

- 15b. Leaf blade 3–15 × 3–16 cm, cordate or ovate-cordate; petiole 2–10 cm; bractlets ovate.
 17a. Leaf blade densely punctate; petiole and branchlets with red juice when broken; roots linear or terete 40. *A. tubiflora*
 17b. Leaf blade not punctate; petiole and branchlets without red juice; roots fusiform or globose 41. *A. tuberosa*
- 1b. Shrubs climbing, rarely shrubs erect or lianas; calyx tube horseshoe-shaped or geniculately curved at middle; limb often 2- or 3-lobed; gynostemium 3-lobed; anthers oblong, adnate in pairs opposite the gynostemium lobes; capsule usually dehiscing basipetally.
- 18a. Calyx limb cylindric or saccate, 2–6-dentate or deeply 2- or 3-lobed.
 19a. Calyx limb saccate, asymmetric.
 20a. Calyx limb ca. 6 × 1.5 cm; lobes lanceolate, ca. 25 × 10 mm 23. *A. forrestiana*
 20b. Calyx limb 1–2 × 0.3–1.5 cm; lobes ovate-deltate, ca. 4 × 5 mm 24. *A. utrifloris*
- 19b. Calyx limb cylindric or subcylindric (sometimes slightly expanded apically), symmetric.
 21a. Shrubs erect; stems and branchlets with condensed nodes; calyx limb 5- or 6-dentate 25. *A. thwaitesii*
 21b. Shrubs or herbs climbing; stems and branchlets with elongate internodes; calyx limb 2- or 3-lobed.
 22a. Calyx limb indistinctly 2- or 3-lobed; lobes unequal 26. *A. transsecta*
 22b. Calyx limb distinctly 3-lobed; lobes equal or slightly unequal.
 23a. Leaf blade ovate, abaxially densely gray or yellow-brown villous; calyx lobes subrounded 27. *A. ovatifolia*
 23b. Leaf blade trullate-lanceolate, ovate-lanceolate, or lanceolate, abaxially sparsely pubescent or glabrescent; calyx lobes lanceolate-acuminate 28. *A. cucurbitoides*
- 18b. Calyx limb discoid or obliquely trumpet-shaped, 3-lobed.
 24a. Calyx limb gradually dilated above, obliquely trumpet-shaped; lobes distinctly recurved, orifice larger than tube.
 25a. Leaf blade base cordate, abaxially densely white tomentose; calyx with purple veins and blotches, orifice nearly quadrate 21. *A. saccata*
 25b. Leaf blade base rounded, abaxially villous to glabrescent, hairs brownish or yellowish; calyx without blotches, orifice nearly orbicular 22. *A. hainanensis*
- 24b. Calyx limb abruptly expanded, discoid, lobes plano-spreading, orifice distinctly smaller than tube.
 26a. Leaf blade polymorphic, margin deeply or shallowly lobed, rarely entire.
 27a. Leaf blade deeply palmately 5–7-lobed 1. *A. cucurbitifolia*
 27b. Leaf blade margin never as above.
 28a. Calyx limb oblique, unilaterally 3-lobed, lobes ovate-lanceolate or oblong-lanceolate 2. *A. obliqua*
 28b. Calyx limb not oblique, lobes broadly ovate or broadly deltate.
 29a. Leaf blade pandurate or obovate-oblong, subrotund on old branches 3. *A. tibetica*
 29b. Leaf blade never as above.
 30a. Leaf blade ovate to ovate-lanceolate, obovate-oblong, or linear, margin entire or lobed near base, base cordate or auriculate, sinus over 0.5 cm wide 4. *A. kaempferi*
 30b. Leaf blade broadly oblong-oblancheolate, linear, or oblong, margin entire or shallowly 2–3-lobed, base narrowly auriculate, sinus 0.3–0.5 cm wide 5. *A. howii*
- 26b. Leaf blade uniform, margin entire.
 31a. Leaf blade generally as wide as long, cordate to orbicular (rarely ovate); veins palmate, basal veins 5–7.
 32a. Leaf blade glabrous, base truncate 6. *A. caulialata*
 32b. Leaf blade ± with hairs, base cordate or auriculate.
 33a. Flowers large, limb 3.5–12 cm in diam.
 34a. Plants densely hirsute, hairs dusty yellow or brownish; calyx limb 3.5–4.5 cm in diam., dark purple, with spines, distinctly tuberculate 7. *A. kwangsiensis*
 34b. Plants villous, hairs white or reddish brown; calyx limb 4–12 cm in diam., nearly smooth or sparsely papillate.
 35a. Calyx tube horseshoe-shaped at middle; limb 4–6 cm in diam.; seeds deltoid-cordiform or cordiform, 6–7 × 6–7 mm, both surfaces slightly plano-convex, verrucose 8. *A. manshuriensis*
 35b. Calyx tube geniculately curved at middle; limb 6–12 cm in diam.; seeds ovoid, ca. 4 × 3 mm, upper surface plano-convex, lower deeply concave, with a septumlike funiculus at center, rugose or smooth 9. *A. griffithii*
- 33b. Flowers small; calyx limb 2–3.5 cm in diam.
 36a. Leaf blade abaxially densely tomentose, hairs white or gray 10. *A. mollissima*
 36b. Leaf blade abaxially sparsely to densely villous, hairs yellowish.
 37a. Calyx limb oblique, unilaterally 3-lobed, lobes ovate-lanceolate or oblong-lanceolate 2. *A. obliqua*
 37b. Calyx limb not oblique, discoid or rounded, lobes rounded.
 38a. Leaf blade ovate to ovate-cordate, 5–12 cm wide, base deeply cordate or auriculate, sinus 1–2.5 cm deep; bractlets ovate, ca. 1.5 × 1 cm 11. *A. moupinensis*
 38b. Leaf blade ovate to narrowly ovate, 4–8 cm wide, base shallowly cordate, sinus ca. 1 cm

