

3. **ARDISIA** Swartz, Prodr. Veg. Ind. Occ. 3: 48. 1788.

紫金牛属 *zi jin niu shu*

Trees, shrubs, suffrutescent [or rarely herbs]. Leaves alternate or pseudoverticillate, usually punctate or punctate-lineate. Inflorescences paniculate, cymose, corymbose, or umbellate, rarely racemose. Flowers bisexual, often punctate, 5- or rarely 4-merous. Calyx campanulate or cupular; sepals free or barely united at base, imbricate or quincuncial, usually punctate or punctate-lineate. Corolla campanulate, often punctate; lobes united at base, overlapping to right or very rarely to left, imbricate, or quincuncial, often conical in bud. Stamens attached at base or middle of corolla tube; filaments very short, broad at base; anthers dehiscing longitudinally or by apical pores. Ovary ovoid or subglobose, as long as or longer than petals; ovules 3 to many. Style base persistent; stigma minute, apiculate. Fruit drupaceous, 1-seeded, punctate, sometimes longitudinally ribbed, with somewhat fleshy exocarp and crusty or slightly bony endocarp. Seeds covered by membranous remnants of placenta.

About 400–500 species: primarily tropical E and SE Asia, Americas, Australia, and Pacific Islands; 65 species in China.

- 1a. Suffrutescent herbs or subwoody shrubs, if woody then mostly less than 1.5 tall, with creeping rhizomes, stolons, or tubers.
 - 2a. Leaf blade margin serrate or pectinate-dentate.
 - 3a. Leaf blade margin pectinate-dentate.
 - 4a. Leaf blade papery, ovate or elliptic, 6–16 cm, base broadly rounded to subcordate, slightly asymmetric.
 - 5a. Leaf blade bullate adaxially, veins densely villous-tomentose abaxially; inflorescences ca. 3 cm 36. *A. pubivenula*
 - 5b. Leaf blade smooth adaxially, veins minutely villous abaxially; inflorescences 5–7 cm 37. *A. replicata*
 - 4b. Leaf blade membranous 16–50 cm, base cuneate or truncate, symmetric.
 - 6a. Cataphylls absent; leaf secondary veins perpendicular from midrib to margin.
 - 7a. Leaf blade oblanceolate, tomentose abaxially along veins, base truncate; petiole 4–6 cm 38. *A. scalarinervis*
 - 7b. Leaf blade broadly elliptic, tomentose abaxially throughout, base broadly rounded; petiole (6–)6.5–8.5 cm 39. *A. pingbienensis*
 - 6b. Cataphylls present; leaf secondary veins arcuate, curving distally from midrib to margin.
 - 8a. Inflorescences racemose panicles; flowers umbellate; branchlets and midrib tomentose with simple, stramineous trichomes 42. *A. ramondiaeformis*
 - 8b. Inflorescences bipinnate panicles; flowers corymbose; branchlets and midrib tomentose with reddish, elongated, 2-celled capitate trichomes.
 - 9a. Plant subsucculent; leaf blade margin somewhat revolute; inflorescences columnar, not pyramidal 40. *A. dasyrhizomatica*
 - 9b. Plant woody; leaf blade margin flat; inflorescences pyramidal 41. *A. gigantifolia*
 - 3b. Leaf blade margin roughly to finely serrate.
 - 10a. Inflorescences paniculate; petiole winged 43. *A. balansana*
 - 10b. Inflorescences umbellate; petiole not winged.
 - 11a. Leaf blade 15–22 cm 44. *A. purpureovillosa*
 - 11b. Leaf blade 2.5–10 cm.
 - 12a. Leaves alternate, base of blade cordate 49. *A. maclurei*
 - 12b. Leaves opposite, whorled, or nearly so; base of blade cuneate, obtuse, or rounded.
 - 13a. Sepals ovate or triangular-ovate, puberulent, tomentose, or ciliate; bracts 1–2 mm.
 - 14a. Pedicel puberulent, ca. 5 mm; petiole canaliculate, 10–20 mm 45. *A. ordinata*
 - 14b. Pedicel strigose, 7–10 mm; petiole not canaliculate, 6–10 mm 46. *A. japonica*
 - 13b. Sepals linear- to subulate-lanceolate, villous or pilose; bracts 3–5 mm.
 - 15a. Leaf blade elliptic or obovate, 2.5–6 cm; pedicel ca. 6 mm; flowers (3–)4 mm; fruit punctate 47. *A. pusilla*
 - 15b. Leaf blade ovate to lanceolate-elliptic or oblanceolate, 5–10 cm; pedicel 7–10 mm; flowers 4–5(–6) mm; fruit not punctate 48. *A. faberi*
 - 2b. Leaf blade margin entire, crenate, or undulate.
 - 16a. Leaves and branchlets glandular villous-tomentose or glandular puberulent.
 - 17a. Shrubs; leaf blade apex subacuminate to long acuminate, margin glabrous.
 - 18a. Leaf blade margin crenate; branchlets long glandular villous 50. *A. villosa*
 - 18b. Leaf blade margin entire; branchlets reddish glandular puberulent 51. *A. brevicaulis*
 - 17b. Herbs; leaf blade apex rounded to acute; margin long glandular villous-tomentose.
 - 19a. Petiole 0.2–0.4 cm; sepals glabrous; leaf blade apex rounded.
 - 20a. Calyx lobe margin glandular ciliate 52. *A. primulifolia*

- 20b. Calyx lobe margin glabrous 53. *A. omissa*
- 19b. Petiole 2–4 cm; sepals long glandular villous; leaf blade apex acute.
 - 21a. Leaf blade base truncate to broadly rounded, adaxial surface hispid 54. *A. verbascifolia*
 - 21b. Leaf blade base acute, adaxial surface strigose and mamillate 55. *A. mamillata*
- 16b. Leaves and branchlets glandular papillose, scaly, or glabrous.
 - 22a. Leaf blade 2–6 cm.
 - 23a. Leaf blade margin crenulate.
 - 24a. Leaf blade lanceolate, glossy above; branchlets and petioles densely and minutely reddish glandular papillose 56. *A. alyxiifolia*
 - 24b. Leaf blade obovate, dull above; branchlets and petioles reddish brown scaly 57. *A. chinensis*
 - 23b. Leaf blade margin minutely serrulate or entire.
 - 25a. Leaf blade margin entire; branchlets brown scaly apically 58. *A. fordii*
 - 25b. Leaf blade margin minutely serrulate; branchlets minutely reddish puberulent.
 - 26a. Leaf blade base truncate to subcordate 59. *A. violacea*
 - 26b. Leaf blade base cuneate 60. *A. sinoaustralis*
 - 22b. Leaf blade 6.5–20 cm.
 - 27a. Branchlets reddish brown scaly; leaf blade margin without marginal nitrogen-fixing nodules 61. *A. argenticaulis*
 - 27b. Branchlets glandular papillate; leaf blade margin with conspicuous black nitrogen fixing nodules.
 - 28a. Leaf blade apex caudate; branchlets reddish glandular papillose; petiole 0.3–0.6 cm.
 - 29a. Leaf blade membranous, base obtuse to rounded, abaxially glaucous, inconspicuously pellucid punctate, sparsely reddish puberulent 62. *A. caudata*
 - 29b. Leaf blade papery, base acutish to attenuate, abaxially dull, densely black punctate, sparsely reddish papillose 63. *A. pedalis*
 - 28b. Leaf blade apex acute to acuminate; branchlets minutely rusty glandular papillose; petiole 0.8–2 cm.
 - 30a. Leaf blade membranous; petals 4–5 mm, apex acute; plants with creeping rhizomes 64. *A. crispa*
 - 30b. Leaf blade papery to subleathery; petals 7–8 mm, apex acuminate; plants with tubers 65. *A. carnosicaulis*
- 1b. Shrubs or trees, mostly over 1 m, without creeping rhizomes or stolons.
 - 31a. Inflorescences strictly axillary or axillary and terminal.
 - 32a. Branchlets and inflorescence rachis reddish tomentose or puberulent.
 - 33a. Inflorescences cymose, ca. 1 cm; branchlets reddish puberulent 3. *A. aberrans*
 - 33b. Inflorescences paniculate, 7–10 cm; branchlets reddish tomentose.
 - 34a. Inflorescence branches umbellate, rarely cymose; leaf blade margin entire; petiole 0.3–0.5 cm 1. *A. nigropilosa*
 - 34b. Inflorescence branches racemose; leaf blade margin subentire to crenulate; petiole 1.5–2.5 cm 2. *A. baotingensis*
 - 32b. Branchlets and inflorescence rachis glabrous, minutely red papillate, or sparsely brown scaly.
 - 35a. Branchlets and inflorescence rachis scaly.
 - 36a. Leaf blade membranous; perianth membranous 6. *A. quinquegona*
 - 36b. Leaf blade leathery; perianth papery.
 - 37a. Leaf blade glossy adaxially, apex long acuminate, acumen 1–2 cm; secondary veins numerous, fine; calyx lobes broadly ovate to suborbicular 4. *A. waitakii*
 - 37b. Leaf blade dull adaxially, apex acute; secondary veins 14–25 pairs; calyx lobes narrowly triangular 5. *A. sieboldii*
 - 35b. Branchlets and inflorescence rachis glabrous or sparsely and minutely red glandular papillate.
 - 38a. Petiole canaliculate; flowers in corymbs or racemes.
 - 39a. Leaf blade elliptic or oblanceolate, conspicuously black punctate-lineate abaxially, not prominently black punctate adaxially 10. *A. solanacea*
 - 39b. Leaf blade linear or narrowly lanceolate, black punctate abaxially, prominently black punctate adaxially 11. *A. filiformis*
 - 38b. Petiole marginate; flowers in umbels.
 - 40a. Sepals rugose basally; leaf blade margin revolute 7. *A. elliptica*
 - 40b. Sepals smooth or verruculose basally; leaf blade margin flat.

- 41a. Sepals verruculose basally, margin hyaline, apex rounded to emarginate; leaf blade base acute; petals glabrous adaxially at base 8. *A. garrettii*
- 41b. Sepals smooth basally, margin opaque, apex broadly acute; leaf blade base cuneate; petals red glandular papillate adaxially at base 9. *A. brunnescens*
- 31b. Inflorescences terminal or subterminal.
- 42a. Leaf blade margin crenulate, serrate, or dentate, if subentire then with large vascularized nodules.
- 43a. Branchlets, abaxial leaf surface, and inflorescence rachis glabrous or rusty scaly.
- 44a. Branchlets, abaxial leaf surface, and inflorescence rachis rusty scaly; leaf blade membranous or papery, densely black punctate and punctate-lineate or inconspicuously pellucid punctate.
- 45a. Leaf blade membranous, densely and prominently black punctate and punctate-lineate; tertiary veins not conspicuous 32. *A. shweliensis*
- 45b. Leaf blade papery, inconspicuously pellucid punctate; tertiary veins prominently raised abaxially 33. *A. malipoensis*
- 44b. Branchlets, abaxial leaf surface, and inflorescences glabrous; leaf blade leathery, not punctate.
- 46a. Inflorescences corymbose panicles of umbels; sepals lanceolate; petiole 10–13 mm 34. *A. hanceana*
- 46b. Inflorescences simple or compound umbels; sepals broadly ovate to suborbicular; petiole 0.3–0.5 mm 35. *A. crassinervosa*
- 43b. Branchlets and inflorescence rachis sparsely glandular papillose-puberulent and early glabrescent, or strigose.
- 47a. Inflorescences simple umbels.
- 48a. Leaf blade margin sharply serrate; sepals as wide as or wider than long; petals glabrous within 24. *A. cornudentata*
- 48b. Leaf blade margin undulate, or crenulate, rarely distantly serrulate; sepals longer than wide; petals yellow glandular granulate adaxially at base.
- 49a. Abaxial leaf surface, branchlets, and inflorescence rachis densely and minutely reddish puberulent; sepals papery, margin sparsely glandular ciliolate 25. *A. lindleyana*
- 49b. Abaxial leaf surface glabrous, branchlet and inflorescences rachis minutely reddish glandular papillate, early glabrescent; sepals membranous, margin glabrous 26. *A. crenata*
- 47b. Inflorescences panicles of corymbs, umbels, or cymes.
- 50a. Panicles cymose or compound umbels; leaf blade apex acute or subacuminate.
- 51a. Leaf blade papery, dull, densely black punctate, sparsely glandular papillate abaxially; inflorescences compound umbels 30. *A. virens*
- 51b. Leaf blade leathery, glossy, inconspicuously pellucid punctate, with reddish bifurcate trichomes abaxially; inflorescences compound cymes 31. *A. alutacea*
- 50b. Panicles corymbose; leaf blade apex caudate-acuminate.
- 52a. Leaf blade membranous; inflorescences compound corymbs 27. *A. conspersa*
- 52b. Leaf blade subleathery to leathery; inflorescences corymbs of umbels.
- 53a. Perianth membranous, hyaline, essentially epunctate; sepals and petals long attenuate 28. *A. merrillii*
- 53b. Perianth papery, densely black punctate; sepals obtuse, petals acute 29. *A. corymbifera*
- 42b. Leaf blade margin subentire, undulate, or entire, without vascularized nodules.
- 54a. Inflorescences umbellate, terminal on modified lateral branchlets.
- 55a. Leaf blade linear or linear-lanceolate; branchlets 1.5–2.5(3.5) mm in diam.
- 56a. Leaf blade leathery, densely and prominently black punctate and punctate-lineate; sepals elliptic 22. *A. ensifolia*
- 56b. Leaf blade papery, inconspicuously red punctate; sepals deltate 23. *A. hypargyrea*
- 55b. Leaf blade elliptic, broadly oblanceolate or obovate; branchlets (3.5–) 4–5 mm in diam.
- 57a. Branchlets red puberulent; petiole up to 1 cm, leaf blade leathery or subleathery, dull adaxially, pale abaxially.
- 58a. Leaf blade obscurely pellucid punctate; sepals ovate, acute apically, 1.5–2 mm, inconspicuously red punctate medially, margin opaque, erose, densely red glandular ciliate; peduncle 0.5–1.2 cm 18. *A. porifera*

- 58b. Leaf blade prominently black punctate; sepals suborbicular, broadly rounded and notched apically, 4–6 mm, densely black punctate medially, margin hyaline, irregular, with a few translucent glandular cilia; peduncle 1.3–2.5 cm 19. *A. perreticulata*
- 57b. Branchlets glabrous; petiole 1–4 cm; leaf blade membranous, glossy adaxially.
- 59a. Leaf blade densely and prominently red punctate, margin entire; petiole 1–2 cm 20. *A. olivacea*
- 59b. Leaf blade densely and prominently black punctate and punctate-lineate, margin roughly crenate; petiole 3–4 cm 21. *A. hokouensis*
- 54b. Inflorescences pyramidal paniculate, terminal and/or subterminal on main branchlet axis.
- 60a. Leaf blade leathery, thin leathery, or cartilaginous; branchlets 5–7 mm in diam.
- 61a. Leaf blade thin leathery, smooth; sepals ovate 14. *A. obtusa*
- 61b. Leaf blade cartilaginous or leathery, scrobiculate; sepals lanceolate.
- 62a. Leaf blade cartilaginous; inflorescences and branchlets minutely scaly 12. *A. densilepidotula*
- 62b. Leaf blade leathery; inflorescences and branchlets glabrous 13. *A. racemosa*
- 60b. Leaves membranous to papery; branchlets 2–3 mm in diam.
- 63a. Flowers in corymbs; pedicel erect; inflorescence rachis straight..... 5. *A. thyrsoiflora*
- 63b. Flowers in umbels; pedicel recurved; inflorescence rachis geniculate.
- 64a. Leaf blade bullate, elliptic to lanceolate; inflorescence rachis and branchlets reddish scaly and glandular papillate..... 16. *A. retroflexa*
- 64b. Leaf blade smooth, obovate to oblanceolate; inflorescence rachis and branchlets reddish stellate and dendroid tomentose 17. *A. curvula*

1. *Ardisia nigropilosa* Pitard in Lecomte, Fl. Indo-Chine 3: 810. 1930.

