18. ARGYREIA Loureiro, Fl. Cochinch. 1: 95, 134. 1790.

银背藤属 yin bei teng shu

Lettsomia Roxburgh; Moorcroftia Choisy.

Shrubs, scandent or lianas. Stems woody. Leaves petiolate, entire, sometimes silvery sericeous abaxially. Inflorescences axillary, rarely terminal, in cymes, or loose or compact capitula, few to many flowered; bracts persistent or early deciduous, small or large. Sepals persistent, herbaceous or \pm leathery, pubescent abaxially, glabrous and often red adaxially, \pm enlarged and reflexed in fruit. Corolla purple, red, pink, or white, campanulate, funnelform, or tubular; limb subentire to deeply 5-lobed, with 5 distinct, mostly pubescent midpetaline bands. Stamens inserted near base of corolla, included or exserted; filaments filiform, base dilated, often pubescent or glandular; pollen globular, pantoporate, finely spiny. Disc ringlike or cupular, margin entire or shallowly 5-lobed. Ovary 2- or 4-loculed, 4-ovuled, pubescent or glabrous. Style 1, filiform, included or exserted; stigma capitate, 2-lobed or 2-globular. Berry red, purplish, orange, or yellowish, globose or ellipsoid, fleshy, mealy, or leathery. Seeds 4 or fewer, rarely pilose at hilum.

About 90 species: mainly tropical Asia, with one species in Australia (Queensland); 22 species in China.

No monograph of *Argyreia* exists, and the mainland Asian species have not been studied for a contemporary flora or regional revision. A comparison of the Chinese material with those from regions to the south reveals that a profusion of names has developed for what appears to be a significantly smaller number of taxa. It was not possible to sort out the nomenclature for the species involved due to the lack of access to type material and the exceedingly complex literature dealing with *Argyreia*. Therefore, a conservative approach is taken, and nearly all of the taxa described from China are maintained, and possible conspecific taxa are pointed out.

The flowers of Argyreia marlipoensis are unknown. It has not been possible to place the species in a key that relies heavily on floral characters. One cultivated species, A. nervosa, is included in the key but not treated further.

1a. Corolla deeply 5-lobed; stamens exserted.
2a. Cymes capitate; bracts ± persistent, broadly obovate, spatulate, or circular, abaxially tomentose;
flowers sessile or nearly so
3a. Leaf blade elliptic to ovate, usually silvery sericeous abaxially, base rounded or truncate, rarely
shallowly cordate; fruiting sepals with recurved or crinkled apices
3b. Leaf blade broadly ovate to nearly circular, dull yellowish tomentose abaxially, base distinctly
cordate, rarely subtruncate; fruiting sepals with flat or slightly revolute apices.
4a. Inflorescences usually 4–6-flowered; peduncle 1.5–2 cm; sepals ovate-oblong, 6–8 mm,
subequal; Taiwan
4b. Inflorescences usually 9–40-flowered; peduncle 2.5–7 cm; sepals broadly ovate-circular,
ca. 5 mm, unequal, outer 3 longer; Guangxi, Yunnan
1b. Corolla entire or shallowly lobed; stamens included.
5a. Bracts early deciduous.
6a. Leaf blade ovate to circular, base cordate.
7a. Bracts 3.5–5 cm, ovate, oblong, or elliptic; leaf blade densely sericeous-tomentose abaxially;
corolla 6–6.5 cm
7b. Bracts 0.5–1 cm, linear to oblong; leaf blade sparsely strigose abaxially; corolla 2.8–5.5 cm.
8a. Sepals \pm equal, broadly elliptic to ovate, 9–11 mm, densely golden woolly abaxially;
corolla funnelform, 2.8–4 cm, purple-red
8b. Sepals unequal, outer 3 shorter, ovate-oblong, 4–5 mm, abaxially ± yellowish sericeous;
corolla funnelform, flaring strongly from base, 4–5.5 cm, purple
6b. Leaf blade ovate to ovate-elliptic, oblong to lanceolate, base broadly cuneate to rounded or truncate. 9a. Peduncle more than 10 cm.
10a. Leaf blade yellowish hispid or strigose abaxially; outer sepals elliptic, ca. 4 × 3 mm, abaxially
hispid; fruit 8–10 mm in diam., dark red
10b. Leaf blade densely silvery sericeous abaxially; outer sepals ovate, ca. 7 × 5 mm, abaxially
silvery sericeous; fruit 6–8 mm in diam., red
9b. Peduncle 0.5–7 cm.
11a. Leaf blade densely strigose adaxially
11b. Leaf blade glabrous or sparsely strigose adaxially.
12a. Corolla pale violet or pink, 5–6.5 cm; pedicel 5–15 mm; outer 2 sepals broadly elliptic,
8–10 mm, inner 3 oblong, shorter, slightly emarginate
12b. Corolla white, ca. 4.8 cm; pedicel ca. 2.5 mm; sepals all ovate-oblong, ca. 4.5 mm
5b. Bracts persistent.
13a. Bracts 2–13 mm.