- deep; bractlets subulate, 5–8 × 2–3 mm 12. *A. kunmingensis*
- 31b. Leaf blade longer than wide, ovate to narrowly ovate, elliptic, oblong, or lanceolate; veins pinnate, often 4–6 pairs.
- 39a. Leaf blade base cordate or auriculate (sometimes narrowly so).
- 40a. Flowers small; calyx limb 2–2.5 cm in diam.
- 41a. Racemes 3–5-flowered, cauliflorous; leaf blade base cordate, sinus 1–2 × 1–2 cm 13. *A. scytophylla*
- 41b. Flowers solitary or paired, axillary; leaf blade base narrowly auriculate, sinus 0.5–1.5 × 0.2–0.4 cm 14. *A. fulvicoma*
- 40b. Flowers large; calyx limb 4–13 cm.
- 42a. Calyx limb 8–13 cm in diam. 15. *A. westlandii*
- 42b. Calyx limb 4–6 cm in diam. 16. *A. versicolor*
- 39b. Leaf blade base rounded to shallowly cordate.
- 43a. Calyx limb adaxially papillate; leaf blade lanceolate, elliptic-lanceolate, or linear-lanceolate.
- 44a. Calyx tube upper part abruptly dilated into limb, margin not revolute 17. *A. championii*
- 44b. Calyx tube upper part gradually dilated into limb, margin revolute 18. *A. bambusifolia*
- 43b. Calyx limb adaxially smooth; leaf blade oblong, ovate-oblong, or ovate, rarely ovate-lanceolate.
- 45a. Calyx tube horseshoe-shaped curved at middle; leaf blade base rounded 19. *A. fangchi*
- 45b. Calyx tube geniculately curved at middle; leaf blade base shallowly cordate 20. *A. petelotii*

1. *Aristolochia cucurbitifolia* Hayata, Icon. Pl. Formosan. 5: 137. 1915.

瓜叶马兜铃 *gua ye ma dou ling*

Shrubs climbing, slightly herbaceous. Stems terete, striate, pubescent to subglabrous. Petiole ca. 3 cm, pubescent; leaf blade ovate to ovate-cordate, 6–9 × 5–11 cm, subleathery, abaxially sparsely pubescent, adaxially glabrous, veins palmate, 3 pairs from base, base cordate, palmately 5–7-lobed, basal lobes ovate, 2–3 × ca. 1.5 cm, lateral lobes spatulate or oblanceolate, shorter and narrower than middle lobe, middle lobe spatulate-obovate, 2–9 × 1–3 cm, apex acute. Flowers in axils of leafy shoots, solitary. Peduncle often pendulous, ca. 3 cm, densely pubescent; bractlets oblong-ovate, ca. 1 × 0.5 cm, slightly amplexicaul, inserted at middle of pedicel. Calyx brownish, 5–6 cm; tube horseshoe-shaped, abaxially pubescent; basal portion of tube ca. 2.5 × 0.7 mm; limb discoid, oblique, ca. 1.5 × 1 cm, shallowly 2-lobed, orifice with slightly raised ring. Anthers oblong, ca. 1.5 mm. Gynostemium 3-lobed. Capsule ovoid-fusiform, ca. 6 × 1.5 cm, dehiscent basipetally. Seeds ovoid-triangular, ca. 4.5 × 5 mm. Fl. Apr.