星毛紫金牛 xing mao zi jin niu

Ardisia stellata E. Walker.

Shrubs ca. 3 m tall, densely reddish stellate tomentose throughout; stellate hairs stipitate. Branchlets terete, 2.5–3.5 mm in diam., strongly longitudinally ridged. Petiole canaliculate, 3–5 mm; leaf blade oblanceolate, 12–24 × 3.5–7 cm, papery, dull and glabrescent adaxially except for midrib, base subauriculate, margin flat, entire or obscurely undulate, apex acute or acuminate; lateral veins 15–20 on each side of midrib, prominent, raised, marginal vein absent. Inflorescences terminal or sublateral, paniculate, branches umbellate or cymose, 7–10 cm. Flowers papery, pink, ca. 3 mm. Pedicel (5–)7–10 mm. Sepals triangular lanceolate, 1.2–1.5 mm, densely tomentose, punctate, margin entire and glabrous, apex acute. Petals nearly free, broadly ovate, epunctate or sparsely punctate, sparsely pubescent abaxially, glabrescent, margin entire, apex obtuse or subacute. Stamens ca. 2/3 as long as petals; filaments obsolete; anthers ovate, punctate dorsally, dehiscent by longitudinal slits, apex caudate. Pistil ca. as long as petals; ovary globose, glabrous, punctate; ovules numerous, multiseriate. Stigma punctiform. Fruit globose, dull red or reddish black, 4–5 mm in diam., stellate tomentose. Fl. May, fr. Oct.

Evergreen broad-leaved forests, mountains, stream sides, damp places; ca. 500 m. S Yunnan [Vietnam].

2. *Ardisia baotingensis* C. M. Hu, Acta Bot. Austro-Sin. 6: 27. 1990.

保亭紫金牛 bao ting zi jin niu

Shrubs 2–3 m tall, reddish brown scaly on branchlets, petioles, and inflorescence rachis. Branchlets slightly angular

to obtusely 4-angled, 3–5 mm in diam. Petiole canaliculate, 1.5–2.5 cm; leaf blade oblong or elliptic, 14–25 × 4–8.5 cm, papery, or thin leathery, base broadly cuneate, margin flat, entire to subcrenate, apex acute to slightly acuminate, acumen to 5 mm, without a mucro; lateral veins numerous, prominently raised on both surfaces, marginal vein evident. Inflorescences axillary on long peduncles, paniculate, branches umbellate, rachis straight, glabrous. Flowers papery, pink, ca. 5 mm. Pedicel recurved, 0.8–1.5 cm. Sepals triangular, 0.8–1 mm, minutely punctate, margin entire, ciliate, apex acute. Petals united to 1/4 length, broadly ovate, margin entire, hyaline, glabrous, apex acute. Stamens subequal to petals; filaments short; anthers ovate, ca. 2 mm, apparently epunctate, apiculate. Pistil ca. as long as petals; ovary subglobose, glabrous; ovules numerous, multiseriate. Fruit subglobose, 6–7 mm in diam., longitudinally striate. Fl. Feb–Apr, fr. Oct–Nov.

* Dense broad-leaved forests, mountains. Hainan.

3. *Ardisia aberrans* (E. Walker) C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 337. 1977.

狗骨头 gou gu tou

Embelia aberrans E. Walker, Bull. Fan Mem. Inst. Biol. 9: 173. 1939.

Shrubs 1.2–2 m tall. Branchlets terete, 2–3 mm in diam., reddish puberulent, glabrescent. Petiole canaliculate, 6–10 mm; leaf blade narrowly elliptic or oblanceolate, 17–23 × 5–9 cm, papery, dull and glabrous adaxially, minutely puberulent and punctate abaxially, base cuneate or obtuse or sometimes rounded, margin flat, entire, apex acuminate; lateral veins 18–23 on each side of midrib, prominently raised adaxially, marginal vein present. Inflorescences axillary, cymose, ca. 1 cm, puberulent, usually pendulous. Flowers papery, ca. 3 mm. Pedicel 2–3

mm, puberulent. Sepals ovate, ca. 1 mm, minutely puberulent, red punctate, margin ciliate, apex acute. Petals united ca. 1/2 way to base; lobes broadly ovate, glabrous, minutely punctate, base auriculate, margin entire, apex obtuse. Stamens slightly shorter than petals; filaments subobsolete; anthers ovate or broadly lanceolate, punctate dorsally, dehiscent by longitudinal slits, apex acute. Pistil ca. as long as petals, glabrous; ovary conical; ovules numerous, in 3 series. Stigma punctiform. Fruit globose, ca. 5 mm in diam., punctate. Fl. Apr, fr. Sep.

* Evergreen broad-leaved forests, valleys, damp places; 1100–1400 m. Yunnan.

4. *Ardisia waitakii* C. M. Hu, Bot. J. South China 1: 2. 1992.

越南紫金牛 yue nan zi jin niu

Shrubs or trees to 4 m tall. Branchlets terete, 3–3.5 mm in diam., brown scaly, glabrescent. Petiole canaliculate, 7–12 mm; leaf blade oblong or narrowly oblanceolate, 9–20 × 2.5–5.5 cm, leathery, densely pellucid punctate, glossy, and glabrous adaxially, pale and densely minute brown scaly abaxially, base cuneate, margin flat, entire, apex long acuminate or attenuate, acumen 1–2 cm; lateral veins numerous, marginal vein present. Inflorescences axillary or subterminal, corymbose. Flowers papery, white or pink, 3.5–4 mm. Pedicel 5–10 mm. Sepals broadly ovate to suborbicular, 1.5–1.8 mm, keeled and orange punctate medially, sparingly brown scaly basally, margin erose toward apex and ciliate, apex obtuse to rounded. Petals united 0.3–0.4 mm from base; lobes ovate, sparsely pellucid punctate, rusty papillate adaxially at base, margin entire, apex obtuse to acutish. Stamens subequalling petals; filaments ca. 0.5 mm; anthers narrowly ovate, ca. 2.5 mm, epunctate dorsally, dehiscent by subterminal pores opening into longitudinal slits, apex cuspidate. Pistil equaling petals; ovary ovoid, densely punctate; ovules numerous, multiseriate. Stigma punctiform. Fruit globose, 5.5–6 mm in diam., pellucid punctate. Fl. Apr–May, fr. Oct.

Evergreen broad-leaved forests, stream sides; 500–800 m. Guangdong, Guangxi, Hainan [Vietnam].

Plants reported in FRPS as *Ardisia oxyphylla* Wallich ex A. de Candolle var. *cochinensis* Pitard are misidentifications of *A. waitakii*. The former taxon is a synonym of *A. amherstiana* A. de Candolle, a species that does not occur in China.

5. *Ardisia sieboldii* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 190. 1867.

多枝紫金牛 duo zhi zi jin niu

Ardisia formosana Rolfe; *Bladhia sieboldii* (Miquel) Nakai; *Timus sieboldii* (Miquel) Kuntze.

Shrubs or rarely small trees to 10 m tall. Branchlets terete 2–3 mm in diam., sparsely brown scaly when young, finely wrinkled. Petiole marginate, 5–10 mm; leaf blade obovate to oblanceolate, 7–14 × 2–4 cm, leathery, dull adaxially, glabrous or sometimes minutely brown scaly abaxially, base cuneate, margin entire, usually revolute, apex broadly to narrowly acute; lateral veins 14–25 on each side of midrib, inconspicuous, marginal vein obscure. Inflorescences axillary, near ends of branches, paniculate, branches subumbellate or cymose, 3–4(–7) cm, glabrous. Flowers membranous, white,

ca. 3 mm. Pedicel ca. 5 mm, brown scaly. Sepals ovate, 1–1.5 mm, sparsely punctate, margin entire, ciliate, apex acute. Petals nearly free, broadly ovate, inconspicuously punctate, glabrous, apex acute. Stamens ca. 3/4 as long as petals; filaments equal to anther length; anthers ovate, prominently black or inconspicuous pellucid punctate dorsally, dehiscent by pores opening into large longitudinal slits, apex apiculate. Pistil ca. as long as petals; ovary glabrous, punctate; ovules numerous, multiseriate. Fruit globose, red to blackish, ca. 7 mm in diam., somewhat fleshy. Fl. Mar–Jun, fr. Jan–Apr. $2n = 48$.

Mixed forests, thickets, mountains, hillsides; 100–600 m. Fujian, Taiwan, Zhejiang [S Japan].

6. *Ardisia quinquegona* Blume, Bijdr. 689. 1826.

罗伞树 luo san shu

Ardisia elliptisepala E. Walker; *A. jinyunensis* Z. Y. Zhu; *A. pauciflora* Heyne; *A. pentagona* A. de Candolle; *A. quinquegona* var. *hainanensis* E. Walker; *A. quinquegona* var. *oblonga* E. Walker; *Bladhia pseudoquinquegona* Masamune; *B. quinquegona* (Blume) Nakai.

Shrubs 2(–6) m tall, rarely rhizomatous. Branchlets angular, 2–3 mm in diam., brown scaly, glabrescent, longitudinally ridged. Petiole canaliculate, (3–)5–10 mm, brown scaly, glabrescent; leaf blade oblong, elliptic, or oblanceolate, 8–16 × 2–4 cm, membranous, dull and glabrous adaxially, inconspicuously punctate and scaly abaxially, base cuneate, margin flat, entire, apex narrowly acute to acuminate, acumen to 1 cm; lateral veins numerous, inconspicuous, marginal vein inconspicuous. Inflorescences axillary, paniculate, cymose, or subumbellate, ca. (1–)3–5(–8) cm, scaly. Flowers membranous, white or pink, to 3 mm. Pedicel 5–8 mm, scaly. Sepals ovate to lanceolate, ca. 1 mm, punctate, glabrous, margin sparsely and minutely ciliate, apex acute to obtuse. Petals nearly free, broadly elliptic, to 3 mm, punctate, glabrous except puberulent at base adaxially, apex acute or obtuse. Stamens subequalling petals; filaments obsolete; anthers ovate to reniform, punctate dorsally, dehiscent by terminal pores opening into large longitudinal slits, apex apiculate. Pistil longer than petals, even in bud; ovary glabrous, punctate; ovules numerous, multiseriate. Stigma punctiform. Fruit depressed, obtusely 5-angled, inconspicuously punctate. Fl. Mar–Jul, fr. Aug–Feb.

Damp seepage in mixed forests, valleys, stream banks, hillsides, damp places; 200–1300 m. Fujian, Guangdong, Guangxi, Hainan, Sichuan, Taiwan, Yunnan [India, Indonesia, Japan (Ryukyu Islands), Malaysia, Vietnam].

7. *Ardisia elliptica* Thunberg, Nov. Gen. Pl. 8: 119. 1798.

东方紫金牛 dong fang zi jin niu

Ardisia kotoensis Hayata; *A. squamulosa* Presl; *Bladhia kotoensis* (Hayata) Nakai; *Timus squamulosa* (Presl) Kuntze..

Shrubs 1–2 m tall, glabrous. Branchlets angular, 3–4.5 mm in diam., glabrous, conspicuously black punctate-lineate, longitudinally ridged. Petiole marginate, 5–10 mm; leaf blade oblanceolate or obovate, 6–12(–16) × 3–5(–7) cm, subleathery, dull and densely punctate abaxially, especially along

margin, base cuneate, margin revolute, entire, apex obtuse or acute; lateral veins 12–34 on each side of midrib, marginal vein present. Inflorescences axillary or subterminal on basally thickened lateral branches, subumbellate or umbellate. Flowers leathery, pink or white, 6(–8) mm. Pedicel ca. 1–2 cm, minutely and densely white verruculose, densely punctate. Sepals broadly ovate, ca. 1 mm, densely black punctate, base rugose and subauriculate, margin subentire, scarious, minutely ciliate, apex rounded. Petals almost free, broadly ovate, densely punctate, glabrous, margin hyaline, scarious, entire, apex long attenuate. Stamens subequalling petals; anthers linear-lanceolate, punctate dorsally, longitudinally dehiscent, transversely septate-lobed, apex apiculate. Pistil as long as petals; ovary glabrous, pellucid punctate; ovules numerous, multiseriate. Fruit subglobose, red or purplish black, ca. 8 mm in diam., minutely punctate, fleshy. Fl. Feb–Apr, fr. Sep–Nov. $2n = 48^*$

Roadsides, scrub, near villages, edges of fields, along coasts. Taiwan [India, Indonesia, Japan (Ryukyu Islands), Malaysia, Philippines, Sri Lanka, Vietnam; cultivated and naturalized throughout tropics].

8. *Ardisia garrettii* H. R. Fletcher, Bull. Misc. Inform. Kew 1937: 30. 1937.

小乔木紫金牛 xiao qiao mu zi jin niu

Shrubs or trees 2–5(–8) m tall, glabrous. Branchlets terete, 3–4 mm in diam., minutely glandular papillate, early glabrescent. Petiole marginate, 5–10 mm; leaf blade narrowly oblanceolate, 9–19 × 2–5 cm, papery, inconspicuously punctate, base acute, margin flat, entire, apex acuminate, acumen 1–1.5 cm; lateral veins 14–20 on each side of midrib, inconspicuous adaxially, slightly raised abaxially, marginal vein absent. Inflorescences axillary, paniculate, branches umbellate or subracemose, rarely cymose, 4–10 cm. Flowers papery, white, rarely red or pink, 5–7 mm. Pedicel 1.2–1.9 cm. Sepals broadly ovate, ca. 2 mm, reflexed in fruit, punctate, base subauriculate, verruculose, margin hyaline, ciliate, apex rounded or emarginate. Petals nearly free, broadly ovate, 5–7 mm, glabrous, purplish red punctate, apex acute. Stamens shorter than petals; anthers lanceolate, black punctate dorsally, dehiscent by longitudinal pores, apex acute or minutely apiculate. Pistil as long as petals; ovary glabrous; ovules numerous, in 3 or 4 series. Fruit reddish purple or blackish, oblate, ca. 7 mm in diam., densely punctate. Fl. Feb–Apr, fr. Sep–Nov.

Mixed forests, limestone hillsides, shrubby areas, mountains; 400–1400 m. Guizhou, Xizang, Yunnan [Myanmar, Thailand, Vietnam].

The species was reported in FRPS as *Ardisia arborescens*.

9. *Ardisia brunnescens* E. Walker, J. Wash. Acad. Sci. 27: 198. 1937.

凹脉紫金牛 ao mai zi jin niu

Ardisia glauca Pitard (1930), not Mez (1920).

Shrubs 0.5–1(–3) m tall, glabrous. Branchlets somewhat angled, 2.5–3.5 mm in diam., glabrous. Petiole marginate, (5–) 7–12 mm; leaf blade elliptic, 8–14 × 3.5–6 cm, papery, base broadly cuneate, margin entire, apex acute or broadly acumi-

nate; lateral veins 10–15 on each side of midrib, marginal vein undulate, ± interrupted. Inflorescences subterminal, paniculate, on specialized lateral branches 5–9 cm, with 1 or 2 reduced apical leaves, branches umbellate. Flowers papery, pink, ca. 4 mm. Pedicel subclavate, ca. 1 cm, slender. Sepals ovate, ca. 1.5 mm, punctate, sometimes sparsely scaly, base smooth, margin opaque, minutely ciliate, apex broadly acute. Petals ovate, ca. 4 mm, united at base; lobes densely and finely punctate, glabrous abaxially, minutely red glandular papillate near base adaxially, margin entire, opaque, apex acute. Stamens shorter than petals; filaments extremely short; anthers ovate, punctate or darkened dorsally, dehiscent by longitudinal slits, apex apiculate. Pistil as long as petals; ovary ovoid, glabrous; ovules numerous, multiseriate. Fruit dark reddish, globose, 6–7 mm in diam., pellucid punctate. Fl. Apr, fr. Oct–Jan.