14a. Inflorescences few to many flowered; lianas with stout stems; anthers sagittate, 4.5–5.5 mm	1.
15a. Leaf blade narrowly oblong or narrowly oblong-lanceolate; petiole 1–2 cm; peduncle 1–3 cm; filaments 1.7–2.2 cm	11 1 monalagnsis
15b. Leaf blade ovate-circular; petiole 6.5–7 cm; peduncle 10.5–13 cm; filaments ca.	14. A. mongiaensis
1.1 cm	18. A. fulvovillosa
14b. Flowers solitary; herbs or scandent shrubs with slender stems; anthers oblong, 2.5–4 mm.	J
16a. Leaf blade linear, $9-13 \times 0.7-1$ cm; sepals ovate, ca. $10 \times 5-6$ mm; corolla pale	
purple, 4–4.5 cm	15. A. lineariloba
16b. Leaf blade ovate to ovate-deltate, $3-4.5 \times 1.5-2.5$ cm; sepals linear-lanceolate,	
outer ca. 20 × 2–3 mm; corolla red, ca. 7 cm	16. A. baoshanensis
13b. Bracts 15–40 mm.	
17a. Inflorescences long pedunculate, (3–)6–30 cm; bracts ligulate, attenuate-lanceolate,	
or elliptic, both ends acute, or apically attenuate. 18a. Inflorescences to 3-flowered; corolla urceolate-funnelform, 2.5–3.5 cm; sepals	
± equal, broadly ovate to elliptic	9 4 monosperma
18b. Inflorescences many flowered, capitate or cymose; corolla funnelform, 3.5–5.5 cm;	9. 11. monosperma
sepals unequal, outer 3 ovate-lanceolate, lanceolate, ovate-oblong, to oblong.	
19a. Indumentum brown or dull yellow, ± hirsute; inflorescences capitate, dense;	
bracts sessile, elliptic to lanceolate, both ends acute; sepals lanceolate, ovate-	
oblong, to oblong	. 10. A. capitiformis
19b. Indumentum whitish villous; inflorescences cymose; bracts petiolate, ligulate,	17 4
acuminate; outer 3 sepals ovate-lanceolate, inner 2 obovate-elliptic, obtuse	
or ovate, obtuse or acute.	,
20a. Leaf base cordate; sepals ± equal, 1–1.2 cm; indumentum ashy or whitish	7 A wallichii
20b. Leaf base cuneate, rounded, truncate, or shallowly cordate; sepals unequal, outer	7.21. Wallechill
3 larger, 1.2–1.7 cm; indumentum yellowish or pale brownish.	
21a. Corolla 5–7 cm; style to 3.5 cm; fruit globose, 8–10 mm in diam	8. A. pierreana
21b. Corolla 4.2–4.5 cm; style ca. 1.1 cm; fruit ellipsoid, 6–7 × ca. 5 mm	. 11. A. eriocephala

1. Argyreia strigillosa C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 133. 1965.

细毛银背藤 xi mao yin bei teng

Shrubs scandent. Axial parts ± strigose, young ones densely so. Stems pale or dark brown, ± terete. Petiole ca. 6 cm; leaf blade nearly circular, ca. 12 × 11 cm or larger, sparsely strigose, base shallowly cordate, apex obtuse to acute; lateral veins 8-11 pairs. Cymes axillary, few to several flowered; peduncle 5-11 cm or more; bracts early deciduous, oblong-elliptic, ca. 1 cm. Pedicel 8-10 mm. Sepals broadly elliptic to ovate, \pm equal, 9-11 \times 5-6 mm, densely golden woolly abaxially, glabrous and black-brown (in dry specimens) adaxially, apex obtuse to acute. Corolla purplered, funnelform, 2.8-4 cm, midpetaline bands sparsely whitish pilose-strigose; limb shallowly lobed. Stamens and pistil included; filaments ca. 1.4 cm, basally glandular pubescent; anthers oblong, ca. 3 mm. Disc ringlike, ca. 1 mm high. Ovary glabrous. Style ca. 1.4 cm. Fruit unknown. Fl. Oct-Nov.

• Streamside and roadside thickets; 1100-1600 m. S Yunnan.

This species is very similar to specimens from Thailand called *Argyreia thomsonii* (C. B. Clarke) Craib and may prove to be conspecific with it.

2. Argyreia maymyo (W. W. Smith) Raizada, Indian Forester 93: 754. 1967.

思茅银背藤 si mao yin bei teng

Lettsomia maymyo W. W. Smith, Rec. Bot. Surv. India

6: 38. 1914.

Climbers woody; axial parts ± yellowish pilose, later glabrescent. Stems terete. Petiole 6-9.5 cm; leaf blade broadly ovate-cordate, 10–16 × 10.5–13 cm, ± sparsely strigose, base shallowly cordate, apex abruptly acuminate. Inflorescences ± umbellate, 7-15-flowered; peduncle 15-22 cm; bracts early deciduous, attached near middle of pedicel, linear, ca. 5 mm. Pedicel 1–2 cm. Sepals ovate-oblong, unequal; outer 3 4–5 \times ca. 2 mm; inner 2 larger, ± yellowish sericeous abaxially, glabrous adaxially, apex obtuse to rounded. Corolla purple, funnelform, flaring strongly from base, 4-5.5 cm; limb entire to shallowly lobed, midpetaline bands densely whitish sericeous-pilose, otherwise glabrous. Stamens and pistil included; filaments 2-2.5 cm, glandular basally; anthers oblong, 5-6 mm. Pistil capitate, 2-globose; ovary ovoid, glabrous. Style 2.6-3 cm. Fruit ellipsoid, 1-1.4 cm, projecting from persistent (but not enlarged) sepals. Fl. Oct.

Mountain forests; 1500–1800 m. Yunnan (Simao) [N Myanmar].

Argyreia maymyo was not recognized in the Fl. Reipubl. Popularis Sin. account. An examination of Chinese material called in that account A. roxburghii (Wallich) Arnott var. ampla (Wallich) C. B. Clarke reveals that A. maymyo and A. mastersii (Prain) Raizada (as defined here) were included. The two species are readily separated by the ligulate bracts which are lacking in A. maymyo and so prominent in A. mastersii.

3. Argyreia mollis (N. L. Burman) Choisy, Mém. Soc. Phys. Genève 6: 421. 1833.

银背藤 yin bei teng

Convolvulus mollis N. L. Burman, Fl. Indica 44. t. 17. 1768; Argyreia championii Bentham; A. obtecta (Choisy) C. B. Clarke; C. sericeus Linnaeus; Lettsomia championii (Bentham) Bentham & J. D. Hooker; ?Rivea obtecta Choisy.

Lianas; axial parts \pm densely appressed whitish or pale yellow pilose; young parts densely so. Stems twining, to 10 m tall. Petiole 1-6 cm; leaf blade elliptic to oblong, sometimes ovate or lanceolate, $4-15 \times 1.5-7$ cm, tapering at both ends, abaxially densely silvery white or dull yellow sericeoustomentose, adaxially sparsely strigose or glabrous, apex acute or obtuse; lateral veins 9–18(–20) pairs. Cymes 1–5-flowered; peduncle 0.5-2.5(-4.5) cm; bracts early deciduous, obovateoblong, apex obtuse. Pedicel 0.5-1.5 cm. Sepals subequal, densely sericeous-lanose abaxially, enlarged in fruit; outer 2 broadly elliptic, 8-10 mm, apex obtuse; inner 3 oblong, slightly emarginate. Corolla pale violet or pink, funnelform to campanulate, 5-6.5 cm, midpetaline bands appressed pubescent outside; limb ± entire, undulate. Stamens and pistil much shorter than corolla; filaments pilose basally. Ovary glabrous, 4-loculed. Berry red or orange-red, subglobose, 8-10 mm in diam. Seeds 4 or fewer, black, ca. 5 mm. Fl. Aug-Oct, fr. Nov-Feb.