- Mixed forests; ca. 500 m. Taiwan.

2. *Aristolochia obliqua* S. M. Hwang, Acta Phytotax. Sin. 19: 226. 1981.

偏花马兜铃 *pian hua ma dou ling*

Shrubs climbing, slightly herbaceous. Stems terete, striate, sparsely villous or glabrous. Petiole 3–4 cm, pilose to glabrous; leaf blade oblong-lanceolate to narrowly ovate, 12–16 × 4–6.5 cm, papery, abaxially sparsely villous, adaxially glabrous, veins palmate, 4–5 pairs from base, base auriculate, sinus 1–1.5 cm deep, apex acute to shortly acuminate. Flowers in axils of leafy shoots, solitary. Peduncle often pendulous, ca. 3 cm, pilose; bractlets subulate, ca. 3 × 1 mm, inserted on basal 1/2 of peduncle. Calyx yellowish, ca. 3 cm; tube horseshoe-shaped, abaxially glabrous to pilose; basal portion of tube ca. 15 × 8 mm; limb oblique, unilaterally 3-lobed; lobes ovate-lanceolate or oblong-lanceolate, ca. 6 × 4 mm. Anthers oblong, ca. 1 mm. Gynostemium 3-lobed. Capsule not seen. Fl. Jun.

- Mixed forests, mountain slopes, moist shady areas; 2200–2600 m. Yunnan.

This species is used medicinally.

3. *Aristolochia thibetica* Franchet, J. Bot. (Morot) 12: 313. 1898.

川西马兜铃 *chuan xi ma dou ling*

Aristolochia feddei H. Léveillé; *A. kaempferi* Willdenow f. *thibetica* (Franchet) S. M. Hwang; ?*A. liangshanensis* Z. L. Yang; *A. setchuenensis* Franchet; *A. setchuenensis* var. *holotricha* Diels.

Shrubs climbing. Stems terete-angular, pubescent. Petiole 0.5–1 cm, pilose; leaf blade pandurate or obovate-oblong, often subrotund on old branches, 5–10 × 2–4 cm, papery, both surfaces pilose, veins palmate, 2–4 pairs from base, base truncate to slightly cordate, sinus to 0.3 cm deep, apex rounded and abruptly apiculate. Flowers on short axillary branches, solitary or paired. Peduncle pendulous, 2–3 cm, pubescent; bractlets ovate, 3–5 × 2–3 mm, inserted at middle of peduncle. Calyx limb purplish, 3–4 cm; tube horseshoe-shaped, abaxially pubescent; basal portion of tube ca. 20 × 10 mm; limb expanded, discoid, ca. 2 cm in diam., indistinctly 3-lobed; lobes broadly ovate. Anthers oblong, ca. 1 mm. Gynostemium 3-lobed. Capsule not seen. Fl. Apr–Jun.

- Forests, mountain slopes; ca. 2500 m. Sichuan, Yunnan.

Aristolochia liangshanensis is included here on the basis of the protologue; further research is needed to clarify its position and status.

4. *Aristolochia kaempferi* Willdenow, Sp. Pl. 4: 152. 1805.

异叶马兜铃 *yi ye ma dou ling*

Aristolochia chrysops (Stapf) E. H. Wilson ex Rehder; *A. dabieshanensis* C. Y. Cheng & W. Yu; *A. heterophylla* Hemsley; *A. kaempferi* f. *heterophylla* S. M. Hwang; *A. kaempferi* f. *mirabilis* S. M. Hwang; *A. mollis* Dunn; *A. neolongifolia* J. L. Wu & Z. L. Yang; *A. shimadae* Hayata; *Isotrema chrysops* Stapf; *I. heterophyllum* (Hemsley) Stapf; *I. lasiops* Stapf.