Mixed forests, thickets, valleys, hillsides. Guangdong, Guangxi [Vietnam].

10. *Ardisia solanacea* Roxburgh, Pl. Coromandel 1: 27. 1795.

酸台菜 suan tai cai

Shrubs or trees to 6 m tall, glabrous. Branchlets prominently angular, 5–7 mm in diam. Petiole canaliculate, 1–2 cm; leaf blade elliptic or oblanceolate, 12–20 × 4–7 cm, papery, conspicuously black punctate and punctate-lineate abaxially, not prominently punctate adaxially, base cuneate or narrowly decurrent on petiole, margin subrevolute, entire, apex acute; lateral veins ca. 20 on each side of midrib, raised on both surfaces, marginal vein absent. Inflorescences at bases of new shoots, paniculate with racemose or rarely corymbose branches, 3–8 cm. Flowers leathery, pink, ca. 1 cm. Sepals broadly ovate to reniform, ca. 3 mm, densely black punctate, base subauriculate, margin subentire or crenulate, ciliate, scarious, apex rounded. Petals nearly free; lobes broadly ovate, ca. 9 mm, punctate, margin entire, hyaline, apex obtuse or acute. Stamens subequalling petals; filaments ca. 1/4 anther length; anthers linear-lanceolate, densely punctate dorsally, longitudinally dehiscent, apex acute. Pistil subequalling petals; ovary globose, densely punctate; ovules numerous, multiseriate. Fruit purplish red or blackish, oblate, 7–9 mm in diam., densely black punctate. Fl. Feb–Mar, fr. Aug–Nov. $2n = 46$.

Mixed forests, shrubby areas, mountains or hillsides; 400–1600 m. SW Guangxi, S and SE Yunnan [India, Nepal, Singapore, Sri Lanka, cultivated in Hawaii].

11. *Ardisia filiformis* E. Walker, J. Wash. Acad. Sci. 27: 198. 1937.

狭叶紫金牛 xia ye zi jin niu

Shrubs to 1.5 m tall. Branchlets terete, 1.5–2.5 mm in diam., glabrous. Petiole canaliculate, 3(–10) mm; leaf blade linear or narrowly lanceolate, 12–20(–32) × 1–2.5(–3.5) cm, membranous, glabrous black punctate adaxially, conspicuously punctate and minutely brown scaly abaxially, sparsely punctate, base broadly cuneate, margin entire or undulate, apex long acuminate to rarely acute; lateral veins 10–15 on

each side of midrib, marginal vein conspicuous. Inflorescences paniculate, axillary, branches racemose or subcorymbose, 4–7(–12.5) cm, glabrous. Flowers membranous, pinkish or reddish, 3–4 mm. Pedicel 0.8–1.5 cm, slender, glabrous. Sepals ovate to long triangular, ca. 1 mm, glabrous, minutely punctate, margin entire, apex obtuse to acuminate. Petals nearly free, oblong or ovate, glabrous, minutely punctate, margin entire, apex acute to subobtusate. Stamens shorter than petals; filaments subobsolete; anthers lanceolate, dehiscent by longitudinal slits, apiculate. Pistil equal to petals; ovary glabrous, obscurely punctate; ovules numerous, multiseriate. Fruit reddish or blue-black, globose, ca. 6 mm in diam., punctate. Fl. Mar–Apr, fr. Nov–Dec.

* Dense mixed forests, hillsides, damp places; 200–1000 m. Guangxi.

12. *Ardisia densilepidotula* Merrill, Lingnan Sci. J. 6: 284. 1928.

密鳞紫金牛 mi lin zi jin niu

Trees 3–8(–15) m tall, densely reddish brown scaly on branchlets, petioles and inflorescence rachis. Branchlets angular, 5–7 mm in diam. Petiole narrowly marginate, deeply canaliculate, ca. 1 cm; leaf blade obovate or broadly oblanceolate, 11–17(–24) × 4–6(–10) cm, cartilaginous, inconspicuously punctate, scrobiculate, base cuneate and narrowly decurrent, margin entire, revolute, apex broadly acute; lateral veins numerous, raised on both surfaces, marginal vein present. Inflorescences terminal or subterminal, pyramidal paniculate, branches subumbellate, 10–14 cm. Flowers leathery, pink or purplish red, ca. 3 mm. Pedicel 3–8 mm. Sepals lanceolate, 1–1.5 mm, inconspicuously pellucid punctate, glabrous, margin ciliate, apex acute. Petals nearly free, ovate, inconspicuously pellucid punctate, glabrous, margin entire, apex obtuse. Stamens subequalling petals; filaments to 1 mm; anthers ovate, not punctate dorsally, apiculate. Pistil as long as or longer than petals in bud; ovary ovoid, glabrous; ovules ca. 14, in 2 or 3 close series. Fruit purplish red to black, globose, ca. 6 mm in diam., inconspicuously pellucid punctate. Fl. Jun–Aug, fr. Oct–Nov.

* Dense broad-leaved forests, valleys, hillsides; 300–2000 m. Hainan.

13. *Ardisia humilis* Vahl, Symb. Bot. 3: 40. 1794.

矮紫金牛 ai zi jin niu

Ardisia hainanensis Mez; *A. pyrgina* Saint Lager; *A. pyrgus* Roemer & Schultes; *Tinus humilis* (Vahl) Kuntze.

Shrubs 1–2(–5) m tall, glabrous. Branchlets terete, 5–7 mm in diam., glabrous. Petiole canaliculate, 6–10 mm; leaf blade obovate, elliptic, or rarely oblanceolate, 15–18 × 5–7 cm, leathery, glabrous, inconspicuously pellucid punctate, scrobiculate, base cuneate and minutely decurrent, margin entire, apex broadly acute to obtuse; lateral veins ca. 12 on each side of midrib, marginal vein absent. Inflorescences terminal, rarely terminating lateral branchlets, subumbellate or cymose in pyramidal panicles, 8–17(–20) cm. Flowers leathery, pink or purplish red, 5–6 mm. Pedicel 6–10 mm, ca.

1.5 cm in fruit. Sepals broadly ovate, 1–2 mm, glabrous, punctate, base subauriculate, margin entire, apex acute. Petals nearly free, broadly ovate or ovate, glabrous, inconspicuously pellucid or orange punctate, glabrous. Stamens subequalling petals; filaments ca. 1/2 anther length; anthers oblong-lanceolate, punctate dorsally, apiculate. Pistil equaling petals; ovary punctate, glabrous; ovules numerous, in 3 series. Fruit dull red or purplish black, globose, ca. 6 mm in diam., densely punctate. Fl. Mar–Apr, fr. Nov–Dec.

Mixed forests, hillsides, open fields; 0–1100 m. Guangdong, Hainan [Philippines, Vietnam].

14. *Ardisia obtusa* Mez in Engler, Pflanzenr. IV. 236(Heft 9): 104. 1902.

铜盆花 tong pen hua

Shrubs or trees to 7 m tall, densely and minutely brown scaly on branchlets, petioles and inflorescence, glabrescent. Branchlets terete, 4–5(–6) mm in diam. Petiole marginate, canaliculate, 5–10 mm; leaf blade oblanceolate, elliptic or obovate, (5–)6–9(–10) × (1.4–)2–4(–5) cm, thin leathery, glabrous, base cuneate, margin entire or obscurely serrate, apex broadly acute, acuminate, or obtuse; lateral veins 8–15 on each side of midrib, obscure, marginal vein inconspicuous. Inflorescences terminal or subterminal, paniculate, branches corymbose or subumbellate, rarely racemose, 5–8 × 7–13 cm. Flowers papery, white to pink or lavender, 2–5(–6) mm. Pedicel 2–10(–17) mm, slender. Sepals ovate, 0.8–1.5 mm, pellucid or orange punctate, margin entire, minutely ciliate, apex acute. Petals nearly free, broadly ovate or ovate, 2–4(–6) mm, densely and minutely orange punctate, or inconspicuously pellucid punctate, margin entire, apex obtuse to acute. Stamens equaling petals; filaments short; anthers punctate dorsally, apex apiculate. Pistil as long as petals; ovary glabrous; ovules 15 to numerous, in 3 series. Fruit black, 4 (–8) mm in diam., pellucid punctate, obscurely longitudinally ribbed.

Two subspecies: Guangdong, Guangxi, Hainan [Vietnam].

- 1a. Leaf blade oblanceolate to obovate; petiole broadly marginate, 12–15 mm; sepals 1.2–1.5 mm; petals 3–6 mm, inconspicuously pellucid punctate 14a. subsp. *obtusa*
- 1b. Leaf blade narrowly oblanceolate to elliptic; petiole marginate and canaliculate, 5–10 mm; sepals 0.8–1 mm; petals 2–2.5 mm, densely and minutely orange punctate 14b. subsp. *pachyphylla*

14a. *Ardisia obtusa* subsp. *obtusa*

铜盆花(原亚种) tong pen hua (yuan ya zhong)

Petiole broadly marginate, 1.2–1.5 cm; leaf blade oblanceolate to obovate, 6–10(–17.5) × 2–4(–5) cm. Flowers lavender or pink, 4–5(–6) mm. Pedicel 5–10(–17) mm. Sepals 1.2–1.5 mm. Petals 3–6 mm, pellucid punctate. Ovules ca. 15. Fruit black, 4(–8) mm in diam., obscurely longitudinally ribbed. Fl. Feb–Apr, fr. Apr–Jul.

* Bushes, broad-leaved forests, valleys, hilly areas, water edges; 0–100 m. Guangdong, Hainan.

14b. *Ardisia obtusa* subsp. ***pachyphylla*** (Dunn) Pipoly & C. Chen, *Novon* 5: 359. 1995.

厚叶铜盆花 *hou ye tong pen hua*

Ardisia pachyphylla Dunn, *Bull. Misc. Inform. Kew* 1912: 368. 1912.

Petiole marginate and canaliculate, 5–10 mm; leaf blade elliptic to narrowly oblanceolate, 5–9 × 1.4–2.3 cm. Flowers white to pinkish, 2–2.5 mm. Pedicel 2–5 mm, slender. Sepals 0.8–1 mm. Petals 2–2.5 mm, densely and minutely punctate. Ovules numerous. Fruit unknown. Fl. May–Jun.

Dense evergreen broad-leaved forests, valleys, damp places; 400–700 m. Guangxi [Vietnam].

15. *Ardisia thyriflora* D. Don, *Prodr. Fl. Nep.* 148. 1825.

南方紫金牛 *nan fang zi jin niu*

Ardisia austroasiatica E. Walker; *A. depressa* C. B. Clarke; *A. floribunda* Wallich (1824), not Roemer & Schultes (1819); *A. meziana* H. Léveillé (1912), not King & Gamble (1906); *A. neriifolia* Wallich; *A. tenera* Mez; *A. yunnanensis* Mez; *Tinus depressa* (C. B. Clarke) Kuntze; *T. thyriflora* (D. Don) Kuntze.

Shrubs or small trees 1.5–5(–9) m tall, densely brown scaly on branchlets, petioles, and inflorescences. Branchlets terete, 2–3 mm in diam. Petiole canaliculate, ca. 1 cm; leaf blade narrowly elliptic to oblanceolate, 12–20(–22) × 2–4.5 (–6) cm, papery, glossy, densely and minutely scrobiculate adaxially, glabrous or minutely rusty brown scaly abaxially glabrescent, pellucid punctate, base cuneate or narrowly decurrent, margin entire, apex long acuminate, acumen 1.5–2 cm; lateral veins numerous, obscure abaxially, marginal vein absent. Inflorescences terminal or subterminal, paniculate, branches corymbose, 10–20 cm. Flowers papery, pink or purplish red, ca. 4 mm. Pedicel erect, ca. 5 mm. Sepals ovate to elliptic, 1.3–1.5 mm, orange punctate, brown scaly abaxially, pubescent adaxially, margin ciliate, apex acute. Petals nearly free, ovate, 3.8–4 mm, sparsely orange punctate, glabrous, margin entire, apex acute. Stamens subequal to petals; filaments ca. 1.5 mm; anthers ovate to lanceolate, ca. 1.5 mm, punctate dorsally, apiculate. Ovary glabrous; ovules numerous, multiseriate. Fruit purplish red, globose, often 5-angled, ca. 4 mm in diam., minutely punctate. Fl. Jan–May, fr. Apr–Dec.

Broad-leaved forests, woody hillsides, valleys, damp places, thickets; 200–1500 m. Guangxi, Guizhou, Hainan, Sichuan, Xizang, Yunnan [India, Myanmar, Nepal, Vietnam].

16. *Ardisia retroflexa* E. Walker, *Philipp. J. Sci.* 73: 60. 1940.

弯梗紫金牛 *wan geng zi jin niu*

Shrubs 1–2 m tall. Branchlets slightly angular, 1.5–2 mm in diam., densely and minutely reddish brown scaly, glandular papillate, glabrescent. Petiole canaliculate, 4–12 mm; leaf blade elliptic, or lanceolate, 8–15 × 2–4 cm, papery, glabrous, bullate, base cuneate, margin revolute, entire, apex acute or acuminate; lateral veins 15–18 on each side of midrib, slightly raised abaxially, marginal vein present. Inflorescences

terminal, 10–12 cm, paniculate, branches umbellate, rachis strongly flexuous to geniculate. Flowers papery, white, ca. 2 mm. Pedicel 3–6(–10) mm, recurved. Sepals ovate, 0.8–1 mm, glabrous, pellucid punctate, margin crenulate, ciliate, apex acute. Petals nearly free, ovate, glabrous, not punctate, apex acute. Stamens subequalling petals; anthers ovate, punctate dorsally, apex acute to subapiculate. Pistil as long as petals. Style as long as globose ovary, glabrous. Fruit red, globose, ca. 5 mm in diam., distinctly longitudinally ribbed, sparsely punctate. Fl. Apr, fr. Aug.

* Broad-leaved forests, damp places. Hainan.

17. *Ardisia curvula* C. Y. Wu & C. Chen in C. Chen, *Fl. Yunnan*. 1: 340. 1977.

折梗紫金牛 *zhe geng zi jin niu*

Shrubs or small trees, reddish stellate and dendroid tomentose on branchlets, petioles, and inflorescence rachis. Branchlets angular, densely villous when young, glabrescent. Petiole canaliculate, 0.8–1 cm; leaf blade obovate to oblanceolate, 12–19 × 4.5–5.5 cm, papery, smooth, glabrous adaxially, reddish stellate abaxially, inconspicuously pellucid punctate, base cuneate, margin entire and revolute at least basally, apex short acuminate, acumen 5–10 mm; lateral veins 15–20 on each side of midrib, marginal vein present. Inflorescences terminal on specialized lateral branches, paniculate, 6–7 cm, branches umbellate, rachis flexuous. Flowers unknown. Pedicel 3–5 cm, recurved, minutely stellate or puberulent. Fruiting calyx somewhat united at base, glabrescent, lobes broadly ovate, to 1 mm, puberulent inside, margin ciliate, apex acute. Fruit (immature) globose, glabrous; ovules numerous, multiseriate. Fl. Apr.

* Evergreen broad-leaved forests, hillsides; 200–300 m. Yunnan.

18. *Ardisia porifera* E. Walker, *Philipp. J. Sci.* 73: 70. 1940.