Dense forests in valleys; 300–1800 m. Hainan [Cambodia, India (Andaman Islands), Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam].

The name Argyreia obtusifolia Loureiro (Fl. Cochinch. 134. 1790) was misapplied for A. mollis in Fl. Reipubl. Popularis Sin. and other regional floras, mostly because the protologue is too incomplete to know for certain to what taxon it applies. Loureiro's generic description, however, states explicitly that the corolla is deeply 5-parted and with oblong and reflexed lobes. That description clearly does not apply to A. mollis, which has a funnelform-campanulate, subentire corolla. Material from peninsular Malaysia, Thailand, and lower Myanmar, which is conspecific with that from S China, was recognized by Van Ooststroom and Hoogland (Fl. Malesiana 4: 496. 1953) as A. mollis. When not in flower, A. mollis can easily be confused with A. acuta Loureiro, but the latter has a fruiting calyx with navicular outer sepals corrugate or recurved at the apex, whereas A. mollis has semiglobose or bowl-shaped outer sepals with a uniform curvature to the apex.

4. Argyreia velutina C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 129. 1965.

黄毛银背藤 huang mao yin bei teng

Shrubs scandent. Axial parts ± densely yellowish strigose, glabrescent with age. Branches subterete, becoming striate and densely verruculose. Petiole 2.5-3 cm; leaf blade elliptic to elliptic-ovate, 8–11 × 4–5 cm, leathery, abaxially densely yellowish sericeous-velutinous, adaxially densely strigose, base rounded, apex acute; lateral veins 8-12 pairs. Inflorescences unknown. Infructescences axillary, dichotomous cymes, 2-4-fruited; peduncle 2.5-3.5 cm, ± 4angled. Pedicel to 5 mm in fruit. Sepals elliptic-oblong to narrowly elliptic, strongly concave, subequal, ± parchmentlike, 0.9–1.1 cm × 5–7 mm, sericeous-velutinous abaxially, glabrous adaxially, apex obtuse. Berry depressed globose, ca. 5 × 7 mm. Seeds 2, brownish, semiglobose, apex rounded; hilum nearly circular. Fr. Apr-May.

• Thickets; 1000–1600 m. S Yunnan (Menghai Xian, Pingbian Xian).

5. Argyreia henryi (Craib) Craib, Bull. Misc. Inform. Kew 1914: 9. 1914.

长叶银背藤 chang ye yin bei teng

Shrubs scandent. Stems angular, sparsely appressed hispid. Petiole 3-5 cm, sparsely hispid; leaf blade lanceolate or ovate to ovate-elliptic, 10-20 × 3.5-11 cm, abaxially sparsely hispid or yellowish strigose, adaxially glabrous, base rounded to shallowly cordate, apex acute to obtuse; lateral veins 6-9 pairs. Cymes axillary, many flowered; peduncle (11-)13-15(-19) cm; bracts and bracteoles early deciduous. Pedicel 6-9 mm, short hispid. Sepals hispid outside; outer 2 elliptic, ca. 4 × 3 mm, apex rounded; inner 3 ovate to circular, apex rounded or emarginate. Corolla whitish to lilac, funnelform, 3.5-5.5 cm, midpetaline bands densely yellowish hirsute; limb shallowly 5-lobed. Stamens and pistil included; filaments villous basally. Ovary glabrous. Style ca. 2.5 cm; stigma 2-globular. Berry dark red, globose, 8-10 mm in diam., shiny. Seeds 4 or fewer, dark brown, 5–6 mm, smooth. Fl. Oct-Nov, fr. Nov-Feb.

Open forests in valleys, thickets, forest margins; 700–1000 m. S Yunnan [N Thailand].

- Leaf blade lanceolate to oblong-lanceolate, apex acute, abaxially sparsely hispid 5a. var. henryi
- 1b. Leaf blade ovate to ovate-elliptic, apex rounded to obtuse, mucronulate, abaxially yellowish strigose, slightly shiny

...... 5b. var. *hypochrysa*

5a. Argyreia henryi var. henryi

长叶银背藤 (原变种) chang ye yin bei teng (yuan bian zhong)

Ipomoea henryi Craib, Bull. Misc. Inform. Kew 1914: 423. 1911; *Lettsomia henryi* (Craib) Kerr.

Leaf blade lanceolate to oblong-lanceolate, abaxially sparsely hispid, apex acute.

Open forests in valleys; 1000 m. S Yunnan (Xishuangbanna Xian) [N Thailand].

5b. Argyreia henryi var. **hypochrysa** C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 132. 1965.

金背长叶藤 jin bei chang ye teng

Leaf blade ovate to ovate-elliptic, abaxially yellowish strigose, slightly shiny, apex rounded to obtuse.

- \bullet Thickets, forest margins; 700–900 m. S Yunnan (Mengla Xian).
- **6.** Argyreia marlipoensis C. Y. Wu & S. H. Huang, Fl. Reipubl. Popularis Sin. 64(1): 164. 1979.

麻栗坡银背藤 ma li po yin bei teng

Lianas. Stems dark brown, terete, densely verruculose, sparsely lenticellate and appressed hispid. Petiole 7–9 cm, shiny appressed hispid; leaf blade broadly ovate to circular, 10– 14×9.5 –12 cm, leathery, adaxially sparsely yellowish appressed hispid, base rounded or truncate, apex abruptly caudate-acuminate; lateral veins 7 or 8 pairs. Inflorescences unknown. Peduncle 7.5–12.5 cm in fruit. Sepals reddish purple, ovate, subequal, ca. 1.3×0.9 cm, thick, becoming enlarged, leathery, yellowish villous abaxially, glabrous adaxially, apex acute. Berry ovoid, ca. 1.5 cm. Seed 1, pale dull yellow, flattened ovoid, ca. 1 cm, smooth, glabrous. Fr. Nov.