Shrubs climbing, somewhat herbaceous. Stems terete,

striate, villous, glabrescent. Petiole 1.5–6 cm, densely villous; leaf blade ovate to ovate-lanceolate, obovate-oblong, or linear, 3–18 × 0.3–8 cm, papery, abaxially sparsely white villous, adaxially glabrous, veins palmate, 2–4 pairs from base, base shallowly cordate to auriculate, sinus 0.5–1 cm deep, margin lobed or entire, apex acute to acuminate. Flowers axillary, solitary or paired. Peduncle usually pendulous, 2–7 cm, pubescent; bractlets brownish, ovate to lanceolate or subrotund, 5–15 × 3–15 mm, inserted at base or middle of peduncle, with short stalk or sessile and amplexicaul. Calyx yellow-green with purple veins, throat yellow, 3–4 cm; tube horseshoe-shaped, abaxially villous; basal portion of tube 20–25 × 30–80 mm; limb discoid-subrotund, 2–3 cm in diam., 3-lobed; lobes broadly ovate. Anthers oblong, ca. 1 mm. Gynostemium 3-lobed. Capsule cylindrical or ovoid, 3–7 × 1.5–2 cm, dehiscent basipetally. Seeds obovoid, 3–4 × 2–3 mm. Fl. Mar–May, fr. Jun–Aug.

Forests, thickets, mountain slopes. Anhui, S Gansu, W Hubei, Shaanxi, W Sichuan, Taiwan [Japan].

5. *Aristolochia howii* Merrill & W. Y. Chun, Sunyatsenia 5: 46. 1940.

南粤马兜铃 nan yue ma dou ling

Hocquartia howii (Merrill & W. Y. Chun) Migo.

Shrubs climbing. Stems terete, striate, shortly hirsute, then glabrescent. Petiole 1–2 cm, shortly hirsute; leaf blade broadly oblong-obovate, linear, or oblong, 7–20 × 1–10 cm, leathery, abaxially densely villous, then glabrescent, adaxially glabrate, veins palmate, 7–12 pairs from base, base narrowly auriculate, sinus 0.3–0.5 cm deep, margin entire to shallowly 2- or 3-lobed, apex acute. Flowers axillary, sometimes on old woody stems, solitary or paired. Peduncle pendulous, 3–4 cm, villous; bractlets subulate, 3–5 mm, inserted near base of peduncle. Calyx dark red or dark brown, 4–5 cm; tube horseshoe-shaped, abaxially brown villous; basal portion of tube 20–30 × 3–4 mm; limb discoid-orbicular, 1.5–3 cm in diam., shallowly 3-lobed; lobes broadly ovate. Anthers oblong, ca. 3 mm. Gynostemium 3-lobed. Capsule cylindrical, ca. 4 × 2 cm, dehiscent basipetally. Seeds ovoid, 3–4 × 2–3 mm. Fl. May–Sep, fr. Oct–Dec.

• Mixed forests; 200–600 m. Hainan.

6. *Aristolochia caulialata* C. Y. Wu ex J. S. Ma & C. Y. Cheng, Acta Phytotax. Sin. 27: 294. 1989.

翅茎马兜铃 chi jing ma dou ling

Shrubs climbing. Stems terete, tuberculate, old stem with longitudinally fissured, corky bark, subglabrous. Petiole 5–7 cm, subglabrous; leaf blade orbicular, 18–30 × 16–26 cm, papery, both surfaces glabrous, veins palmate, 2–3 pairs from base, base truncate, margin entire, apex acute. Racemes in axils of leafy shoots or on old woody stems, 2-flowered, 13–16 cm. Pedicel pendulous, 2–4 cm; bractlets ovate, 2–4 × 1–3 mm. Calyx limb purple, throat yellow with dark purple spots; tube geniculately curved, abaxially brown pubescent; basal portion of tube 30–40 × 20–30 mm; limb subpeltate, 2–4 cm in diam., shallowly 3-lobed, verrucose; lobes unequal, rounded. Anthers not seen. Gynostemium 3-lobed. Capsule not known. Fl. May.

• Dense forests in valleys. Fujian, Yunnan.

7. *Aristolochia kwangsiensis* W. Y. Chun & F. C. How ex C. F. Liang, Acta Phytotax. Sin. 13(2): 12. 1975.

广西马兜铃 guang xi ma dou ling

?*Aristolochia austroszechuanica* J. L. Wu & Z. L. Yang.