细孔紫金牛 *xi kong zi jin niu*

Subshrubs 20–30 cm tall, sometimes stoloniferous but without creeping rhizomes, glabrous. Branchlets terete, (3.5–) 4–5 mm in diam., red puberulent, glabrescent. Petiole marginate, 5–10 mm; leaf blade elliptic to obovate, 8–13 × 3–5.5 cm, leathery, dull adaxially, pale and obscurely pellucid punctate abaxially, base cuneate, margin entire, subrevolute, apex broadly acute or obtuse; lateral veins ca. 8 on each side of midrib, slightly raised on both surfaces, marginal vein absent. Inflorescences racemose or subumbellate, at tips of specialized lateral branches 3–7.5 cm and with 1(–3) reduced leaves. Flowers unknown. Pedicel ca. 1 cm. Fruiting sepals ovate, 1.5–2 mm, puberulent, inconspicuously red punctate, margin opaque, erose, densely red glandular ciliate, apex acute. Pistil obturbinate; ovary puberulent; ovules numerous, multiseriate. Fruit purple or black, globose, ca. 5 mm in diam., longitudinally punctate-lineate. Fl. Aug–Oct.

* Dense mixed forests. Hainan.

19. *Ardisia perreticulata* C. Chen, *Fl. Reipubl. Popularis Sin.* 58: 82. 1979.

花脉紫金牛 *hua mai zi jin niu*

Ardisia punctata Lindley var. *latifolia* E. Walker.

Shrubs to 1 m tall, without creeping rhizomes. Branchlets subterete, (3.5–)4–5 mm in diam., succulent, densely reddish papillose-tomentose, glabrescent. Petiole canaliculate, 5–7(–10) mm, densely black punctate; leaf blade oblanceolate to obovate, (7–)9–14 × 2–5.5 cm, leathery, dull adaxially, pale abaxially, glabrous, densely black punctate, base broadly cuneate, margin flat, entire, apex acuminate or acute, acumen to 0.5 mm, mucronate, lateral veins 7–15 on each side of midrib, marginal vein absent. Inflorescences umbellate, terminal on modified lateral branchlets; 3–6 cm. Flowers unknown. Pedicel erect, 5–10 mm, accrescent in fruit to 20 mm. Sepals suborbicular, 4–6 mm, densely black punctate, margin hyaline, irregular, with a few translucent glandular cilia, apex rounded and notched. Fruit depressed globose, 5–6 mm in diam., densely black punctate and punctate-lineate. Fl. Jun–Jul, fr. Dec–Feb.

* Mixed forests. Guangdong, Guangxi.

20. *Ardisia olivacea* E. Walker, Philipp. J. Sci. 73: 127. 1940.

榄色紫金牛 lan se zi jin niu

Shrubs ca. 1 m tall. Branchlets angular, 2.5–3.5 mm in diam., glabrous. Petiole canaliculate, 1–2 cm; leaf blade oblanceolate or oblong-oblanceolate, 13–24 × 4–7 cm, membranous, densely red punctate, base cuneate, margin entire, apex acute to acuminate; lateral veins 10–12 on each side of midrib, sometimes ending in glands, marginal vein absent. Inflorescences simple, subumbellate, on curved ends of slender, leafless, brown scaly or minutely puberulent specialized lateral branches 5–9.5 cm. Flowers unknown. Pedicel slender, 1–1.5 cm, brown scaly or puberulent. Fruiting sepals broadly ovate, 1–1.5 mm, glabrous, densely black punctate, margin entire, glabrous, apex obtuse or broadly rounded. Fruit red, globose, ca. 6 mm in diam., inconspicuously pellucid punctate. Fr. Nov–Dec.

* Mixed forests, hillsides. Guangxi (Napo).

21. *Ardisia hokouensis* Yuen P. Yang, Bot. Bull. Acad. Sin., n. ser. 30: 297. 1989.

粗梗紫金牛 cu geng zi jin niu

Ardisia crassipes C. Y. Wu & C. Chen (1977), not Lundell (1968).

Shrubs or subshrubs ca. 1 m tall, without creeping rhizomes. Branchlets somewhat angular, 5–7 mm in diam., succulent, reddish glandular papillate, glabrescent. Petiole marginate, 3–4 cm; leaf blade oblong-obovate, ca. 28 × 10 cm, membranous, glabrous, densely black punctate-lineate and punctate, base cuneate, somewhat decurrent, margin repand-crenate distally and entire near base, apex acuminate; lateral veins ca. 21 on each side of midrib, raised on both surfaces, marginal vein evident. Inflorescences umbellate, simple, to 10-flowered, lateral or axillary, glabrous. Flowers membranous, pinkish, ca. 9 mm. Pedicel ca. 3 cm, glabrous, thickened at apex. Sepals ovate or broadly ovate, densely punctate, margin entire, glabrous, apex rounded. Petals nearly free, broadly ovate, ca. 9 × 6 mm, inconspicuously pellucid, margin entire,

apex abruptly acuminate. Stamens shorter than petals; filaments shorter than anthers; anthers broadly ovate, longitudinally dehiscent, not punctate dorsally, apex acute. Pistil as long as petals, glabrous; ovary glabrous; ovules ca. 5, uniseriate. Fruit unknown. Fl. Apr.

* Hillsides, roadsides; 500 m. Yunnan (Hekou).

Ardisia kokouensis is very closely related to *A. rabilis* H. R. Fletcher and *A. translucida* H. R. Fletcher, and may prove to be conspecific upon further study.

22. *Ardisia ensifolia* E. Walker, Philipp. J. Sci. 73: 124. 1940.

剑叶紫金牛 jian ye zi jin niu

Ardisia linearifolia X. W. Wei & M. Y. Xiao.

Shrubs ca. 1 m tall, without creeping rhizomes. Branchlets 1.5–2.5 mm in diam., glabrous, wrinkled. Petiole canaliculate, 3–8 mm; leaf blade linear or linear-lanceolate, 10–12(–20) × 1(–2.5) cm, leathery, glabrous, densely black punctate and punctate-lineate, base cuneate, margin subentire, subrevolute, apex acuminate; lateral veins numerous, inconspicuous, marginal vein obscure. Inflorescences simple, subumbellate, on curved ends of specialized, leafless lateral branches 2–7 cm. Flowers papery, red, ca. 6 mm. Pedicel 1(–2) cm, sparsely brown scaly or minutely puberulent. Sepals elliptic, 2–3(–4) mm, densely punctate, glabrous, margin entire, apex obtuse. Petals nearly free, oblong-ovate, densely punctate, margin entire, apex obtuse. Stamens subequalling petals; filaments shorter than anthers; anthers linear-lanceolate, inconspicuously punctate dorsally, longitudinally dehiscent, apex apiculate. Pistil as long as or slightly longer than petals; ovary glabrous; ovules ca. 6, uniseriate. Fruit reddish, globose, ca. 6 mm in diam., black punctate. Fl. May–Jul, fr. Nov–Jan.

* Evergreen broad-leaved forests, hilly areas, deeply shaded damp places; ca. 700 m. Guangxi, Yunnan.

23. *Ardisia hypargyrea* C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 340. 1977.

柳叶紫金牛 liu ye zi jin niu

Ardisia quinquegona Blume var. *linearifolia* Pitard; *A. salicifolia* E. Walker (1939), not A. de Candolle (1844).

Shrubs ca. 1 m tall, without creeping rhizomes. Branchlets terete, 2.5–3.5 mm in diam., brown scaly when young, glabrescent. Petiole marginate, 5–7 mm; leaf blade narrowly lanceolate, 6–8(–10) × 1.2(–1.5) cm, papery, glabrous, reddish brown scaly abaxially, inconspicuously red punctate, base cuneate, margin entire, subrevolute, apex long acuminate, acumen 1–2 cm; lateral veins numerous, obscure, marginal vein obscure. Inflorescences axillary or subterminal on specialized lateral branches 4–13 cm, subumbellate or cymose. Flowers papery, pink or purple-red, ca. 3 mm. Pedicel slender, ca. 1 cm, accrescent to 2.5 cm in fruit, minutely puberulent or brown scaly when young, glabrescent. Sepals deltate, to 1 mm, sparsely red punctate, brown scaly, margin entire, ciliate, apex acute. Petals nearly free, ovate, obscurely punctate, glabrous, margin entire, apex acute. Stamens ca. 3/4 as long as petals; filaments shorter than anthers; anthers ovate, not

punctate dorsally, apex abruptly acute to apiculate. Pistil as long as or longer than petals. Fruit reddish, globose, ca. 4 mm in diam., punctate, obscurely longitudinally ribbed. Fl. May, fr. Nov–Dec.

Mixed forests, hillsides, valleys, along streams, dark damp places; 700–1600 m. Guangxi, SE Yunnan [Vietnam].

24. *Ardisia cornudentata* Mez in Engler, Pflanzn. IV. 236(Heft 9): 144. 1902.

腺齿紫金牛 xian chi zi jin niu

Ardisia morrisonensis Hayata; *A. remotiserrata* Hayata; *A. stenosepala* Hayata; *A. suishaensis* Hayata; *Bladhia cornudentata* (Mez) Nakai; *B. morrisonensis* (Hayata) Nakai; *B. stenosepala* (Hayata) Nakai.

Shrubs ca. 2 m tall, sparsely glandular papillose-puberulent on branchlets, petioles, and inflorescence rachis. Branchlets terete, 3–5 mm in diam. Petiole canaliculate, marginate, 5–7 mm; leaf blade elliptic-lanceolate or oblanceolate, 7–14(–20) × 2–3.5(–5.5) cm, papery, pellucid punctate, minutely brown scaly abaxially, base cuneate, decurrent, margin serrulate, punctate and with vascularized marginal nodules on teeth, apex acuminate or acute; lateral veins up to 18 on each side of midrib, prominent, marginal vein evident. Inflorescences terminal umbels, on specialized lateral branches. Flowers papery, white, 4–5 mm. Pedicel 1–1.5 cm, usually densely pubescent. Sepals broadly ovate to suborbicular, ca. 1.5 mm, densely punctate, margin entire, ciliate, apex rounded. Petals nearly free, ovate, 4–5 mm, glabrous, punctate, margin entire, apex acute. Stamens subequalling petals; filaments shorter than anthers; anthers narrowly lanceolate, longitudinally dehiscent, punctate dorsally, apex acute. Pistil equalling petals; ovary glabrous, punctate; ovules numerous, multiseriate. Fruit red, becoming black, globose, 6–8 mm in diam., punctate. Fl. Jan–Aug, fr. Aug–Mar.

* Mixed forests, hilly areas; 0–1700 m. Taiwan.

25. *Ardisia lindleyana* D. Dietrich, Syn. Pl. 1: 617. 1839.

山血丹 shan xue dan

Ardisia adenopes Miao, *A. kwangtungensis* E. Walker; *A. punctata* Lindley (Sep 1824), not Jack ex Wallich (Mar–Jun 1824); *A. tsangii* E. Walker; *Bladhia punctata* (Lindley) Nakai; *Tinus punctata* (Lindley) Kuntze.

Shrubs 1–2 m tall, without creeping rhizomes; densely and minutely reddish puberulent on branchlets, petioles, abaxial leaf surface, and inflorescence rachis. Branchlets terete, ca. 2.5 mm in diam. Petiole narrowly marginate, 1–1.5 cm; leaf blade oblong to lanceolate or oblanceolate, (7–)10–12(–18) × (1.5–)2–3.5(–4) cm, leathery or papery, glabrous, base cuneate, margin subentire or undulate, rarely serrate, slightly revolute, prominently punctate, with large vascularized marginal nodules, apex acute or acuminate, rarely obtuse; lateral veins 8–13 on each side of midrib, slightly raised adaxially, marginal vein conspicuous. Umbels on curved ends of specialized lateral branches 3–11 cm. Flowers papery, white, rarely pink, 5–6 mm. Pedicel 0.8–1.2 cm, to 2.5 cm in fruit. Sepals oblong to lanceolate or narrowly ovate, 2–3 mm, punctate, puberulent, margin entire, usually ciliate, apex broad-

ly acute to obtuse. Petals nearly free, elliptic or ovate, punctate, glabrous abaxially, yellow glandular granulate adaxially at base, apex obtuse. Stamens shorter than petals; filaments shorter than anthers; anthers lanceolate, punctate dorsally, longitudinally dehiscent, apex apiculate. Pistil subequalling petals; ovary minutely puberulent, punctate; ovules ca. 5, uniseriate. Fruit dark red, globose, ca. 6 mm in diam., sparsely punctate, somewhat fleshy. Fl. May–Jul, fr. Oct–Dec.

Dense mixed forests, hills, valleys, along streams, dark damp places; 300–1200 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang [N Vietnam].

26. *Ardisia crenata* Sims, Bot. Mag. 45: pl. 1950. 1817.

朱砂根 zhu sha gen

Ardisia bicolor E. Walker; *A. crenata* var. *bicolor* (E. Walker) C. Y. Wu & C. Chen; *A. crispa* (Thunberg) A. de Candolle var. *taquetii* H. Léveillé; *A. konishii* Hayata; *A. kusukusensis* Hayata; *A. labordei* H. Léveillé; *A. lentiginosa* Ker Gawler; *A. linangensis* C. M. Hu; *A. miaoliensis* S. Y. Lu; *Bladhia crenata* (Sims) H. Hara; *B. crispa* Thunberg var. *taquetii* (H. Léveillé) Nakai; *B. lentiginosa* (Ker Gawler) Nakai var. *lanceolata* Masamune.

Shrubs 1–1.5(–3) m tall, without creeping rhizomes, minutely reddish glandular papillate on branchlets, abaxial leaf surface, and inflorescence rachis, early glabrescent. Branchlets terete, 3–4 mm in diam. Petiole narrowly marginate, 6–10 mm, glabrous; leaf blade elliptic, narrowly lanceolate, or oblanceolate, 7–15 × 2–4 cm, leathery or papery, prominently punctate, base cuneate, margin subrevolute, crenate, or undulate, with large vascularized marginal nodules, apex acute or acuminate; lateral veins 12–18 on each side of midrib, marginal vein often hidden by reflexed margin. Inflorescences terminal, umbellate or cymose, on specialized, 2- or 3-leaved lateral branches 4–16(–40) cm. Flowers membranous, white or rarely pinkish, 4–6 mm. Pedicel 7–10 cm. Sepals oblong-ovate, 1–1.5(–2.5) mm, glabrous, punctate, margin entire, apex rounded or obtuse. Petals nearly free, ovate, punctate, glandular papillose adaxially near base, apex acute. Stamens shorter than petals; filaments nearly obsolete; anthers triangular-lanceolate, punctate dorsally, longitudinally dehiscent, acute. Pistil subequalling petals; ovary glabrous, punctate; ovules ca. 5, uniseriate. Fruit red, globose, 6–8 mm in diam., punctate. Fl. May–Jun, fr. Oct–Dec.

Forests, hillsides, valleys, shrubby areas, dark damp places; 100–2400 m. Anhui, Fujian, Guangdong, Guangxi, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Taiwan, SW Xizang, Yunnan, Zhejiang [SW India, Japan, Malaysia, Philippines, Vietnam].

Ardisia crenata is closely related to *A. pseudocrispa* Pitard (= *A. corymbifera* Mez. var. *tubifera* C. Chen), from which it differs in having crenate leaves with a distinct marginal vein. *Ardisia pseudocrispa*, which occurs in Guangxi and Vietnam, has subentire leaves without a marginal vein.

27. *Ardisia conspersa* E. Walker, Bull. Fan Mem. Inst. Biol. 9: 160. 1939.

散花紫金牛 san hua zi jin niu

Ardisia undulata Mez (1902), not C. B. Clarke (1882).