 Forests on calcareous mountain slopes; ca. 1100 m. SE Yunnan (Marlipo Xian).

7. Argyreia wallichii Choisy, Mém. Soc. Phys. Genève 6: 422, 1833.

大叶银背藤 da ye yin bei teng

Lianas. Stems terete, ± ashy or whitish tomentose. Petiole 5-13 cm, tomentose; leaf blade broadly ovate to almost circular, 10-25 × 6-20 cm, abaxially ashy or whitish tomentose, adaxially glabrous or sparsely strigose, base cordate, apex acute; lateral veins 10-15 pairs, prominent adaxially. Inflorescences subcapitate cymes, 2.5-7 cm in diam., many flowered; peduncle to 2.5 cm; outer bracts 2.5-4 cm, ovate-elliptic, dull yellowish or grayish pubescent abaxially; inner bracts persistent, smaller. Sepals ellipticoblong, \pm equal, 1–1.2 cm \times ca. 5 mm, villous abaxially; fruiting sepals enlarged, rose-red, shiny. Corolla whitish, pink, or purple, tubular-funnelform, 4-7 cm, midpetaline bands sparsely whitish villous; limb entire or shallowly lobed. Stamens and pistil included; filaments villous basally; anthers oblong, ca. 3.5 mm. Ovary glabrous. Style ca. 3 cm. Berry enclosed by calyx, red, globose, 8-9 mm in diam. Fl. Aug-Nov, fr. Nov-Mar. 2n = 30*.

Thickets, forests; 800–1500 m. S Guizhou, SW Sichuan, S Yunnan [Bhutan, NE India, Myanmar, Sikkim, N Thailand].

8. Argyreia pierreana Bois, Rev. Hort. 78: 560. 1906.

东京银背藤 dong jing yin bei teng

Argyreia liliiflora C. Y. Wu; A. seguinii (H. Léveillé) Vaniot ex H. Léveillé; Convolvulus atropurpureus Wallich; C. sphaerocephalus Roxburgh; Ipomoea atropurpurea (Wallich) Choisy; I. sphaerocephala (Roxburgh) D. Don; Lettsomia atropurpurea (Wallich) C. B. Clarke; L. seguinii H. Léveillé.

Lianas. Stems terete, young parts villous, mature stems puberulent or glabrous. Petiole 5–17 cm, pale dull yellow tomentose; leaf blade ovate to circular, $10-22 \times 5.5-21$ cm, glabrous adaxially, dull yellowish tomentose abaxially, base cuneate, rounded, or shallowly cordate, apex \pm acute; lateral veins 10-15 pairs. Inflorescences subcapitate, cymose, 5–6 cm wide; peduncle 2–5 cm, densely dull yellow villous; bracts broadly ovate, 2–3.5 \times 2–3 cm, apex obtuse or acute; inner bracts persistent, red, smaller, \pm pubescent abaxially, glabrous adaxially. Pedicel ca. 7 mm. Sepals rose purplish, ovate to oblong, apex obtuse; outer 3 sepals 1.5–1.7 cm \times ca. 8 mm; inner 2 smaller. Corolla purple, pink, or whitish, funnelform,

5–7 cm; limb 3–4 cm in diam., whitish villous outside. Stamens and pistil included; filaments verruculose at base, anthers oblong to sagittate. Ovary glabrous. Style jointed basally, to 3.5 cm. Berry surrounded by enlarged calyx, red, globose, 8–10 mm in diam. Seeds 4 or fewer, whitish, 4–5 mm, scurfy, glabrescent. Fl. Jul-Oct, fr. Oct-Feb.

Thickets; 500-1400 m. Guangxi, Guizhou, SE Yunnan [Laos, Vietnam].

The whole plant has several medicinal properties.

9. Argyreia monosperma C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 127. 1965.

单籽银背藤 dan zi yin bei teng

Shrubs scandent. Stems angular, young parts densely appressed sericeous pubescent, older ones glabrescent. Petiole 2.5–9.5 cm; leaf blade broadly ovate-elliptic to circular, 6–17 × 3.5–12 cm, abaxially silvery or gravish sericeous, adaxially glabrous, base broadly cuneate, truncate or rounded, rarely obtuse, apex acute; lateral veins 8-12 pairs. Inflorescences axillary, few flowered; peduncle 4-14 cm; bracts attenuatelanceolate, 2-3.3 cm × 5-8 mm, sericeous abaxially, persistent. Pedicel 4–13 mm, angular. Sepals broadly ovate to elliptic, \pm equal, 7-11 \times 5-9 mm, to 1.8 \times 1 cm in fruit, densely sericeous abaxially, glabrous adaxially, apex acute. Corolla purple or pinkish, urceolate-funnelform, 2.5-3.5 cm, apex appressed sericeous outside, otherwise glabrous; limb shallowly lobed. Stamens and pistil included; filaments glandular pubescent basally; anthers oblong. Disc cupular, 0.5-1.5 mm high. Ovary glabrous. Stigma capitate, 2-lobed. Berry reddish purple, ellipsoid, 1.5-1.7 cm. Seed 1, reddish purple, ellipsoid, ca. 1.2×0.9 cm, shiny.

 Valley forests, open thickets; 1000–1800 m. Yunnan (Menghai Xian, Pingbian Xian).

10. Argyreia capitiformis (Poiret) van Ooststroom, Fl. Malesiana, ser. 1, 6(6): 941. 1972.

头花银背藤 tou hua yin bei teng

Convolvulus capitiformis Poiret, Encycl. Suppl. 3: 469. 1814; Argyreia capitata (Vahl) Choisy; A. rufohirsuta H. Léveillé; A. verrucosohispida Y. Y. Qian; C. capitatus Vahl; Ipomoea capitata (Vahl) Roemer & Schultes; Lettsomia capitata (Vahl) Blume; L. capitiformis (Poiret) Kerr; L. peguensis C. B. Clarke; L. strigosa Roxburgh.

