1.2–5 cm.

- Grassy, shubby mountain slopes, pine forest floors; 1200–3200 m, Guizhou, Sichuan, Yunnan.

Leaf blade elliptic, ovate, or oblong, 2.5–11.5 × 1.2–5 cm.

- Thickets on hillsides: ca. 100 m. Guangxi (Yongning Xian).

18. **Merremia boisiana** (Gagnepain) van Ooststroom, Blumea 3: 343. 1939.

金钟藤 jin zhong teng

Twining woody; axial parts glabrous or grayish yellow tomentose. Stems terete, fistulose. Petiole 4.5–12 cm; leaf blade nearly circular, rarely broadly ovate, 9.5–15.5 × 7–14 cm, glabrous or puberulent along veins abaxially, base cordate, margin entire, apex abruptly acuminate or cuspidate. Inflorescences corymbose cymes, many flowered; peduncle 5–24(–35) cm, terete and glabrous basally, slightly appplanate distally, dull yellow pubescent, sometimes entirely grayish yellow tomentose; bracts early deciduous, narrowly triangular, 1.5–2 mm, densely yellowish pubescent. Pedicel 1–2 cm, enlarged in fruit. Sepals ± equal or outer ones slightly shorter, 6–13 mm; outer 2 broadly ovate, abaxially dull yellow pubescent; inner 3 nearly circular, glabrous, apex obtuse. Corolla yellow, broadly funnelform or campanulate, 1.4–2 cm, midpetaline bands yellowish sericeous outside; limb undulate. Stamens included; filaments with 2 longitudinal pubescent lines below insertion; anthers belatedly twisted. Ovary conical, glabrous. Capsule brown, fading to yellow apically, conical-ovoid, 1–2 cm, glabrous. Seeds twisted. Ovary conical, glabrous. Capsule unknown. Fl. Sep-Oct.

18a. **Merremia boisiana** var. **boisiana**

金钟藤 (原变种) jin zhong teng (yuan bian zhong)


Branchlets, petioles, leaves, peduncles, and pedicels glabrous or dull yellow pubescent. Outer sepals 6–7 mm. Corolla 1.4–2 cm.

Moist areas in forests; 100–700 m. Guangxi, Hainan, Yunnan [Indonesia, Laos, Vietnam].

The stem is used medicinally to treat anemia.

18b. **Merremia boisiana** var. **fulvopilosa** (Gagnepain) van Ooststroom, Blumea 3: 344. 1939.

黄毛金钟藤 huang mao jin zhong teng


Branchlets, petioles, leaves, peduncles, and pedicels grayish yellow pubescent. Inside; limb undulate. Stamens included; filaments with 2 lines of hairs below insertion; anthers spirally twisted. Ovary conical, glabrous. Capsule brown, fading to yellow apically, conical-ovoid, 1.1–2 cm, glabrous. Seeds broadly trigonous-ovoid, ca. 5 mm, densely scaly pubescent along angles.

Forests; 100–1300 m. Guangxi, Hainan, Yunnan [Indonesia, Laos, Vietnam].

Gagnepain’s protologue and also van Ooststroom’s diagnosis for *Merremia boisiana* var. *fulvopilosa* (Blumea 3: 344. 1939) state that this variety is distinguished by the rufous pilose to tomentose indumentum, the shorter and more crowded inflorescence branches, and the circular to transversely elliptic, grayish pubescent sepals that are 5–7 mm. Chinese specimens differ significantly in these characters, and it is possible that they are a different taxon.

The entire plant is used medicinally to treat arthritis.


红花姬旋花 hong hua ji xuan hua

*Convolvulus distillatorius* Blanco; *Merremia distillatoria* (Blanco) Merrill, p.p.

Climbers or sprawlers, perennial. Axial parts densely gray or rust-colored pubescent or mealy when young, later glabrescent. Stems terete, fistulose. Petiole 3–17 cm; leaf blade broadly ovate to circular, 8.5–18(–20) × 8–16(–20) cm, densely rust or grayish tomentose when young, later glabrescent adaxially, base cordate, apex abruptly acuminate. Pedicels 30(–60 ?) cm, branched near apex. Pedicel thickened distally, with a thick lobed ring below sepals, 2–3 cm, 4–4.5 cm in fruit. Sepals obovate to broadly elliptic or circular, concave, ± equal, 1.5–1.8 cm, glabrous, margin membranous, apex obtuse or slightly retuse. Fruiting sepals to 2 cm, forming a cup around capsule. Corolla reddish (white with a tinge of red, according to Elmer’s protologue), broadly funnelform, 3–4 cm, midpetaline bands pubescent apically; limb slightly 5-lobed. Stamens 1.6–1.8 cm; filaments with 2 lines of hairs below insertion; anthers spirally twisted. Ovary conical, glabrous. Style ca. 2.8 cm. Fruit ovoid, 1.5–1.8 cm; valves at first brown-black, later straw colored. Seeds black, ca. 6 mm, tomentose-villosus.

Taiwan (Hengchun Peninsula) [Philippines].
Chang Ching-en (Fl. Taiwan 4: 385. 1978) recorded *Merremia similis* from the extreme southern portion of Taiwan on the Hengchun Peninsula. This is the first record of the species outside the Philippines.

Van Ooststroom (Blumea 3: 360–361. 1939) has discussed the ambiguity surrounding the taxon Blanco described as *Convolvulus distillatorius*, and whether it was indeed identical with the one Merrill had before him when he made the combination *Merremia distillatoria*. Specimens cited by Merrill disagree in several points with Blanco’s original description. Van Ooststroom therefore set aside this ambiguous name and took up Elmer’s later-published *M. similis*, for which the typification and original description are quite clear. The correct application of binomial requires further study, including access to types not presently available.