Shrubs climbing. Stems terete, shallowly striate, densely dusty yellow to brownish hirsute. Petiole 6–15 cm, densely hirsute; leaf blade cordate to orbicular, 11–13 × 9–32 cm, papery, both surfaces moderately to densely hirsute, veins palmate, 2 pairs from base, base cordate or auriculate, sinus 3–5 cm deep, apex obtuse or acute. Racemes in axils of leafy shoots, 2- or 3-flowered. Pedicel pendulous, 2.5–3.5 cm, hirsute; bractlets subulate, 3–6 mm. Calyx limb dark purple, throat yellow, 4–5 cm; tube horseshoe-shaped, abaxially densely hirsute; basal portion of tube 20–35 × 3–10 mm; limb discoid-suborbicular, 3.5–4.5 cm in diam., distinctly 3-lobed; lobes broadly deltoid. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule cylindrical, 8–10 × 2 cm, dehiscent basipetally. Seeds ovoid, 5 × 4 mm. Fl. Mar–May, fr. Aug–Sep.

• Forests on mountain slopes; 600–1600 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Yunnan, Zhejiang.

Aristolochia austroszechuanica is included here on the basis of the protologue; further research is needed to clarify its position and status.

8. *Aristolochia manshuriensis* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 22: 112. 1903.

关木通 guan mu tong

Hocquartia manshuriensis (Komarov) Nakai; *Isotrema manshuriense* (Komarov) H. Huber.

Shrubs climbing. Stems terete, striate, densely white villous. Petiole 6–8 cm, villous; leaf blade cordate to orbicular, 15–29 × 13–28 cm, leathery, both surfaces white villous, adaxially glabrescent, veins palmate, 2–3 pairs from base, base cordate, sinus 1–4.5 cm deep, apex obtuse or acute. Flowers axillary, solitary or paired. Peduncle pendulous, 1.5–3 cm, glabrous; bractlets ovate-cordate or cordate, ca. 1 cm, inserted below middle of peduncle. Calyx limb purple, 4.5–5.5 cm; tube horseshoe-shaped, abaxially white hirsute; basal portion of tube 20–25 × 10–12 mm; limb discoid, 4–6 cm in diam., 3-lobed; lobes broadly deltoid. Anthers oblong, 2–3 mm. Gynostemium 3-lobed. Capsule narrowly cylindrical, 9–11 × 3–4 cm, dehiscent basipetally. Seeds deltoid-cordiform or cordiform, 6–7 × 6–7 mm, both surfaces slightly plano-convex, verrucose. Fl. Jun–Jul, fr. Aug–Sep.

• Mixed forests, moist shady areas; 100–2200 m. Gansu, Heilongjiang, Hubei, Jilin, Liaoning, Shaanxi, Shanxi, Sichuan.

9. *Aristolochia griffithii* J. D. Hooker & Thomson ex Duchartre, Prodr. 15: 437. 1864.

西藏马兜铃 xi zang ma dou ling

Aristolochia yunnanensis Franchet; *A. yunnanensis* var. *meionantha* Handel-Mazzetti; *Isotrema griffithii* (J. D. Hooker & Thomson ex Duchartre) C. E. C. Fischer.

Shrubs climbing. Stems terete, striate, densely reddish brown villous. Petiole 5–10 cm, densely villous; leaf blade cordate to orbicular, 10–28 × 8–2.6 cm, papery, abaxially densely red-brown or white villous, adaxially sparsely pubescent, veins palmate, 3–4 pairs from base, base cordate to auriculate, sinus 3–6 cm, apex acute or shortly acuminate. Flowers solitary. Peduncle pendulous, ca. 10 cm, villous; bractlets ovate, 3 × 2.5 cm, inserted below middle of peduncle. Calyx dark purple with yellow spots on tube and limb, throat blood red, 10–12 cm; tube horseshoe-shaped, abaxially villous; basal portion of tube ca. 80 × 35 mm; limb discoid-rotund, 6–12 cm in diam., shallowly 3-lobed; lobes broadly deltoid. Anthers oblong, 3–4 mm. Gynostemium 3-lobed. Capsule cylindrical, 10–18 × 2.5–3 cm, dehiscent basipetally. Seeds ovoid, ca. 4 × 3 mm, upper surface planoconvex, lower surface deeply concave, with a septumlike funiculus at center, rugose or smooth. Fl. Apr–Jul, fr. Aug–Oct.

Mixed forests; 2100–2800 m. Xizang, Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

10. *Aristolochia mollissima* Hance, J. Bot. 17: 300. 1879.