Shrubs scandent, 10–15 m tall. Stems spreading hirsute, with brown or dull yellow hairs. Petiole 3–16 cm; leaf blade ovate to circular, rarely oblong-lanceolate, 8–18 × 4–13 cm, dull yellow hirsute, base cordate, apex acute or acuminate; lateral veins 13–15 pairs. Cymes capitate, dense; peduncle stout, 6–30 cm, spreading hirsute; bracts persistent, elliptic to lanceolate, 1.5–2.5 × ca. 1 cm, both ends acute, hirsute abaxially. Pedicel short or absent. Sepals lanceolate or ovate-oblong to oblong, densely hirsute abaxially, apex acuminate, outer 3 sepals 1.5–1.7 cm × 5–6 mm, inner 2 sepals 1–1.2 cm. Corolla pink to reddish purple, funnelform, 4.5–5.5 cm,

hirsute outside; limb shallowly lobed or subentire. Stamens and pistil included; filaments ca. 1.5 cm, glandular pilose basally; anthers oblong, ca. 3.5 mm. Ovary ovoid, glabrous, 2-loculed. Style ca. 3 cm, jointed at base; stigma capitate, 2-lobed. Berries orange-red, globose, ca. 8 mm in diam. Seeds 4 or fewer, ovoid-trigonous, ca. 7 mm. Fl. Sep-Dec, fr. Feb.

Wasteland, disturbed areas near human habitation, dense valley forests, open forests and thickets; 100–2200 m. Guangxi, Guizhou, Hainan, Yunnan [Cambodia, NE India, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam].

The leaves are used externally for treating trauma.

11. Argyreia eriocephala C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 125. 1965.

毛头银背藤 mao tou yin bei teng

Shrubs scandent. Stems terete or striate: axial parts ± densely crisped villous, glabrescent with age. Petiole 7-14 cm: leaf blade ovate-circular to circular, $8.5-15 \times 6-12$ cm. papery, abaxially densely sericeous villous, adaxially glabrous, base truncate to shallowly cordate, apex abruptly acute; lateral veins 10-12 pairs. Cymes capitate, compact, ca. 4.5 \times 4–6 cm; peduncle 1.5–2.5(–5) cm; bracts persistent, ovate, $1.7-3 \times 0.7-1.5$ cm, crisped villous abaxially, apex acute. Pedicel 4-6 mm, crisped pilose. Sepals elliptic-oblong, unequal, ± crisped villous abaxially, becoming enlarged and rose-red in fruit, outer 3 ca. 12 × 3 mm, inner 2 ca. 8 × 1.5 mm. Corolla rose colored, funnelform, 4.2-4.5 cm, midpetaline bands pilose; limb shallowly lobed. Stamens and pistil included; filaments ca. 1.5 cm, brownish glandular pilose basally; anthers oblong, ca. 3.5 mm. Disc ringlike. Ovary glabrous, conical, 2-loculed. Style ca. 1.1 cm, jointed at base; stigma capitate, 2-lobed. Fruit rose-red, ellipsoid, 6-7 × ca. 5 mm, apiculate. Seeds 4 or fewer, brownish, ellipsoid, ca. 5 mm. Fl. Sep.

• Forests, thickets; ca. 1300 m. S Yunnan.

12. Argyreia splendens (Hornemann) Sweet, Hort. Brit. ed. 1. 289. 1826.

亮叶银背藤 liang ye yin bai teng

Convolvulus splendens Hornemann, Hort. Bot. Hafn. suppl. 123. 1819; Ipomoea splendens (Roxburgh) Sims; Lettsomia splendens Roxburgh.

Shrubs scandent. Stems terete, gray tomentose or mature stems sparsely whitish pubescent or glabrescent. Petiole 5–15 cm, indumentum similar to stems; leaf blade ovate-oblong or elliptic, $12-27 \times 5-15$ cm, abaxially densely silvery sericeous, adaxially glabrous, base rounded to broadly cuneate or shallowly cordate, apex acute. Cymes axillary; peduncle 10.5-13.5 cm; bracts ovate, $5-6 \times ca$. 3.5 mm, densely silvery sericeous outside. Sepals deciduous, ovate, ca. 7×5 mm, silvery sericeous abaxially, apex obtuse, inner ones slightly smaller than outer. Fruiting calyx rose-red. Corolla pale purple, funnelform-campanulate, 4-5 cm; limb shallowly lobed, midpetaline bands silvery sericeous. Stamens and pistil included; filaments villous basally; anthers oblong, ca. 4.5 mm. Disc ringlike, ca. 0.5 mm high. Ovary glabrous. Style ca.

3.2 cm, jointed at base; stigma capitate, 2-lobed. Berry red, globose, 6–8 mm in diam., enclosed by calyx. Seeds 4, brown, ovoid-trigonous, 4–5 mm. Fr. Sep-Dec.

Forests, thickets; 1000–4000 m. W Yunnan [NE India, Myanmar, Thailand].

The epithet *splendens* has often been attributed to Roxburgh, either in Hort. Bengal. 13. 1814 (a *nomen nudum*), or in Fl. Ind. 2: 75. 1824. Hornemann's publication predates by five years the first publication of a description for *Lettsomia splendens*, so the epithet must be based on Hornemann's *Convolvulus splendens*.

13. Argyreia cheliensis C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 126. 1965.

车里银背藤 che li yin bei teng

Shrubs scandent; axial parts \pm yellowish puberulent. Young stems angular. Petiole 1.7–4 cm; leaf blade narrowly ovate to \pm oblong, 7–10 \times 3.5–4.5 cm, papery, abaxially densely sericeous-pilose, adaxially glabrous, base rounded, apex acute; lateral veins 10–13 pairs. Cymes axillary, corymbose, 4–9-flowered; peduncle (0.7–)3–7 cm; bracts deciduous, broadly ovate, ca. 5 \times 4 mm, \pm densely puberulent abaxially, glabrous adaxially, apex mucronulate. Pedicel ca. 2.5 mm. Sepals brown, ovate-oblong, ca. 4.5 \times 2 mm, puberulent similar to bracts. Corolla white, funnelform, ca. 4.8 cm, midpetaline bands sparsely pilose; limb shallowly lobed. Stamens and pistil included; filaments ca. 1.6 cm, glandular pilose basally; anthers oblong, ca. 4 mm. Disc ringlike, ca. 0.5 mm high. Ovary glabrous, 2-loculed. Fruit unknown. Fl. Sep.