Shrubs 2(–5) m tall, strigose on branchlets, abaxial leaf surface, and inflorescence branches. Branchlets terete, 3–4 mm in diam. Petiole marginate, 5–8 mm; leaf blade oblanceolate to narrowly oblong- or elliptic-lanceolate, 7–11 × 2–3 cm, membranous, sparsely punctate, base cuneate, margin entire or subcrenate, with vascularized marginal nodules, apex caudate-acuminate, acumen 1–2 cm; lateral veins ca. 15 on each side of midrib, inconspicuous, marginal vein absent. Inflorescences terminal panicles of corymbs on specialized lateral branches 30–50 cm. Flowers papery, pink, ca. 6 mm. Pedicel 1–1.5 cm. Sepals oblong-ovate, 2.5–3 mm, epunctate, somewhat puberulent at base, margin entire, apex acute or obtuse. Petals nearly free, oblong or ovate, epunctate, densely glandular papillose adaxially at base, margin entire, apex acute. Stamens ca. 2/3 as long as petals; filaments shorter than anthers; anthers lanceolate, longitudinally dehiscent, punctate dorsally, apex acute. Pistil subequalling petals; ovary glabrous; ovules 4 or 5, uniseriate. Fruit red, globose, ca. 6 mm in diam., glabrous, punctate.

Evergreen broad-leaved forests, dark damp places, valleys; 900–1400 m. Guangxi, Yunnan [Vietnam].

28. *Ardisia merrillii* E. Walker, J. Arnold Arbor. 23: 351. 1942.

白花紫金牛 bai hua zi jin niu

Shrubs ca. 2 m tall. Branchlets terete, 2.5–4 mm in diam., densely and minutely reddish glandular papillate, glabrescent. Petiole narrowly marginate, 5–8 mm; leaf blade elliptic or lanceolate, 7–10 × 2–4 cm, papery or subleathery, minutely reddish glandular papillate abaxially, base cuneate, margin subentire or crenulate and punctate, with marginal vascularized nodules, apex acute or acuminate, acumen to 0.5 mm; lateral veins 11–15 on each side of midrib, raised on both surfaces, marginal vein absent. Panicles terminal corymb of umbels, minutely puberulent, on specialized lateral branches 11–30 cm. Flowers membranous, hyaline, ca. 6 mm. Pedicel 6–13 mm, minutely puberulent. Sepals narrowly ovate, 2.5–3 mm, epunctate, glabrous outside, short puberulent inside, margin entire, glabrous, apex long attenuate. Petals nearly free, ovate, 5–6 mm, epunctate, glabrous, margin entire, glabrous, apex long attenuate. Stamens shorter than petals; filaments shorter than anthers; anthers lanceolate, not punctate dorsally, apex acute. Pistil subequalling petals; ovary glabrous; ovules ca. 5, uniseriate. Fruit reddish, globose, ca. 6 mm in diam., sparsely punctate. Fl. May–Jun, fr. Oct–Dec.

Dense mixed forests, shrubby areas, hillsides; 600–1200 m. Guangxi, Hainan [Vietnam].

29. *Ardisia corymbifera* Mez in Engler, Pflanzenr. IV. 236(Heft 9): 149. 1902.

伞型紫金牛 san xing zi jin niu

Shrubs 1–3(–5) m tall, without creeping rhizomes. Branchlets subterete, 3–5 mm in diam., reddish glandular papillate, early glabrescent. Petiole canaliculate, 5–8 mm, usually sparsely papillate; leaf blade elliptic to oblanceolate, 11–13 × 2–3 cm, papery, densely punctate, glabrous or pu-

berulent to crisped, strigose abaxially, base broadly cuneate, margin entire to undulate or rarely crenate and punctate, with vascularized nodules, apex acuminate; lateral veins ca. 15 on each side of midrib, obscure, marginal vein absent. Inflorescences terminal panicles of corymbs, papillate, on specialized lateral branches 20–40(–50) cm. Flowers papery, white or pinkish to red, 6–8 mm. Pedicel 1–1.5 cm, papillate, glabrescent. Sepals ovate to elliptic, 2.5–3 mm, sparsely glandular papillate abaxially, glabrescent, densely black punctate, margin entire, glabrous, apex obtuse. Petals nearly free, broadly ovate, densely black punctate, sparsely glandular granulose adaxially at base, margin entire, apex acute. Stamens ca. 2/3 as long as petals; filaments shorter than anthers; anthers ovate or broadly lanceolate, longitudinally dehiscent, densely punctate dorsally, apex acute. Pistil subequal to petals; ovary punctate, glabrous; ovules ca. 5, uniseriate. Fruit reddish, globose, ca. 8 mm in diam., minutely punctate. Fl. Apr–May, fr. Nov–Jan.

Evergreen broad-leaf and mixed forests, hillsides and scrub; 300–1800 m. Guangxi, Yunnan [Vietnam].

30. *Ardisia virens* Kurz, For. Fl. Brit. Burma 2: 575. 1877.

钮子果 niu zi guo

Ardisia flaviflora C. Chen & D. Fang; *A. maculosa* Mez; *A. maculosa* var. *symplocifolia* C. Chen; *A. oldhamii* Mez; *A. patens* Mez; *A. radians* Hemsley & Mez; *A. rectangularis* Hayata; *A. stellifera* Pitard; *A. tonkinensis* Aug. de Candolle; *A. virens* var. *annamensis* Pitard; *Blaudia oldhamii* (Mez) Masamune; *B. radians* (Hemsley & Mez) Masamune; *Tinus virens* (Kurz) Kuntze.

Shrubs or small trees, 1–3 m tall. Branchlets subterete, 1–2 mm in diam., sparsely glandular papillate, early glabrescent. Petiole canaliculate, 1(–1.5) cm; leaf blade elliptic, lanceolate, or obovate, 9–26 × 2.5–5(–7) cm, papery, dull, glabrous or sometimes sparsely and minutely glandular papillate abaxially, base cuneate, margin crisped or undulate, with vascularized nodules, densely black punctate, apex acute to subacuminate; lateral veins 15–30 on each side of midrib, marginal vein evident. Inflorescences terminal compound umbels, glabrous, on specialized lateral branches (15–)30–50 cm. Flowers papery, white or pink, 7–8 mm. Pedicel 1.5–3 cm, sparsely glandular papillate in bud, early glabrescent. Sepals ovate to elliptic, subrounded, 2.5–3.5 mm, together with petals densely black punctate, glabrous abaxially, sparsely glandular granulose adaxially at base. Petals nearly free, ovate or broadly ovate, apex acute. Stamens subequalling petals; filaments shorter than anthers; anthers lanceolate or subovate, longitudinally dehiscent, punctate dorsally, apex apiculate. Pistil subequalling petals; ovary punctate, glabrous; ovules ca. 5, multiseriate. Fruit red or blackish red, globose, 7–9(–10) mm in diam., densely black punctate. Fl. May–Jul, fr. Oct–Mar.

Dense evergreen broad-leaved forests, hillsides, dark damp places, valleys, humus-rich soils; 300–2700 m. Guangxi, Guizhou, Hainan, Taiwan, Yunnan [India, Indonesia, Myanmar, Thailand, Vietnam].

Ardisia virens is extremely closely related to *A. hanceana* Mez. The separation of groups based on presence or absence of papillae on the inflorescence rachis and branchlets is tentative pending further study. *Ardisia maculosa* differs from *A. virens* only by minor quantitative characters.

31. *Ardisia alutacea* C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 346. 1977.

显脉紫金牛 xian mai zi jin niu

Shrubs 0.4–1.5 m tall. Branchlets terete, 1–2 mm in diam., very sparsely bifurcate glandular puberulent, early glabrescent. Petiole canaliculate, 8–10 mm; leaf blade elliptic, lanceolate, or obovate, 8–12.5 × 3–4.5 cm, leathery, glabrous, base cuneate, margin shallowly crenate, with vascularized nodules, abaxially with reddish bifurcate glandular trichomes, pellucid punctate, apex acute; lateral veins 7–9 on each side of midrib, prominent, marginal vein evident. Inflorescences compound cymose, at tips of specialized lateral branches 5–11 cm, subglabrous. Flowers papery, purplish red, 7–9 mm. Pedicel 1.5–2 cm, somewhat dilated at apex, punctate. Sepals broadly ovate, 1.3–1.5 mm, densely black punctate, margin entire, glabrous, apex obtuse. Petals nearly free, subdeltate, 8–9 mm, glabrous, densely black punctate, margin entire, apex acuminate. Stamens shorter than petals; filaments obsolete; anthers lanceolate-ovate, punctate especially dorsally. Pistil as long as petals, glabrous; ovary punctate; ovules ca. 6, uniseriate. Fruit purplish red, globose, ca. 8 mm in diam., sparsely punctate; persistent sepals covering base of fruit. Fl. May–Jun, fr. Dec.

* Dense mixed forests, valleys, dark damp places; 800–1700 m. SE Yunnan.

32. *Ardisia shweliensis* W. W. Smith, Not. Roy. Bot. Gard. Edinburgh 12: 194. 1920.

瑞丽紫金牛 rui li zi jin niu

Shrubs 1–2 m tall, without creeping rhizomes, rusty scaly on branchlets, abaxial leaf surface and inflorescence rachis. Branchlets semiterete, 5–7 mm in diam. Petiole canaliculate, 1–1.5 cm; leaf blade oblong or elliptic, 8–15 × 4–5 cm, membranous, densely black punctate and punctate-lineate, especially abaxially, base cuneate, margin undulate-crested or subentire, punctate, with a few vascularized marginal nodules, apex acuminate; lateral veins ca. 15 on each side of midrib, marginal vein absent. Inflorescences terminal, paniculate, branches cymose, on specialized, 2- or 3-leaved lateral branches 7–11(–14) cm. Flowers membranous, white, ca. 7 mm. Pedicel 1–1.3 cm, clavate, glabrous. Sepals ovate or elliptic, 1.2–2 mm, punctate, margin entire, glabrous, apex broadly obtuse or rounded. Petals nearly free, ovate or narrowly ovate, margin entire, inconspicuously punctate, apex acute. Stamens ca. 3/4 as long as petals; filaments much shorter than anthers; anthers lanceolate, longitudinally dehiscent, not punctate dorsally, apex apiculate. Pistil subequaling petals; ovary glabrous; ovules ca. 6, uniseriate. Fruit red, globose, ca. 7 mm in diam., pellucid punctate. Fl. May–Jun, fr. Nov–Dec.

Mixed forests, hillsides, damp places; 1700–2300 m. SW Yunnan [India].

33. *Ardisia malipoensis* C. M. Hu, Bot. J. South China 1: 8. 1992.

麻栗坡罗伞 ma li po luo san

Shrubs ca. 40 cm, densely and minutely rusty scaly on branchlets, petioles, abaxial leaf surface, and inflorescence rachis. Branchlets subterete, 1–2 mm in diam. Petiole marginate, 5–8 mm; leaf blade elliptic or oblanceolate, 6–11 × 2.5–4 cm, papery, inconspicuously pellucid punctate, base cuneate, margin glabrous, crenulate to subentire, with vascularized nodules, apex acuminate, acumen to 0.6 cm; lateral veins 5–8 on each side of midrib, marginal vein prominently raised. Inflorescences cymose panicles of umbels, 3.5–6 cm, on 2- or 3-leaved lateral branches. Flowers papery, pinkish purple, 8–10 mm. Pedicel 5–9 mm. Sepals ovate or elliptic, 3.5–4 mm, densely black punctate, margin entire, opaque, glabrous, apex rounded. Petals nearly free, ovate, densely black punctate, glabrous, margin entire, opaque, glabrous, apex obtuse or rounded. Stamens ca. 2/3 as long as petals; filaments subobsolete; anthers lanceolate, 1.8–2 mm, longitudinally dehiscent, dorsally punctate, apex attenuate. Pistil subequaling petals; ovary ovoid, glabrous; ovules 6–8, uniseriate. Fruit globose, 4–6 mm in diam. Fl. May, fr. Dec.

* Mixed forests, hillsides; 1500–1700 m. SE Yunnan.

34. *Ardisia hanceana* Mez in Engler, Pflanzenr. IV 236(Heft 9): 149. 1902.

大罗伞树 da luo san shu

Ardisia elegantissima H. Léveillé; *A. impressa* H. R. Fletcher; *A. thorelii* Pitard.

Shrubs 1–3 m tall, glabrous. Branchlets terete, 3–5 mm in diam. Petiole canaliculate, narrowly winged, 1–1.3 cm; leaf blade elliptic, oblanceolate, or rarely ovate, 9–12(–15) × 2.5–4 cm, leathery, punctate, sometimes sparsely pitted abaxially, base cuneate and decurrent, margin crenate or subentire, with vascularized nodules, epunctate, apex acute or acuminate; lateral veins 12–15 on each side of midrib, marginal vein obscure. Inflorescences terminal corymbose panicles of umbels, on specialized lateral branches 30–50 cm. Flowers membranous, pink, rarely red or white, (5–)6–7(–8) mm. Pedicel 1–2 cm, glabrous. Sepals lanceolate, 2.3–2.5 mm, epunctate, margin glabrous, entire, apex acute or obtuse. Petals united at base, broadly ovate, epunctate, sparsely glandular granulose adaxially near base, margin entire, glabrous, apex acute or obtuse. Stamens ca. 2/3 as long as petals; filaments much shorter than anthers; anthers ovate or lanceolate, longitudinally dehiscent, not punctate, apex acute. Pistil subequaling petals; ovary glabrous; ovules ca. 5, uniseriate. Fruit dull red or black, globose, 8–10(–12) mm in diam., pellucid punctate. Fl. Jun–Jul, fr. Dec–Apr.

Mixed forests, hillsides, valleys, along streams, dark damp places; ca. 1300 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang [Vietnam].

35. *Ardisia crassinervosa* E. Walker, Philipp. J. Sci. 73: 86. 1940.

粗脉紫金牛 cu mai zi jin niu

Ardisia aquifolioides W. Z. Fang & K. Yao; *A. crassirhiza* Z. X. Li & F.W. Xing ex C. M. Hu; *A. nervosa* E. Walker (1940), not H. R. Fletcher (1937).

Shrubs ca. 2 m tall, glabrous. Branchlets angular, 1–1.5 mm in diam., reddish glandular papillate. Petiole canaliculate, 3–5 mm; leaf blade elliptic, oblanceolate, or rarely obovate, 10–17 × 3–6 cm, leathery, glabrous, base cuneate, margin somewhat undulate with vascularized nodules, apex acute or subacuminate; lateral veins numerous, raised on both surfaces, marginal vein conspicuous. Inflorescences terminal, simple or compound subumbellate, on specialized lateral branches 8–20 cm and with 2 or 3 subapical leaves. Flowers papery, pink, purplish, or white, 5–6 mm. Pedicel ca. 1 mm, punctate at least when young. Sepals broadly ovate to suborbicular, 3.8–4 mm, densely orange punctate, glabrous, base auriculate, margin entire, scarious, apex rounded or obtuse. Petals nearly free, ovate, densely punctate, densely glandular granulate adaxially, glabrous abaxially, margin entire, opaque, apex obtuse. Stamens subequalling petals; filaments much shorter than anthers; anthers lanceolate, longitudinally dehiscent, epunctate or inconspicuously punctate dorsally, apex apiculate. Pistil subequalling petals; ovary glabrous, punctate; ovules ca. 9, uniseriate. Fruit red, globose, ca. 9 mm in diam., densely punctate. Fl. Jan–Jul, fr. Jul–Jan.

* Dense broad-leaved forests, hillsides, scrub, open fields, valleys, damp places, along streams; 100–1800 m. Hainan.

36. *Ardisia pubivenula* E. Walker, Philipp. J. Sci. 73: 146. 1940.

毛脉紫金牛 mao mai zi jin niu

Subshrubs to 0.5 m, stoloniferous. Stems terete, 3–5 mm in diam., reddish villous-tomentose. Petiole canaliculate, 4–10 cm, densely reddish villous or villous-tomentose; leaf blade broadly ovate or elliptic, (6–)10–15 × 3–7.5 cm, papery, densely villous-tomentose abaxially, glabrescent, bullate adaxially, base broadly rounded or subcordate, margin finely serrate with apiculate reflexed teeth, apex broadly acute; lateral veins 8–12 on each side of midrib, at acute angles to midrib, marginal vein absent. Inflorescences lateral, in axils of bracts, racemose, ca. 3 cm, puberulent. Flowers unknown. Pedicel ca. 8 mm, slender, puberulent. Fruiting sepals broadly ovate, ca. 1.5 mm, puberulent, obscurely punctate, margin ciliate, apex obtuse. Fruit red, globose, 6–7 mm in diam., minutely puberulent, punctate. Fr. Dec–Feb.