寻骨风 xun gu feng

Shrubs climbing. Stems terete, densely gray to white tomentose. Petiole 2–5 cm, densely tomentose; leaf blade cordate to ovate-cordate, 3.5–10 × 2.5–8 cm, papery, abaxially densely gray to white tomentose, adaxially densely strigose, veins palmate, 2–3 pairs from base, base cordate or auriculate, sinus 1–2 cm deep, apex obtuse or acute. Flowers solitary. Peduncle pendulous, 1.5–3 cm, densely tomentose; bractlets ovate to oblong, 5–15 × 3–10 mm, inserted on basal 1/3 of peduncle. Calyx yellowish with purple veins, throat purple, 4–5 cm; tube geniculately curved, abaxially densely white tomentose on tube; basal portion of tube 5–15 × 3–6 mm; limb discoid-rounded, 2–2.5 cm in diam., shallowly 3-lobed; lobes broadly ovate. Anthers oblong, ca. 1 mm. Gynostemium 3-lobed. Capsule cylindrical to ovoid-cylindrical with ribs undulate, ca. 3.5 × 1.5–2 cm, dehiscent basipetally. Seeds ovoid-deltoid, ca. 4 × 3 mm. Fl. Mar–Jun, fr. Aug–Oct.

• Thickets, grasslands, on mountain slopes; 100–900 m. S Anhui, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Shanxi, Zhejiang.

11. *Aristolochia moupinensis* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 10: 79. 1887.

淮通 huai tong

Aristolochia bonatii H. Léveillé; *A. jinshanensis* Z. L. Yang & S. X. Tan.

Shrubs climbing. Stems terete, striate, densely gray-yellow villous. Petiole 3–8 cm, densely villous; leaf blade ovate to ovate-cordate, 6–16 × 5–12 cm, papery, abaxially densely gray-yellow villous, adaxially sparsely gray strigose, veins palmate, 2–3 pairs from base, base deeply cordate or auriculate, sinus 1–2.5 cm deep, apex acute or acuminate. Flowers axillary, solitary or paired. Peduncle slightly pendulous, 3–8 cm, densely villous; bractlets ovate, ca. 1.5 × 1 cm, inserted near base of peduncle. Calyx yellowish with purple veins, 4–5 cm; tube geniculately curved, abaxially villous on tube; basal portion of tube 20–30 × 8–10 mm; limb discoid-subrotund, 3–3.5 cm in diam., shal-

lowly 3-lobed; lobes broadly ovate, recurved. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule cylindrical, 6–8 × 2–3.5 cm, dehiscent basipetally. Seeds narrowly ovoid, 5–6 × 3–4 mm. Fl. May–Jun, fr. Aug–Oct.

• Forests, thickets, along streams; 2000–3200 m. Fujian, Guizhou, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.

This species is used medicinally.

12. *Aristolochia kunmingensis* C. Y. Cheng & J. S. Ma, Acta Phytotax. Sin. 27: 29. 1989.

昆明马兜铃 kun ming ma dou ling

Aristolochia salweenensis C. Y. Cheng & J. S. Ma.

Shrubs climbing. Stems terete, pubescent, glabrescent. Petiole 1.5–4 cm, pilose or glabrous; leaf blade ovate to narrowly ovate, 6–14 × 4–8 cm, papery or leathery, abaxially pubescent or glabrous, adaxially glabrous, veins palmate, 4–6 pairs from base, base shallowly cordate, sinus ca. 1 cm deep, apex acuminate or acute. Flowers in axils of leafy shoots, solitary. Peduncle pendulous, 3–5 cm, long pilose; bractlets subulate, 5–8 × 2–3 mm, inserted near base of pedicel. Calyx limb dark purple, throat yellow with purple striations; tube geniculately curved, abaxially pubescent; basal portion of tube 20–30 × ca. 6 mm; limb rounded, 2–2.5 cm in diam., 3-lobed; lobes semirounded. Anthers oblong. Gynostemium 3-lobed. Capsule narrowly cylindrical, 3–4 × ca. 2 cm, dehiscent basipetally. Seeds ovoid-deltoid. Fl. May, fr. Aug.

• Thickets on mountain slopes; ca. 2000 m. Guizhou, Yunnan.

13. *Aristolochia scytophylla* S. M. Hwang & D. L. Chen, Acta Phytotax. Sin. 19: 224. 1981.