• Thickets; ca. 900 m. S Yunnan (Jinghong Xian).

14. Argyreia monglaensis C. Y. Wu & S. H. Huang, Fl. Reipubl. Popularis Sin. 64(1): 164. 1979.

勐腊银背藤 meng la yin bei teng

Lianas 3-4 m tall. Stems terete, axial parts yellowish tomentose, young parts densely so, older stems grayish. Petiole 1-2 cm; leaf blade narrowly oblong or narrowly oblong-lanceolate, 6.5-12.5 × 2-3 cm, abaxially densely yellowish sericeous-tomentose, adaxially glabrous, base broadly cuneate or rounded, apex acute or acuminate: lateral veins 9–11 pairs. Cymes subcapitate, 7–9-flowered; peduncle 1–3 cm, angular; bracts ovate or ovate-triangular, $2-3.5 \times 2-$ 2.5 mm, densely yellowish tomentose abaxially, ?persistent. Sepals elliptic or ovate-oblong, unequal, tomentose similar to bracts, outer 3 ca. 13×6.5 mm, inner 2 ca. 9.5×3.5 mm. Corolla purple, tubular-funnelform, 3.8-5 cm, midpetaline bands sparsely yellowish villous; limb 2.5-3 cm wide, entire or slightly lobed. Stamens and pistil included, much shorter than corolla; filaments unequal, 1.7-2.2 cm, glandular pubescent basally; anthers sagittate, 4.5-5 mm. Disc ringlike, ca. 1 mm high. Ovary conical, glabrous. Style ca. 3.1 cm, jointed at base; stigma capitate, 2-lobed. Fruit unknown. Fl.

• Ravines, waysides. S Yunnan (Mengla Xian).

15. Argyreia lineariloba C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 134. 1965.

线叶银背藤 xian ye yin bei teng

Shrubs scandent, 3–4 m. Axial parts densely strigose. Roots woody, ca. 1 cm in diam. Stems terete, slender, bristly. Petiole 6–12 mm; leaf blade linear, 9–13 cm \times 7–10 mm, abaxially densely strigose, adaxially sparsely strigose, base attenuate, margin entire, apex acute. Pedicel 1–2 cm. Flower solitary, axillary; bracts 2 (or 3), subulate, 5–6 \times 1.5–3 mm, densely strigose abaxially, persistent. Sepals ovate, \pm equal, ca. 10 \times 5–6 mm, strigose abaxially, apex acute. Corolla pale purple, tubular-funnelform, 4–4.5 cm, midpetaline bands densely strigose outside; limb shallowly lobed. Stamens and pistil included; filaments ca. 1.4 cm, glandular pubescent basally; anthers oblong, ca. 4 mm. Disc ringlike, ca. 0.8 mm high. Ovary glabrous, 2-loculed, 4-ovuled. Style ca. 1.7 cm; stigma capitate, 2-globular. Fruit unknown. Fl. Sep.

 Grassy mountain slopes; ca. 1300 m. C Yunnan (Chuxiong Xian).

16. Argyreia baoshanensis S. H. Huang, Acta Phytotax. Sin. 24(1): 19. 1986.

保山银背藤 bao shan yin bei teng

Herbs(?) scandent, ca. 80 cm tall, with \pm densely grayish strigose axial parts. Roots woody, ca. 1.5 cm in diam. Stems slender, ± terete. Petiole 3-4 mm or absent; leaf blade ovate to ovate-deltate, 3-4.5 × 1.5-2.5 cm, strigose, base cordate, margin entire or slightly undulate, apex obtuse or retuse. Pedicel ca. 8 mm. Flower solitary, axillary; bracts 1 or 2, linear-lanceolate, 0.8-1.2 cm × 1.5-2 mm, densely strigose abaxially, persistent. Sepals linear-lanceolate, ± equal; outer 3 ca. 20 × 2-3 mm, sparsely strigose abaxially, apex acute; inner 2 narrower. Corolla red, tubular-funnelform, ca. 7 cm, sparsely strigose outside; limb ca. 2.7 cm in diam., slightly lobed. Stamens and pistil included; stamens inserted at middle of corolla tube; filaments unequal, 1.2-1.5 cm, 2 filaments longer, base sparsely ciliate; anthers oblong, ca. 2.5 mm. Ovary conical. Style ca. 3.9 cm; stigma capitate, 2-lobed. Capsule enclosed by calyx, globose, ca. 4 mm in diam. Seeds 2, black-brown, ovoid, compressed. Fl. and fr. Jul.

 Wasteland, dry hot valleys, grassy slopes; ca. 1000 m. W Yunnan (Baoshan Xian).

17. Argyreia mastersii (Prain) Raizada, Indian Forester 93: 754. 1967.

叶苞银背藤 ye bao yin bei teng

Lettsomia mastersii Prain, J. Asiat. Soc. Bengal 63: 98. 1894.

Shrubs scandent. Stems terete, villous. Petiole 5–16 cm, villous; leaf blade broadly ovate to circular, 7–17 \times 5.5–15 cm, abaxially \pm whitish villous, adaxially strigose, base cordate, apex acute. Inflorescences cymose; peduncle 3–8 cm; bracts several, ligulate, \pm petiolate, 2–2.4 cm \times 3–5 mm, apex acuminate, persistent. Sepals unequal, \pm spreading villous abaxially; outer 3 ovate-lanceolate, ca. 9 \times 4 mm, apex acuminate; inner 2 obovate-elliptic, ca. 6 \times 3.5 mm, apex obtuse. Corolla red-purple, funnelform, 3.5–4 cm, whitish

hirsute outside; limb shallowly lobed. Stamens and pistil included; filaments ca. 1.7 cm, dilated and glandular pubescent at base; anthers oblong, ca. 3.5 mm. Disc ringlike, ca. 0.5 mm high. Ovary glabrous. Style ca. 2.4 cm; stigma capitate, 2-lobed. Berry enclosed by enlarged calyx, dark purple, ovoid-globose, ca. 1 cm. Seeds 4 or fewer, dark brown, ovoid-trigonous. Fl. Sep.