* Broad-leaved forests, hillsides, moist places, along streams; ca. 800 m. Guangxi, Hainan.

37. *Ardisia replicata* E. Walker, Bull. Fan Mem. Inst. Biol. 9: 169. 1939.

卷边紫金牛 juan bian zi jin niu

Shrubs 20(–100) cm tall, stoloniferous. Stems terete, 3–4 mm in diam., densely reddish villous or villous-tomentose. Petiole canaliculate, 2–6 cm, densely villous; leaf blade ovate to elliptic, 10–16 × 5–8 cm, minutely rusty puberulent especially on veins when young, glabrescent adaxially, base rounded, margin serrulate with apiculate teeth reflexed when dry, apex broadly acute; midrib blackish villous or pubescent

abaxially; lateral veins 8–13(–15) on each side of midrib, marginal vein evident. Inflorescences subumbellate, grouped in racemes or panicles 5–7 cm; peduncle rusty pubescent; bracts subulate, ca. 8 mm. Flowers pinkish, ca. 4 mm. Pedicel ca. 6 mm. Sepals elliptic-ovate or ovate, 1–1.5 mm, ± punctate, glabrous or puberulent, margin ciliate, apex acute or obtuse. Petals ovate, glabrous, punctate, apex acute or obtuse. Stamens ca. 2/3 as long as petals; anthers lanceolate, apiculate, not punctate dorsally. Ovary pubescent. Fruit dull reddish, globose, ca. 6 mm in diam., without glands or obscurely punctate, pubescent. Fl. Jun–Jul.

Dense broad-leaved forests, hilly areas, shady damp places; 700–1400 m. SE Yunnan [Vietnam].

38. *Ardisia scalarinervis* E. Walker, J. Wash. Acad. Sci. 21: 477. 1931.

梯脉紫金牛 ti mai zi jin niu

Subshrubs stoloniferous, to 50 cm tall. Stems decumbent, somewhat angular, 3–4 mm in diam., densely reddish stramineous long villous-tomentose. Leaves clustered at stem apex; petiole marginate, 1–4 cm, densely blackish or rusty tomentose or villous; leaf blade obovate or oblanceolate, 20–30 × 7–8 cm, papery, sparsely raised punctate near margin and apex, glabrous adaxially, sparsely and minutely puberulent abaxially, densely hispid-villous and rusty crisped hairy along midrib, base obtuse, margin serrulate with apiculate teeth, apex acute or subacuminate; lateral veins 25 or more on each side of midrib, marginal vein present. Inflorescences axillary, compound umbellate, ca. 3 cm, villous; umbels ca. 7-flowered. Flowers ca. 4 mm. Pedicel ca. 1.5 cm. Sepals triangular-ovate, ca. 1.5 mm, rusty puberulent, not punctate, margin minutely ciliate, apex acute. Petals ovate or oblong-ovate, glabrous, punctate, apex acute. Stamens shorter than petals; anthers ovate, not punctate dorsally, apex acute or submucronate. Ovary hairy. Fruit red or blackish, globose, 5–7 mm in diam., not punctate, minutely puberulent or glabrous. Fr. Feb–Apr.

* Broad-leaved forests, valleys, dark and moist places; 1100–1600 m. S Yunnan.

39. *Ardisia pingbienensis* Yuen P. Yang in Yuen P. Yang & Dwyer, Taiwania 34: 270. 1989.

长穗紫金牛 chang sui zi jin niu

Ardisia longipedunculata C. Y. Wu & C. Chen (1977), not King & Gamble (1906).

Subshrubs stoloniferous, to 0.5 m. Stems decumbent; branchlets terete, 5–7 mm in diam., densely rusty villous, glabrescent. Petiole canaliculate, broadly marginate, 3.5–7.5 cm, densely rusty villous; leaf blade broadly elliptic, 15–18 × 7.5–8.5 cm, papery, glabrous or midrib hairy adaxially, densely rusty-villous, especially on veins abaxially, base broadly cuneate or subrounded, margin pectinate-dentate, teeth apiculate, punctate, apex acuminate; lateral veins ca. 28 on each side of midrib, usually at right angles to midrib, marginal vein obscure. Inflorescences axillary near stem apex, subumbellate in panicles, 5.5–7.5 cm. Flowers pink, ca. 4 mm, pink. Pedicel 3–8 mm, rusty pubescent. Sepals ovate, ca. 2 mm, sparsely

rusty puberulent, punctate, margin sparsely ciliate, apex acute. Petals broadly ovate, glabrous, all densely punctate, apex obtuse. Stamens shorter than petals; anthers ovate or broadly lanceolate, with or without glands dorsally. Ovary densely puberulent; ovules ca. 6, uniseriate. Fruit unknown. Fl. May.

* Broad-leaved forests, valleys; 900–1000 m. SE Yunnan.

40. *Ardisia dasyrhizomatica* C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 358. 1977.

粗茎紫金牛 cu jing zi jin niu

Shrubs subsucculent, ca. 50 cm tall, stoloniferous, glabrous. Stems terete, 7–10 mm in diam., minutely glandular granulate, early glabrescent. Leaves pseudovercillate; cataphylls present, 1.6–2.5 cm; petiole deeply marginate, ca. 2 cm, crisp winged; leaf blade broadly elliptic-obovate or obovate, 23–35 × 11–16 cm, membranous, minutely puberulent, sparsely punctate, base cuneate, decurrent, margin subrevolute, pectinate-dentate, teeth apiculate, apex obtuse; lateral veins ca. 15 on each side of midrib, arcuate, curving distally from midrib to margin, marginal vein inconspicuous. Inflorescences axillary, racemes or panicles of umbels, 8–9 cm. Flowers 3–4 mm. Pedicel 1 cm or longer, puberulent. Sepals ovate, ca. 1.5 mm, united 1/3 their length or less, glabrescent, ± punctate, margin sparsely ciliate, apex acute or obtuse. Petals nearly free, broadly elliptic or ovate, prominently black punctate, margin entire, apex obtuse or subrounded. Stamens shorter than petals; filaments obsolete; anthers lanceolate or ovate, minutely punctate, apex acute. Pistil slightly shorter than petals; ovary puberulent; ovules numerous, in 3 series. Fruit unknown. Fl. Apr–May.

* Dense evergreen broad-leaved forests; ca. 100 m. SE Yunnan (Hekou).

41. *Ardisia gigantifolia* Stapf, Bull. Misc. Inform. Kew 1906: 74. 1906.

走马胎 zou ma tai

Ardisia, perpendicularis E. Walker; *A. pseudovercillata* Merrill; *Chloranthus kiangsiensis* Metcalf.

Shrubs or subshrubs stoloniferous, 1–1.5(–3) m tall. Branchlets angular, ca. 5 mm in diam., papillose puberulent when young, glabrescent. Leaves pseudovercillate; petiole 2–4 cm, with narrow crisp wing; leaf blade elliptic to obovate or oblanceolate, 25–48 × 5–19 cm, membranous, prominently punctate, glabrous or minutely puberulent along veins abaxially, base cuneate, margin flat, pectinate-dentate, teeth apiculate, apex obtuse to subacuminate; lateral veins 15–20 on each side of midrib, marginal vein absent. Inflorescences terminal or rarely axillary, pyramidal, racemose-paniculate group of subumbels 20–35 × ca. 10 cm, glabrous or minutely puberulent. Flowers papery, white or pinkish, 4–5 mm. Pedicel 1–1.5 cm, slender. Sepals subdeltate or ovate, 1.5–2 mm, sparsely puberulent, prominently punctate, margin entire, glabrous, apex acute. Petals nearly free, ovate, sparsely punctate, margin entire, glabrous, apex acute. Stamens ca. 2/3 as long as petals; filaments obsolete; anthers ovate, not punctate dorsally, apex apiculate. Pistil subequalling petals; ovary subglabrous or puberulent; ovules uniseriate. Fruit reddish, glo-

bose, ca. 6 mm in diam., glabrous, longitudinally striate, sparsely punctate. Fl. Apr–Jul, fr. Oct–Dec.

Broad-leaved forests, hillsides, valleys, moist ravines, stream banks, shady damp places; 1000–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Yunnan [Indonesia, Malaysia, Thailand, Vietnam].

Ardisia maingayi may belong here. While its type has smaller leaves, inflorescences, and petioles, no qualitative feature has been found to separate it from *A. gigantifolia*. It is possible that the type represents diminutive forms or individuals flowering precociously.

42. *Ardisia ramondiiformis* Pitard in Lecomte, Fl. Indo-Chine 3: 812. 1930.

梯脉紫金牛 ti mai zi jin niu

Subshrubs to shrubs, stoloniferous, 50–70 cm. Branchlets terete, succulent, 7–10 mm in diam., hirsute-tomentose with simple stramineous hairs. Leaves pseudovercillate; petiole deeply canaliculate, broadly winged by decurrent blade, up to 2 cm; leaf blade oblanceolate or obovate, rarely elliptic, 20–40 × 6–12.6 cm, papery, base attenuate or cuneate, margin pectinate-dentate, teeth apiculate, apex broadly acute or obtuse; midrib hirsute adaxially when young, glabrescent, stramineous hirsute abaxially; lateral veins ca. 25–35 on each side of midrib, marginal vein absent. Inflorescences axillary panicles, branches in umbels, ca. 10 cm, appressed long hirsute and puberulent. Flowers papery, pink or red, 3–4 mm. Pedicel 5–8(–10) mm, reddish hirsute. Sepals ovate, 1.3–1.5 mm, puberulent, punctate, margin ciliate, apex acute. Petals nearly free, broadly elliptic or ovate, black punctate, glabrous, margin entire, apex obtuse or rounded. Stamens subequalling petals; filaments obsolete; anthers ovate, not punctate dorsally, apex acute. Pistil subequalling petals; ovary puberulent; ovules 4–5(–7), uniseriate. Fruit red, globose, 7–8 mm in diam., pubescent, pellucid punctate. Fl. Apr, fr. Dec.

Dense broad-leaved forests, hillsides, valleys, dark damp places, along streams, rock crevices. Hainan [Vietnam].

Yang & Dwyer (Taiwania 34: 281. 1989) reported that *Ardisia silvestris* Pitard occurs in China, based on *How 72037*. An examination of type material of *A. ramondiiformis* and *A. silvestris* reveals that the entity in China belongs to the former species.

43. *Ardisia balansana* Yuen P. Yang in Yuen P. Yang & Dwyer, Taiwania 34: 245. 1989.

束花紫金牛 shu hua zi jin niu

Subshrubs 25–50(–100) cm, long stoloniferous. Stems glabrous or puberulent. Leaves alternate or pseudovercillate; petiole marginate, narrowly winged, 8–10 mm; leaf blade broadly elliptic to narrowly lanceolate, 8–11(–20) × 4–5.5(–7) cm, papery, obscurely pellucid punctate, glabrous adaxially, sparsely minutely puberulent or reddish glandular papillate abaxially especially along midrib and lateral veins, base cuneate, decurrent, margin finely serrate, teeth apiculate, apex acute to subacuminate apically; lateral veins 8–13 on each side of midrib, marginal vein obscure. Inflorescences axillary, paniculate, branches cymose, 5(–11) cm. Flowers papery, white, becoming pinkish, 4–5 mm. Pedicel 3–5 mm, to 1 cm in fruit, puberulent. Sepals ovate, 1.6–2 mm, minutely pube-

ruled abaxially near base, prominently punctate, margin entire, glabrous, apex broadly acute to obtuse. Stamens subequalling petals; filaments obsolete; anthers lanceolate, punctate dorsally, apex apiculate. Pistil shorter than petals; ovary puberulent; ovules 4 or 5, uniseriate. Fruit red, globose, 4–8 mm in diam., long punctate, puberulent, glabrescent.

Dense evergreen broad-leaved forests, moist ravines, stream banks; 1000–1500 m. SE Yunnan [Vietnam].

44. *Ardisia purpureovillosa* C. Y. Wu & C. Chen ex C. M. Hu, Acta Bot. Austro-Sin. 6: 29. 1990.

紫脉紫金牛 *zi mai zi jin niu*

Shrubs 0.5–2 m tall. Branchlets angular, 3–3.5 mm in diam., subsucculent, densely crisped reddish hirtellous-tomentose, glandular trichomes uniseriate, multicellular. Leaves pseudovercillate; petiole marginate, 1–1.5 cm, not winged; leaf blade lanceolate or elliptic-lanceolate, rarely obovate, 15–22(–25) × 3.8–5(–8) cm, membranous, glossy adaxially, densely red punctate in areolae, subglabrous or sparsely puberulent especially abaxially, base cuneate, decurrent, margin serrate, apex acuminate; lateral veins ca. 18 on each side of midrib, marginal vein obscure. Inflorescences compound umbellate, densely tomentose, terminal on lateral branches 6–10(–12) cm and with 2 or 3 small lanceolate leaves. Flowers papery, pinkish or reddish purple, 5–7 mm. Pedicel 7–12 mm, densely tomentose. Sepals lanceolate, 2.3–2.5 mm, densely tomentose abaxially, glabrous adaxially, red punctate, margin entire, long ciliate. Petals nearly free, broadly ovate, minutely punctate, margin entire, glabrous, apex acute or obtuse. Stamens somewhat shorter than petals; filaments obsolete; anthers broadly ovate, longitudinally dehiscent, not punctate dorsally, apex apiculate. Pistil subequalling petals; ovary glabrous or puberulent; ovules 8–12, biseriata. Fruit globose, ca. 6 mm in diam., tomentose, glabrescent, punctate. Fl. Apr–May, fr. Sep–Nov.

* Evergreen broad-leaved forests, limestone hillsides, valleys, moist places; 600–1800 m. Guangxi, Hainan, Yunnan.

45. *Ardisia ordinata* E. Walker, Philipp. J. Sci. 73: 137. 1940.

轮叶紫金牛 *lun ye zi jin niu*

Subshrubs to 50 cm, with creeping rhizome, appressed rusty tomentose on branchlets, petioles, leaf veins, sepals, and pedicels. Branchlets terete, 2–3 mm in diam. Leaves pseudovercillate; petiole canaliculate, 1–2 cm; leaf blade papery, 6–9 × 2.5–4.5 cm, base obtuse to rounded, progressively less tomentose from midrib to tertiaries, conspicuously punctate, dull adaxially, margin finely serrate, apiculate. Inflorescences lateral on internodes, subumbellate, few flowered, 0.8–2 cm, rusty strigose; bracts lanceolate to linear, 1–2 mm. Flowers unknown. Pedicel ca. 5 mm, strigose. Fruiting sepals ovate, ca. 1.5 mm, ciliate, punctate, apex acute. Immature fruit purple or reddish, puberulent. Fl. Jun, fr. Feb.

* Dense woods. Hainan (Loktung).

46. *Ardisia japonica* (Thunberg) Blume, Bijdr. 690. 1826.

紫金牛 *zi jin niu*

Bladhia japonica Thunberg, Nov. Gen. Pl. 1: 7. 1792;
Tinus japonica (Thunberg) Kuntze.