革叶马兜铃 ge ye ma dou ling

Shrubs climbing. Stems terete, striate, densely white tomentose. Petiole 2–6 cm, densely tomentose; leaf blade narrowly ovate to ovate-oblong, 7–20 × 3.5–10 cm, leathery, abaxially densely white villous, adaxially glabrous, veins pinnate, 4 or 5 pairs, base cordate, sinus 1–2 × 1–2 cm, apex acute to acuminate. Racemes cauliflorous, often on old woody stems, 3–5-flowered, rachis short. Pedicel ca. 1.5 cm, pendulous, pubescent; bractlets subulate to lanceolate, 2–3 mm. Calyx limb purple-red, 4–5 cm; tube geniculately curved, abaxially densely white villous; basal portion of tube ca. 20 × 8 mm; limb discoid-rounded, 2–2.5 cm in diam., shallowly 3-lobed; lobes broadly deltoid, abaxially papillate near base. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule not seen. Fl. Jun–Apr.

• Thickets on limestone mountain slopes; ca. 600 m. Guangxi, Guizhou, Sichuan, Yunnan.

14. *Aristolochia fulvicoma* Merrill & W. Y. Chun, Sunyatsenia 5: 48. 1940.

黄毛马兜铃 huang mao ma dou ling

Hocquartia fulvicoma (Merrill & W. Y. Chun) Migo.

Shrubs climbing. Stems terete, densely yellow villous. Petiole 1.5–4 cm, densely villous; leaf blade ovate-elliptic to oblong-elliptic, 10–23 × 7–12 cm, leathery, abaxially densely

yellowish villous, adaxially glabrous or yellowish villous along veins, veins pinnate, 5–8 pairs, base narrowly auriculate, sinus 0.5–1.5 × 0.2–0.4 cm, apex acute or shortly acuminate. Flowers axillary, solitary or paired. Peduncle pendulous, 1–2.5 cm, densely brown villous; bractlets triangular. Calyx reddish purple with dark purple veins on the tube, limb purple or yellow, 5–7 cm; tube geniculate curved, abaxially densely yellow-brown villous on tube; basal portion of tube ca. 20 × 6–10 mm; limb discoid-rotund, ca. 2 cm in diam., 3-lobed; lobes broadly ovate to deltoid. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule cylindrical, 6–8 × ca. 2.5 cm, dehiscent basipetally. Seeds ovoid-deltoid, 5–6 × 3–4 mm. Fl. May–Jun, fr. Jul–Aug.

- Dense forests; 200–600 m. Hainan.

15. *Aristolochia westlandii* Hemsley, J. Bot. 23: 286. 1885.

香港马兜铃 xiang gang ma dou ling

Shrubs climbing. Stems terete, striate, densely villous. Petiole 1–1.5 cm, sparsely villous; leaf blade lanceolate-oblong to narrowly oblong, 12–20 × 2–5 cm, leathery or papery, abaxially sparsely villous, glaucous, adaxially glabrous, veins pinnate, 8–12 pairs, base narrowly auriculate, sinus 2–5 cm deep, apex acute. Flowers in axils of leafy shoots or on old woody stems, solitary. Peduncle pendulous, 7–12 cm, villous; bractlets not seen. Calyx yellow with purple veins and blotches, 10–15 cm; tube geniculate curved, abaxially villous; basal portion of tube 50–60 × 15–20 mm; limb discoid, 8–13 cm in diam., shallowly 3-lobed or emarginate; lobes broadly rounded, slightly unequal. Anthers oblong, 4.5–5 mm. Gynostemium 3-lobed. Capsule not seen. Fl. Apr–Mar.

- Forests in valleys; 300–800 m. Guangdong.

16. *Aristolochia versicolor* S. M. Hwang, Acta Phytotax. Sin. 19: 224. 1981.