Open forests or thickets; 800–1300(–1800) m. S and SW Yunnan [NE India, N Myanmar, ?Thailand].

Argyreia mastersii was treated as A. roxburghii (Wallich) Arnott ex Choisy var. ampla (Choisy) C. B. Clarke in Fl. Reipubl. Popularis Sin. and other Chinese floras. A comparison of the type of A. ampla Choisy (Wallich Cat. no. 1420, microfiche seen) revealed that it is quite different from the Chinese plant, which agrees very well with Prain's description and with specimens labelled A. mastersii from Myanmar. Further study of these taxa and A. hookeri C. B. Clarke (Sikkim) is needed.

18. Argyreia fulvovillosa C. Y. Wu & S. H. Huang, Fl. Reipubl. Popularis Sin. 64(1): 164. 1979.

黄背藤 huang bei teng

Lianas 2–3 m tall, with \pm densely yellowish pubescent axial parts. Stems terete. Petiole 6.5-7 cm; leaf blade ovatecircular, ca. 14 × 11-12.5 cm, abaxially densely dull yellowish villous, adaxially yellowish pubescent along midvein and lateral veins, base rounded or cordate, apex acute; lateral veins 11 or 12 pairs. Cymes many flowered, dense; peduncle 10.5-13 cm; bracts persistent, oblong or ovate-oblong, 1-1.3 cm × 5-8 mm, densely yellowish pubescent abaxially, apex obtuse. Sepals ovate-oblong, unequal, yellowish villous abaxially; outer 3 ca. 12 × 7 mm, apex obtuse or acute; inner 2 ca. 10 × 5.5 mm, apex acute. Corolla purple, broadly funnelform, ca. 4.5 cm, midpetaline bands sparsely villous; limb shallowly lobed. Stamens and pistil included, much shorter than corolla; filaments ca. 1.1 cm, densely villous basally; anthers sagittate, ca. 5.5 mm. Disc ringlike, ca. 1 mm high. Ovary conical, glabrous. Style ca. 3.3 cm, jointed at base; stigma capitate, 2-lobed. Fruit unknown. Fl. Nov.

• Forests, ravines; 900-1000 m. S Yunnan (Mengla Xian).

Argyreia fulvovillosa was said to very similar to A. strigillosa. Both come quite near to A. thomsonii Craib from Thailand, and all three may prove to be conspecific. Indumentum density and color are often unreliable to characterize species or even infraspecific taxa in the Convolvulaceae and could prove to be so in this case. However, the oblongish bracts borne near the middle of the pedicel are distinctive for this taxon or group of taxa.

19. Argyreia osyrensis (Roth) Choisy in A. de Candolle, Prodr. 9: 334. 1845.

聚花白鹤藤 ju hua bai he teng

Shrubs scandent. Stems terete; axial parts densely whitish, gray, or yellowish tomentose. Petiole 2–5 cm; leaf blade ovate or broadly ovate to nearly circular, $4-12 \times 4-10$ cm, abaxially densely gray tomentose, woolly, or villous, adaxially \pm strigose-villous or glabrescent, base cordate, apex acute or obtuse; lateral veins 7–11 pairs. Cymes capitate; peduncle 2.5–6 cm; bracts \pm persistent, broadly obovate,

spatulate, or circular, 0.8–1.2 cm, tomentose abaxially, apex obtuse or truncate. Flowers sessile or subsessile. Sepals unequal, tomentose abaxially; outer 2 obovate or spatulate, 9–10 mm, apex obtuse; inner 3 oblong, 5.5–8 mm, apex obtuse, glabrous adaxially, apex obtuse. Fruiting sepals enlarged, red, concave. Corolla pink, tubular-campanulate, 1.2–1.5 cm; limb deeply 5-lobed; lobes narrowly ovate, emarginate, midpetaline bands pubescent. Stamens and pistil exserted; filaments pubescent basally. Ovary glabrous, 2-loculed. Berry enclosed by calyx, red, globose, 6–8 mm in diam. Seeds 1 or 2, ± globose, subglabrous.

SW Guangxi, Hainan, S Yunnan [?Bangladesh, ?Cambodia, India, Indonesia, Laos, ?Malaysia, Myanmar, Sri Lanka, Thailand, Vietnam].

Two, weakly separable varieties may be recognized based on indumentum density; there is considerable intergradation between them.

19a. Argyreia osyrensis var. osyrensis

聚花白鹤藤 (原变种) ju hua bai he teng (yuan bian zhong)

Ipomoea osyrensis Roth, Nov. Pl. Sp. 117. 1821; Argyreia aggregata (Roxburgh) Choisy; Lettsomia aggregata Roxburgh; Lettsomia aggregata var. osyrensis (Roth) C. B. Clarke.

Leaf blade densely gray tomentose or woolly abaxially, sparsely strigose-villous adaxially, hairs with distinct swollen bases. Fl. Aug, fr. Dec.

Forests, thickets; near sea level. Hainan [?Bangladesh, ?Cambodia, India, Indonesia, Laos, ?Malaysia, Myanmar, Sri Lanka, Thailand, Vietnam].

Specimens from the Deccan region in India have adaxially glabrous leaves, whereas those from east Asia, including China, are uniformly sparse hairy adaxially.

19b. Argyreia osyrensis var. **cinerea** Handel-Mazzetti, Oesterr. Bot. Z. 87: 124. 1938.

灰毛白鹤藤 hui mao bai he teng

Leaf blade densely gray villous abaxially, densely strigose-villous adaxially, hairs crowded with bases not visible. Fl. Sep-Oct.

Open forests, thickets; 200-1600 m. SW Guangxi, S Yunnan [Myanmar, Thailand].

The roots and leaves are used medicinally.

20. Argyreia acuta Loureiro, Fl. Cochinch. 135. 1790.

白鹤藤 bai he teng

Argyreia festiva Wallich; Lettsomia chalmersii Hance; L. festiva (Wallich) Bentham & J. D. Hooker.