Subshrubs stoloniferous. Stems 20–30(–40) cm, minutely puberulent when young, glabrescent. Leaves opposite or subwhorled; petiole 6–10 mm, minutely puberulent; leaf blade elliptic to elliptic-obovate, or elliptic-lanceolate, 4–7 × 1.5–4 cm, papery to subleathery, base cuneate, margin serrulate, ± punctate, apex acute; lateral veins 5–8 on each side of midrib, veinlets prominently reticulate. Inflorescences axillary or subterminal, subumbellate, 3–5-flowered, puberulent; peduncle ca. 5 mm, slender; bracts lanceolate, ca. 1 mm, puberulent or ciliate. Flowers pink or white, 5(or 6)-merous, 4(–5) mm. Pedicel 7–10 mm, usually curved, puberulent. Sepals ovate, to 1.5 mm, sometimes punctate, glabrous, margin ciliate, apex obtuse or acute to acuminate. Petals broadly ovate, 4(–5) mm, densely punctate, apex acute. Stamens shorter than petals; anthers lanceolate-ovate or ovate, punctate dorsally, apex acute. Ovary glabrous; ovules ca. 15, in 3 series. Fruit red becoming blackish, globose, 5–6 mm in diam., ± punctate, glabrous, smooth. Fl. Apr–Jun, fr. Nov–Jan.

Mixed forests or bamboo woods, hillsides, dark damp places; to 1200 m. Anhui, Fujian, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea].

47. *Ardisia pusilla* A. de Candolle, Trans. Linn. Soc., London 17: 126. 1834.

九节龙 *jiu jie long*

Shrubs or subshrubs, stoloniferous. Stems 15–40 cm, 1.5–2(–3) mm in diam. Leaves opposite or whorled; petiole 3–8 mm, pubescent; leaf blade elliptic or obovate, 2.5–6 cm, papery, sparsely punctate, strigose adaxially, pubescent and villous abaxially, base cuneate or subrounded, margin serrate or denticulate, apex acuminate, acute, or obtuse; lateral veins 5–9 on each side of midrib, conspicuous, marginal vein obscure. Inflorescences simple, lateral, umbellate, pubescent and hirsute or villous; peduncle 1–3.5 cm. Flowers white or pinkish to reddish, (3–)4 mm. Pedicel slender, ca. 6 mm. Sepals linear- or subulate-lanceolate, pilose and villous, punctate. Petals broadly ovate, punctate, apex acute or obtuse. Stamens to subequalling petals; anthers ovate, punctate dorsally, acute and somewhat apiculate. Ovary glabrous; ovules 5 or 6, uniseriate. Fruit reddish, globose, 5–6 mm in diam., punctate, glabrous or puberulent. Fl. May–Jul, fr. Jul–Dec.

Dense mixed forests, hilly areas, roadsides, along streams, shady damp places, rock crevices; 200–700 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Taiwan [Japan, Korea, Malaysia, Philippines].

48. *Ardisia faberi* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 64. 1889.

月月红 *yue yue hong*

Ardisia castaneifolia H. Léveillé (1911), not Mez (1902);
A. cavaleriei H. Léveillé; *A. faberi* var. *oblanceifolia* C. Chen;
Tinus faberi (Hemsley) Kuntze.

Shrubs or subshrubs, stoloniferous. Stems 15–30 cm, densely rusty crisped villous. Leaves opposite or whorled; petiole 3–8 mm, densely crisped villous; leaf blade ovate- to lanceolate-elliptic or oblanceolate, 5–10 × 1.8–4 cm, papery, not glandular, crisped villous, base cuneate, margin coarsely serrate, apex acute or acuminate; lateral veins 5–9 on each side; marginal veins absent. Inflorescences in axils of whorled leaves or alternate subulate bracts, subumbellate, few flowered, hirsute; peduncle 1.5–2.5 cm. Pedicel 7–10 mm, crisped villous. Flowers white to pinkish, 4–5(–6) mm. Sepals linear-lanceolate, ca. 5 mm, densely villous. Petals broadly ovate, ± glandular, glabrous, apex acute or obtuse. Stamens ca. 2/3 length of petals; anthers ovate, apiculate, not glandular on back. Ovary glabrous; ovules 5, in 1 series. Fruit red, globose, ca. 6 mm in diam., not punctate, glabrous or puberulent. Fl. May–Jul, fr. Nov–Jan.

* Mixed forests, valleys, along streams, roadsides, rock crevices, dark damp places; 1000–1300 m. Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Sichuan, Yunnan.

49. *Ardisia maclurei* Merrill, Philipp. J. Sci. 21: 351. 1922.

心叶紫金牛 xin ye zi jin niu

Ardisia sciophila T. Suzuki; *Bladhia sciophila* (T. Suzuki) Nakai.

Subshrubs stoloniferous. Stems 4–15 cm, densely rusty crisped villous when young, glabrescent. Leaves alternate, rarely almost whorled; petiole 0.5–2.5 cm, rusty pilose; leaf blade ovate- or oblong-elliptic, 4–6 × 2.5–4 cm, papery, densely pilose, base cordate, margin irregularly serrate, ciliate, apex acute to obtuse; lateral veins ca. 6 on each side of midrib, prominent, ending in teeth. Inflorescences subterminal, 1 or 2, subumbellate, rusty-villous, 4–6-flowered; peduncle 1.3–4 cm; bracts linear to narrowly lanceolate, 3–5 mm, ciliate or pilose. Flowers purplish or reddish, ca. 4 mm. Pedicel slender, 3–6 mm. Sepals lanceolate, as long as petals, rusty villous, not punctate, margin ciliate, apex acuminate. Petals ovate, glabrous, not punctate, apex acuminate. Stamens slightly shorter than petals; anthers ovate, not punctate dorsally, apex acute. Ovary glabrous; ovules 8–10, in 2 series. Fruit dark reddish, globose, ca. 6 mm in diam., not punctate, glabrous. Fl. May–Jun, fr. Dec–Mar.

* Dense broad-leaved forests, hillsides, valleys, along streams, rock crevices, dark damp places; 200–900 m. Guangdong, Guangxi, Guizhou, Hainan, Taiwan.

50. *Ardisia villosa* Roxburgh, Fl. Ind. 2: 274. 1824.

雪下红 xue xia hong

Ardisia dumetosa Tutcher; *A. trichocarpa* Merrill; *A. villosa* var. *ambovestita* E. Walker; *A. villosa* var. *latifolia* E. Walker; *A. villosa* var. *oblanceolata* E. Walker.

Shrubs 1(–3) m tall, stoloniferous, blackish or rusty villous or hirsute almost throughout, glabrescent. Petiole 5–10 mm; leaf blade elliptic-lanceolate to ovate or oblanceolate, 5–15 × 1.2–5 cm, papery, densely punctate especially abaxially, base cuneate, decurrent, margin subentire, undulate, crenate, or serrate, apex acute or acuminate; lateral veins ca. 15 on

each side of midrib, raised on both sides, marginal vein interrupted. Inflorescences simple or compound umbellate, rusty villous, on leafy or leafless specialized branches 2–15 (–20) cm. Flowers lavender or pink, rarely white, to 8 mm. Pedicel 5–10 mm. Sepals oblong-lanceolate or ligulate, densely punctate, densely villous outside, pubescent inside, apex obtuse. Petals ovate to broadly lanceolate, glabrous, punctate, apex acute. Stamens nearly as long as petals; anthers lanceolate, acute, punctate dorsally. Ovary glabrescent or puberulent; ovules ca. 5, uniseriate. Fruit dark red or blackish, globose, 6–7 mm in diam., hirsute or villous, punctate. Fl. Apr–Jul, fr. Feb–Jul.

Evergreen broad-leaved forests, mountain slopes, roadsides, rock crevices, damp places; 500–1500 m. Guangdong, Guangxi, Hainan, Taiwan, Yunnan [Malaysia].

51. *Ardisia brevicaulis* Diels, Bot. Jahrb. Syst. 29: 519. 1900.

九管血 jiu guan xue

Ardisia bodinieri H. Léveillé; *A. citrifolia* Hayata; *Bladhia brevicaulis* (Diels) Migo; *B. citrifolia* (Hayata) Nakai.

Subshrubs stoloniferous. Stems 10–15 cm, puberulent when young. Petiole 1–1.5(–2) cm, puberulent; leaf blade narrowly ovate to elliptic or suboblong, 7–14(–18) × 2.5–4.8(–6) cm, papery, glabrous adaxially, puberulent abaxially, base cuneate, margin entire, reflexed, obscurely punctate, apex obtuse to rounded; lateral veins (7–)10–13 on each side of midrib, at almost right angles to midrib, marginal vein evident. Inflorescences terminal, umbellate, simple, on curved ends of specialized, puberulent, 1- or 2-leaved lateral branches 2–5 cm. Flowers pink, 4–5 mm. Pedicel 1–1.5 cm. Sepals lanceolate or ovate, ca. 2 mm, sometimes puberulent outside, ciliate, punctate. Petals ovate, ca. 5(–7) mm, glabrous, sparsely and minutely puberulent inside, prominently punctate, apex acute. Stamens shorter than petals; anthers lanceolate, acute or apiculate, punctate dorsally. Ovary glabrous, punctate; ovules ca. 6, uniseriate. Fruit red, globose, ca. 6 mm in diam., punctate. Fl. Jun–Jul, fr. Oct–Dec.

* Mixed forests, dark damp places; 400–1300 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan.

52. *Ardisia primulifolia* Gardner & Champion, Hooker's J. Bot. Kew Gard. Misc. 1: 324. 1849.

莲座紫金牛 lian zuo zi jin niu

Bladhia primulifolia (Gardner & Champion) Masamune; *Tinus primulifolia* (Gardner & Champion) Kuntze.

Subshrubs, rusty pilose throughout, with woody rhizomes. Leaves 4 or 5, alternate or forming a rosette; petiole 5–10 mm, densely pilose; leaf blade elliptic or oblong-obovate, 6–12(–17) × 3–5(–10) cm, papery, long ciliate, minutely punctate, base rounded, margin sparsely and obscurely crenate, apex broadly acute or obtuse; lateral veins ca. 6 on each side of midrib, conspicuous, ending in marginal glands. Inflorescences 1 or 2 in center of rosette, subumbellate or

cymose, densely pilose; peduncle 3–5.5(–19) cm. Flowers reddish, 4–6 mm. Pedicel 6–8 cm, densely rusty pilose. Sepals oblong-lanceolate, subequalling petals, punctate, sparsely covered with long crisp hairs outside, glabrous within, margin ciliate, apex acute. Petals broadly ovate, sparsely punctate, glabrous. Stamens shorter than petals; anthers lanceolate, acute, sparsely punctate dorsally. Ovary sparsely puberulent; ovules 3 or 4, uniseriate. Fruit red, 4–6 mm in diam., somewhat fleshy, punctate, pubescent or glabrescent. Fl. Jun–Jul, fr. Nov–May.

Dense mixed forests, hillsides, dark damp places; 600–1400 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Yunnan [Vietnam].

53. *Ardisia omissa* C. M. Hu, J. Trop. Subtrop. Bot. 3(4): 13. 1995.

光萼紫金牛 *guang e zi jin niu*

Subshrubs evergreen. Stems often simple, 1.5–6(–10) cm, glabrous. Leaves spirally arranged, subsulate; petiole 3–4 mm, pubescent; leaf blade oblong-elliptic, rarely obovate-elliptic, (6–)8–16.5 × 2.5–6 cm, papery, with appressed hairs ca. 0.6 mm chiefly near margin, base broadly cuneate to obtuse, margin sparsely crenate, glandular, apex obtuse to subrounded; lateral veins 6–10 per side, prominent abaxially, at ca. 60° to midrib. Inflorescences axillary, subumbellate, 2–4-flowered; peduncle scapelike, 2–4(–5) cm, rusty pubescent; bracts oblong, 5–6 mm, pubescent near base, obtuse to ± acute; bracteoles 1–2(–3) mm, red punctate. Calyx ca. 3 mm, divided to base; lobes oblong-lanceolate, glabrous, red punctate, apex obtuse. Corolla rose, tube ca. 0.6 mm; lobes narrowly ovate, ca. 4 × 1.6–2 mm, sparsely punctate. Filaments ca. 0.4 mm; anthers lanceolate, ca. 3 mm, apiculate. Ovary glabrous; ovules uniseriate, 4 or 5 per placenta. Style ca. 3 mm. Drupe globose, 4–5 mm in diam., red becoming black. Fl. Jul, fr. Nov–Apr.

* Thick forests near water; 200–700 m. Guangdong, Guangxi.

54. *Ardisia verbascifolia* Mez in Engler, Pflanzenr. IV. 236(Heft 9): 153. 1902.

长毛紫金牛 *chang mao zi jin niu*

Ardisia villosoides E. Walker.

Subshrubs 15–30 cm tall, villous almost throughout. Rhizome creeping. Stems densely villous and tomentose when young. Petiole 1.5–3.5 cm, villous and tomentose; leaf blade broadly elliptic to broadly elliptic-ovate, 12–15(–22) × 5–8(–10) cm, papery, densely punctate, base obtuse to rounded, margin crenate, apex acute or acuminate; lateral veins ca. 15 on each side of midrib, ending in marginal glands, marginal vein present. Inflorescences terminal, axillary, or lateral, compound subumbellate or cymose bracts ca. 3 mm. Flowers pink, ca. 6 mm. Pedicel 6–10 mm. Sepals oblong-lanceolate to ligulate, ca. 6 mm, punctate and villous on both sides, apex acute. Petals ovate, punctate, glabrous, apex acute. Stamens somewhat shorter than petals; anthers narrowly lanceolate, punctate dorsally, apiculate. Pistil as long as or longer than petals; ovary glabrous; ovules ca. 5, uniseriate. Fruit red, ca. 6 mm in diam., glabrous, punctate. Fl. Jun–Jul, fr. Nov–Jan.

Dense evergreen broad-leaved forests, edges of forests, along streams, moist places, roadsides, bamboo woods. Hainan, Yunnan [Vietnam].

55. *Ardisia mamillata* Hance, J. Bot. 22: 290. 1884.

虎舌红 *hu she hong*

Tinus mamillata (Hance) Kuntze.

Subshrubs to 15 cm tall, with creeping woody rhizomes. Stems densely rusty crisped-pilose when young, glabrescent. Petiole 0.5–1.5 cm; leaf blade oblong-oblong-ovate to obovate, 7–14 × 3–4(–5) cm, papery, punctate, rusty strigose and mamillate adaxially, crisped hairy abaxially, base obtuse or rounded, margin obscurely crenate with marginal glands hidden by hairs, apex acute or obtuse; lateral veins 6–8 on each side of midrib, marginal vein absent. Inflorescences simple, umbellate, 10–15-flowered, densely pilose, on curved ends of pilose, specialized branches 3–9 cm, with 1 or 2(–4) reduced subapical leaves. Flowers pinkish or rarely whitish, 5–7 mm. Pedicel 4–8 mm; pilose. Sepals narrowly oblong-lanceolate or lanceolate, as long as or shorter than petals, punctate, pilose on both surfaces or glabrescent inside, apex acuminate. Petals ovate, punctate, apex acute. Stamens subequalling petals; anthers lanceolate, punctate dorsally, acute. Ovary pilose or glabrescent; ovules ca. 5, uniseriate. Fruit reddish, ca. 6 mm in diam., slightly fleshy, ± punctate, pilose or glabrescent. Fl. Jun–Jul, fr. Nov–Jan.

Dense evergreen broad-leaved forests, valleys, shady damp places; 500–1600 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Sichuan, Yunnan [Vietnam].

56. *Ardisia alyxiifolia* Tsiang ex C. Chen, Acta Phytotax. Sin. 16(3): 80. 1978.