Shrubs scandent. Stems terete; axial parts silvery sericeous when young, later yellowish or glabrescent. Petiole 1.5-6 cm; leaf blade elliptic or ovate, $5-13.5 \times 3-11$ cm, abaxially silvery sericeous, adaxially glabrous, base rounded, slightly cordate, or truncate; lateral veins to 9 pairs. Cymes axillary or terminal; peduncle 3.5-8 cm, angular or compressed; bracts elliptic or obovate, 0.8–1.2 × 4–8 cm, silvery sericeous abaxially, apex obtuse, ?deciduous. Pedicel ca. 5 mm. Sepals ovate-oblong, unequal; outer ones 9–10 × 6– 7 mm; inner ones $6-7 \times 4-5$ mm, silvery sericeous abaxially, apex obtuse, crinkled or recurved. Fruiting sepals red, navicular, apex recurved or corrugate. Corolla white, broadly funnelform, ca. 2.8 cm, silvery sericeous outside; limb deeply 5-lobed; lobes oblong, apex acuminate. Stamens short exserted; filaments ca. 1.5 cm; anthers oblong, ca. 4 mm. Pistil exserted; ovary glabrous, 2-loculed, 4-ovuled. Style ca. 2 cm; stigma capitate, 2-lobed. Berry enclosed by enlarged calyx, red, globose, ca. 8 mm in diam. Seeds 2-4, brown, ovoid-trigonous, ca. 5 mm. Fl. Aug-Oct, fr. Oct-Jan.

Open forests, thickets, streamsides; 0–200 m. Guangdong, Guangxi, Hainan [Laos, Vietnam].

The whole plant has several medicinal uses.

21. Argyreia formosana Ishigami ex T. Yamazaki, J. Jap. Bot. 44: 160. 1969.

台湾银背藤 tai wan yin bei teng

Ipomoea tomentosa Yamamoto.

Climbers woody, with \pm yellowish pubescent axial parts. Stems striate; young parts densely sericeous, later glabrescent. Petiole 1.5–8 cm; leaf blade broadly ovate-cordate, $6-11 \times 5-$ 9 cm, abaxially densely yellowish white sericeous-tomentose, adaxially glabrous, base shallowly cordate to \pm truncate, apex acute to acuminate; lateral veins 7-12 pairs, prominent abaxially. Inflorescences axillary, cymose, 4-6-flowered; peduncle 1.5-2 cm; bracts early deciduous, ovate, 4-6 mm. Pedicel 6-8 mm. Sepals ovate-oblong, slightly concave, subequal, 6-8 × 3-5 mm, densely sericeous abaxially, glabrous adaxially, apex rounded to obtuse. Corolla deeply 5lobed; tube ca. 5 mm; lobes oblong, reflexed, 1.3-1.5 cm, densely pilose outside, glabrous inside. Stamens and pistil exserted; filaments ca. 1 cm; anthers 3-4 mm. Ovary ovoid, glabrous, 2-loculed. Style filiform, ca. 1.5 cm; stigma 2-lobed. Fruit reddish, globose. Seeds 4 or fewer, ovoid-trigonous. Fl. Oct, fr. Jan.

• Forests. S Taiwan (Kaohsiung, Pingtung Xian, "Ape's Hill").

Argyreia formosana was not treated in Fl. Reipubl. Popularis Sin. and was considered a synonym of A. obtusifolia Loureiro in the Flora of Taiwan (4: 348. 1978). Loureiro's name has been widely misapplied to various taxa in China and throughout southeast Asia, and the protologue is so vague that it is impossible to apply the name correctly. The Taiwanese specimens are quite distinct from all taxa called A. obtusifolia from mainland China and southeast Asia, and the prudent course seems to be to recognize them under Yamazaki's name until a careful study can be undertaken.

22. Argyreia fulvocymosa C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 135. 1965.

黄伞白鹤藤 huang san bai he teng

Shrubs scandent, with \pm dense yellowish tomentose axial parts. Stems terete. Petiole 5-9 cm; leaf blade broadly ovatecircular to nearly circular, 12-15 × 10-15 cm, abaxially densely vellowish tomentose, adaxially densely strigose or glabrescent, base shallowly cordate, apex abruptly acute; lateral veins 12-14 pairs. Cymes axillary, 9-40-flowered; peduncle 2.5-7 cm, angular; bracts deciduous. Pedicel ca. 5 mm. Sepals broadly ovate-circular, unequal, ca. 5 × 4 mm, outer ones larger than inner, yellowish tomentose abaxially, glabrous adaxially, apex rotund. Corolla white or reddish purple, funnelform, ca. 2 cm, midpetaline bands densely yellowish hirsute; limb deeply 5-lobed. Stamens and pistil slightly exserted; filaments slightly dilated and yellowish glandular pilose basally. Disc ringlike, ca. 1 mm high. Ovary glabrous. Berry ovoid, enclosed by enlarged calyx. Seeds 4 or fewer, black, ovoid-trigonous, smooth.

• Grassy mountain slopes, bamboo groves, forests; 700–1000 m. SW Guangxi, S Yunnan.

This species is very similar to *Argyreia maymyo* but appears to be distinct based on the shape and size of sepals.

22a. Argyreia fulvocymosa var. fulvocymosa

黄伞白鹤藤 (原变种) huang san bai he teng (yuan bian zhong)

Leaf blade \pm rugulose and densely strigose with swollenbased hairs adaxially, veins sunken. Cymes ca. 40-flowered. Corolla often white. Fl. Aug, fr. Nov.

Grassy mountain slopes, bamboo groves; 700–900 m. SW Guangxi, S Yunnan.

22b. Argyreia fulvocymosa var. **pauciflora** C. Y. Wu, Rep. Stud. Pl. Trop. Subtrop. Yunnan 1: 136. 1965.

少花黄伞白鹤藤 shao hua huang san bai he teng

Leaf blade nearly smooth and almost glabrous adaxially. Cymes 9–15-flowered. Corolla often reddish purple or white. Fl. Oct.

• Forests; ca. 1000 m. S Yunnan (Mengla Xian).

Flower color of Argyreia fulvocymosa var. pauciflora was recorded as red-purple in the holotype and white in the paratype, suggesting that it may not be a reliable character to distinguish the two varieties.