少年红 *shao nian hong*

Ardisia beibeinenses Z. Y. Zhu

Shrubs ca. 50 cm tall, possibly stoloniferous. Branchlets terete, 1–2 mm in diam., reddish glandular papillate, glabrescent. Petiole canaliculate, 5–8 mm; leaf blade ovate, lanceolate to oblong-lanceolate, 3.5–6(–9.5) × 1.5–2.3(–3.2) cm, thick papery to leathery, sparsely puberulent or minutely brown scaly especially on midrib abaxially, punctate, base obtuse to rounded, margin crenulate, apex acuminate; lateral veins inconspicuous, sparsely glandular, marginal vein absent. Inflorescences simple, subumbellate or corymbose, sometimes compound, lateral or rarely axillary, densely puberulent; peduncle 1–3(–6) cm. Flowers white or rarely pinkish, ca. 4 mm. Pedicel 6–10 mm. Sepals triangular-ovate, 1–1.5 mm, minutely puberulent on tube, punctate, apex obtuse or acute. Petals ovate or ovate-lanceolate, ca. 4 mm, glabrous, ± papillate below middle inside, sparsely punctate. Stamens shorter than petals; anthers lanceolate, ± punctate dorsally. Ovary glabrous; ovules ca. 5, uniseriate. Fruit red, globose, ca. 5 mm in diam., somewhat fleshy, punctate. Fl. Jun–Jul, fr. Oct–Dec.

* Mixed forests, hillsides, valleys; 600–1200 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan.

57. *Ardisia chinensis* Bentham, Fl. Hongk. 207. 1861.

小紫金牛 *xiao zi jin niu*

Ardisia jiajiangensis Z. Y. Zhu; *A. triflora* Hemsley; *Bladhia chinensis* (Benth) Nakai; *B. chinensis* var. *minor* Nakai; *Tinus chinensis* (Benth) Kuntze; *T. triflora* (Hemsley) Kuntze.

Shrubs or subshrubs with creeping rhizomes. Stems to 45 cm, minutely blackish brown scaly when young, glabrescent. Petiole 3–8(–10) mm, brown scaly; leaf blade obovate or elliptic, 3–8 × 1.5–3 cm, papery, glabrous adaxially, ± brown scaly abaxially, base cuneate, margin undulate or repand to subentire, slightly revolute, apex obtuse to acute; lateral veins numerous, marginal vein present. Inflorescences axillary, simple, subumbellate, 3–10-flowered; peduncle 1–3 cm. Flowers white or sometimes pinkish, ca. 3 mm. Pedicel 5–8 mm, slender, blackish brown scaly. Sepals triangular-ovate, ca. 1 mm, brown scaly, punctate or not, margin ciliate, apex acute. Petals free or nearly so, ovate, glabrous, not punctate, apex acute or acuminate. Stamens ca. 2/3 as long as petals; anthers ovate, punctate or not dorsally, apex acute, apiculate. Ovary glabrous, ovules 5 or 6, uniseriate. Fruit red becoming blackish, globose, ca. 5 mm in diam., not punctate, glabrous. Fl. Apr–Jun, fr. Oct–Dec.

Mixed forests, hillsides, valleys, along streams, dark damp places; 300–800 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang [Japan, Malaysia, Vietnam].

58. *Ardisia fordii* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 64. 1889.

灰色紫金牛 hui she zi jin niu

Embelia fordii (Hemsley) Mez.

Shrubs 30–60 cm tall, stoloniferous. Stems rusty scaly and puberulent when young. Petiole ca. 3 mm; leaf blade elliptic-lanceolate or oblanceolate, 2.4–5.5 × 1–1.6 cm, papery, glabrous, rusty scaly abaxially, base cuneate to subrounded, margin entire, apex obtuse or acuminate; lateral veins numerous, marginal vein evident. Inflorescences terminal on specialized lateral branches 6–9 cm, umbellate, few flowered, rusty scaly; bracts 2, lanceolate, minute, inserted at base of pedicel. Flowers pink, ca. 4 mm. Pedicel slender, ca. 7 mm. Sepals ovate, ca. 1.5 mm, punctate, ± minutely scaly, margin ciliate, apex acute or subrounded. Petals broadly ovate, ca. 4 mm, glabrous, punctate, apex acute. Stamens ca. 1.5 mm; anthers ovate, acute, apiculate, not punctate on back. Pistil shorter than petals; ovary glabrous, punctate; ovules ca. 5, uniseriate. Fruit dark red, globose, ca. 5–7(–9) mm in diam., sparsely scaly, punctate, smooth, not ribbed. Fl. Jun–Aug, fr. Oct–Dec.

* Evergreen broad-leaved forests, hillsides, valleys, along streams, damp and dark places; 100–800 m. Guangdong, Guangxi.

It is possible that specimens of *A. fordii* actually represent seedlings of *A. quinquegona* with precocious flowers, but because no field data are available, they are treated as distinct pending further studies.

59. *Ardisia violacea* (T. Suzuki) W. Z. Fang & K. Yao, Acta Phytotax. Sin. 17: 99. 1979.

锦花紫金牛 jin hua zi jin niu

Bladhia violacea T. Suzuki, Trans. Nat. Hist. Soc. Formos. 5: 41. 1935; *Ardisia brevicaulis* Diels var. *violacea* (T. Suzuki) E. Walker.

Subshrubs, with long creeping rhizomes. Stems 10–30 cm, minutely puberulent. Petiole 2–3 mm, ± minutely puberulent or brown scaly, canaliculate; leaf blade ovate- or oblong-lanceolate, rarely lanceolate, 2–6.5 × 0.6–1.9 cm, papery, glabrous, minutely punctate abaxially, base rounded or subcordate, margin irregularly serrate, reflexed, apex acute or obtuse; lateral veins slightly raised adaxially, 3–5(–8) on each side of and at right angles to midrib, marginal vein evident. Inflorescences axillary or subapical, umbellate, simple, minutely and densely puberulent or brown scaly; peduncle 0.8–1.5 cm. Flowers unknown. Pedicel 3–4 mm. Fruit red, globose, ca. 6 mm in diam., not punctate, glabrous, 2 or 3 per infructescence. Fr. Mar.

* Dense broad-leaved forests, valleys, rock crevices, damp places; 700–1100 m. Taiwan.

60. *Ardisia sinoaustralis* C. Chen, Guihaia 13: 202. 1993.

细罗伞 xi luo san

Ardisia affinis Hemsley (1889), not Blume ex A. de Candolle (1844); *A. sinoaustralis* var. *longicalyx* C. Chen & D. Fang; *Tinus affinis* (Hemsley) Kuntze.

Subshrubs 30–40 cm tall, stoloniferous. Stems rusty puberulent especially when young. Petiole 2–5 mm; leaf blade elliptic to oblong-oblanceolate, 1.5–7 × 1–3 cm, sparsely punctate, base cuneate, margin crisped undulate, subentire, or crenulate, apex acute or obtuse; lateral veins 4–7 on each side of midrib, punctate puberulent, marginal vein absent. Inflorescences terminal, umbellate, simple, on curved ends of specialized lateral branches 2–13 cm, these with 2 or 3 reduced subapical leaves, rusty puberulent. Flowers tinged pinkish, 4–6 mm. Pedicel ca. 8 mm, rusty puberulent. Sepals ovate, ca. 1 mm, puberulent, punctate, margin sometimes ciliate, apex acute or obtuse. Petals ovate, 4–6 mm, sparsely punctate, glabrous outside, sparsely puberulent or glabrous inside, apex acute. Stamens somewhat shorter than petals; anthers lanceolate, acute, punctate dorsally. Ovary glabrous, sparsely punctate; ovules ca. 5, uniseriate. Fruit red, globose, ca. 7 mm in diam., slightly fleshy, not punctate. Fl. May–Jul, fr. Oct–Dec.

* Mixed forests, limestone hillsides, roadsides, along streams, dark damp places; 100–600 m. Guangdong, Guangxi, Hainan, Hunan, Jiangxi.

61. *Ardisia argenteaulis* Yuen P. Yang in Yuen P. Yang & Dwyer, Taiwan 34: 287. 1989.

五花紫金牛 wu hua zi jin niu

Shrubs to 43 cm tall, with creeping rhizomes, pubescent with irregular peltate scales on young parts. Branchlets terete, 2.5–3 mm in diam., brown scaly, silvery-gray basally. Petiole 3–10 mm; leaf blade obovate, 6–12 × (2.3–)3–4 cm, membranous, glabrous adaxially, covered with brown scales and short hairs abaxially, base cuneate and slightly decurrent, margin entire or subundulate, apex acute or acuminate; lateral veins to 12 on each side of midrib, marginal vein absent.

Inflorescences axillary, subumbellate, 8–12-flowered, to 4 cm, rusty brown scaly throughout at least when young; peduncle ca. 3 cm, slender. Flowers white, ca. 3 mm. Pedicel ca. 1 cm, slender. Sepals triangular-ovate, ca. 2 mm, obscurely punctate, base rusty brown scaly, margin ciliate, apex acute. Petals ovate, ca. 3 mm, glabrous, sparsely punctate, apex acute. Stamens ca. 3 mm; anthers lanceolate-ovate, not punctate dorsally, apex acute or acuminate. Ovary glabrous; ovules ca. 12, in 2 series. Fruit ovoid, 5–7 mm in diam., not punctate, glabrous. Fl. May.

* Sparse mixed forests, bamboo woods, dense broad-leaved forests, along streams, shady places, hilly area. Guangdong.

62. *Ardisia caudata* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 63. 1889.

尾叶紫金牛 wei ye zi jin niu

Timus caudata (Hemsley) Kuntze.

Shrubs 50–100 cm tall. Branchlets puberulent when young. Petiole 5–8 mm, puberulent; leaf blade oblong- or elliptic-lanceolate, rarely elliptic, 6–13 × 2–3(–4.5) cm, membranous, glabrous, sparsely brown scaly abaxially, not punctate, base rounded or obtuse, margin crisped-undulate or crenate, apex acuminate to caudate-acuminate; lateral veins ca. 8 on each side of midrib, marginal vein absent. Inflorescences terminal, compound subcorymbose or umbellate, many flowered, puberulent, on specialized, slender, 3- or 4-leaved lateral branches 5–20 cm; primary rays to 1.5 cm. Flowers pinkish, 6(–8) mm. Pedicel 7–12 mm, to 2 cm in fruit, slender, puberulent. Sepals ovate, 3–4 mm, punctate, glabrous except for base, apex acute. Petals broadly ovate, sparsely punctate, minutely puberulent inside near base or glabrous, apex acute. Stamens ca. 2/3 as long as petals; anthers ovate, sparsely punctate dorsally. Ovary glabrous; ovules ca. 5, uniseriate. Fruit reddish, ca. 6 mm in diam., with small glands. Fl. May–Jul, fr. Nov–Dec.

* Mixed forests, valleys, hillsides, along streams, dark damp places; 1000–2200 m. Guangdong, Guangxi, Guizhou, Sichuan, Yunnan.

63. *Ardisia pedalis* E. Walker, J. Arnold Arbor. 23: 351. 1942.

矮短紫金牛 ai duan zi jin niu

Subshrubs to 50 cm tall, stoloniferous. Branchlets angular, 1–2 mm in diam., densely and minutely reddish papillose-tomentose, glabrescent. Petiole canaliculate, 0.8–1.5 cm, puberulent; leaf blade elliptic, oblanceolate, or obovate, 8–13(–14) × 3–5.5(–7) cm, papery, puberulent especially on veins abaxially, densely punctate, base cuneate, decurrent, margin subentire to sparsely and shallowly crenate, apex acuminate or acute; lateral veins ca. 12 on each side of midrib, marginal vein absent. Inflorescences subumbellate, simple, axillary or lateral, densely puberulent; peduncle ca. 1 cm, 2 cm in fruit. Flowers white or red, 5–6 mm. Pedicel ca. 1 cm, puberulent or glabrescent. Sepals ovate or oblong-ovate, ca. 1.5 mm, sparsely puberulent or glabrescent, punctate, margin entire or ciliate, apex obtuse or acute. Petals narrowly ovate, 5–6 mm, densely punctate, glabrous, apex subobtuse. Stamens shorter

than petals; anthers lanceolate, punctate or not dorsally. Ovary glabrous; ovules ca. 7, uniseriate. Fruit red, globose, 8–10 mm in diam., punctate, sparsely fleshy.

Dense broad-leaved forests, hilly areas, rocky crevices, shady places, along streams; 100–1000 m. Guangxi [Vietnam].

64. *Ardisia crispa* (Thunberg) A. de Candolle, Trans. Linn. Soc., London 17: 124. 1834.

百两金 bai liang jin

Bladhia crispa Thunberg, Fl. Jap. 97. 1784; *Ardisia crispa* var. *amplifolia* E. Walker; *A. crispa* var. *dielsii* (H. L. eill.) E. Walker; *A. dielsii* H. L. eill.; *A. henryi* Hemsley; *A. henryi* var. *dielsii* (H. Léveillé) E. Walker; *A. hortorum* Maximowicz ex Regel; *A. hortorum* var. *brachysepala* Handel-Mazzetti; *A. multicaulis* Z. Y. Zhu; *A. penduliflora* Mez; *A. simplicicaulis* Hayata; *Bladhia crispa* var. *dielsii* (H. Léveillé) Nakai; *Timus crispa* (Thunberg) Kuntze; *T. henryi* (Hemsley) Kuntze.

Shrubs or subshrubs 0.6–1.5 m tall, with creeping rhizomes. Stems usually minutely puberulent or sparsely brown scaly when young. Petiole 5–8 mm; leaf blade elliptic-lanceolate to narrowly lanceolate, 7–25 × 1–5.8 cm, membranous or subpapery, glabrous adaxially, usually ± finely brown scaly abaxially, base cuneate, margin entire or shallowly crenulate, recurved, punctate, apex long acuminate or rarely acute; lateral veins ca. 8 on each side of midrib, marginal vein obscure. Inflorescences terminal, subumbellate, simple, on curved specialized lateral branches 5–10 cm. Flowers white or pink, 4–5 mm. Pedicel 1–1.5 cm, puberulent. Sepals oblong-ovate or lanceolate, ca. 1.5 mm, ± sparsely punctate, glabrous, apex acute or narrowly rounded. Petals ovate, 4–5 mm, punctate, glabrous outside, ± minutely puberulent inside, apex acute. Stamens subequalling petals; anthers narrowly oblong-lanceolate, with or without glands dorsally. Ovary glabrous; ovules ca. 5, uniseriate. Fruit reddish, globose, 5–6 mm in diam., punctate. Fl. Apr–Jun, fr. Oct–Jan. 2n = 24, 46.

Mixed or broad-leaved forests, damp places, bamboo woods, hillsides, valleys; 100–2500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Indonesia, Japan, Korea, Vietnam].

The name *Ardisia crispa* was misapplied by de Candolle to *A. crenata*, (see Walker, J. Wash. Acad. Sci. 29: 256. 1939).

65. *Ardisia carnosicaulis* C. Chen & D. Fang, Guihaia 13: 199. 1993.

肉茎紫金牛 rou jing zi jin niu

Shrubs to 1 m tall, sometimes tuberous. Branchlets 5–7 mm in diam., minutely glandular papillate, early glabrescent. Petiole marginate, to 2 cm; leaf blade elliptic, obovate, or oblanceolate, 9–14.5 × 3–5 cm, glabrous, sometimes minutely punctate abaxially, base cuneate, margin crenulate, vascularized nodules present, apex acuminate; lateral veins 16–18 on each side of midrib, raised on both surfaces, marginal vein evident. Inflorescences terminal, corymbose, on 3–5-leaved specialized lateral branches 4.5–16 cm. Flowers papery, pinkish or yellowish, ca. 8 mm. Pedicel 0.7–2 cm. Sepals oblong-ovate, 2.5–3 mm, glabrous, densely glandular, apex obtuse to subrounded. Petals nearly free, ovate, 6–8 mm,

Flora of China 15: 10–29. 1996.

glabrous, puberulent inside, glandular, apex acuminate. Stamens shorter than petals; filaments obsolete; anthers lanceolate, acute, glandular on back. Pistil as long as or slightly longer than petals; ovary glabrous. Fruit unknown. Fl. Jun–Oct.

* Evergreen broad-leaved forests, hillsides, valleys, dark damp places; 400 m. Guangxi.