过石珠 guo shi zhu

Shrubs climbing. Stems terete, striate-sulcate, villous. Petiole 1–2 cm, sparsely pilose; leaf blade narrowly elliptic to lanceolate-elliptic, 14–25 × 4–6.5 cm, leathery, abaxially sparsely villous along veins, glaucous, adaxially glabrous, veins pinnate, 8–12 pairs, base narrowly auriculate, sinus 0.5–0.7 cm deep, apex acute or acuminate. Flowers axillary, solitary or paired. Peduncle pendulous, 2–3 cm, brown villous; bractlets subulate, minute, inserted on basal 1/3 or peduncle. Calyx yellow-green with purple veins, 7–9 cm; tube geniculate curved, abaxially densely yellow-brown villous; basal portion of tube 30–40 × 6–8 mm; limb discoid-subrotund, 4–6 cm in diam., 3-lobed; lobes broadly rounded, equal. Anthers oblong, ca. 2.5 mm. Gynostemium 3-lobed. Capsule ellipsoid, 5–8 × 1.5–2 cm, dehiscent basipetally. Seeds ovoid-deltoid, ca. 6 × 4 mm. Fl. Apr–Jun, fr. Aug–Oct.

- Thickets, mountain slopes, moist shady valleys; 500–1500 m. Guangdong, Guangxi, Yunnan.

The tuber is used medicinally.

17. *Aristolochia championii* Merrill & W. Y. Chun, Sunyat-

senia 5: 47. 1940.

长叶马兜铃 chang ye ma dou ling

Aristolochia longifolia Champion ex Benth, Hooker's J. Bot. Kew Gard. Misc. 6: 116. 1854, not Roxburgh (1832), nor Sessé y Lacasta & Mociño (1894), nor (Chamisso) Hauman (1923); *A. compressicaulis* Z. L. Yang.

Shrubs climbing. Stems terete, striate, densely yellow-brown villous. Petiole 1–2 cm, densely villous; leaf blade lanceolate to elliptic-lanceolate or linear-lanceolate, 15–30 × 2–5 cm, leathery, abaxially densely brown villous, adaxially villous along veins, veins pinnate, 6–15 pairs, base rounded to shallowly cordate, sinus less than 0.2 cm deep, apex narrowly acuminate. Racemes on old woody stems, 2–5-flowered. Pedicel 3–4 cm, pendulous, brown villous; bractlets lanceolate-ovate, ca. 10 × 5 mm. Calyx yellow-green, limb reddish purple, 10–12 cm; tube geniculate curved, abaxially villous; basal portion of tube 50–70 × ca. 15 mm; limb discoid, 4–6 cm in diam., 3-lobed, adaxially papillate; lobes broadly rounded, slightly unequal. Anthers oblong, ca. 3 mm. Gynostemium 3-lobed. Capsule ellipsoid, 6–8 × ca. 3 cm, dehiscent basipetally. Seeds ovoid, ca. 5 × 3 mm. Fl. Jun–Jul, fr. Sep–Nov.

- Dense forests in valleys; 500–900 m. Guangdong, Guangxi, Guizhou, Sichuan.

18. *Aristolochia bambusifolia* C. F. Liang ex H. Q. Wen, Guihaia 12: 217. 1992.

竹叶马兜铃 zhu ye ma dou ling

Lianas woody. Stems terete, densely brown villous. Petiole 0.7–1 cm, densely brown villous; leaf blade linear-lanceolate, 9.5–23 × 1.1–2.7(–5) cm, leathery, abaxially densely brown villous, adaxially glabrous, veins pinnate, 12–16 pairs, base rounded or shallowly cordate, apex acuminate. Flowers solitary. Peduncle pendulous, ca. 1.8 cm, brown villous; bractlets lanceolate-ovate, 5–8 × 2–3 mm, inserted near middle and base of peduncle. Calyx abaxially yellow-green with purple veins, adaxially whitish with purple speckles, limb deep purple; tube geniculate curved, abaxially densely brown villous; basal portion of tube ca. 30 × 10 mm, apical portion gradually dilated and abruptly constricted at orifice, margin revolute; limb discoid, 1.5–2 cm in diam., adaxially papillate, truncate. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule not seen. Fl. Feb–Apr, Oct.

- Forests on limestone mountain slopes, rock fissures. Guangxi (Longlin).

19. *Aristolochia fangchi* Y. C. Wu ex L. D. Chow & S. M. Hwang, *sp. nov.*

广防已 guang fang yi

Type: China. Guangdong: Jilong Shan, *K. L. Shi* 2 (holotype, IBSC).

Aristolochia fangchi Y. C. Wu ex L. D. Chow & S. M. Hwang, Acta Phytotax. Sin. 13(2): 108. 1975 (includes Latin diagnosis), nom. inval.

Shrubs climbing. Stems terete, obscurely striate, villous. Petiole 1–4 cm, densely brown villous; leaf blade oblong to ovate-oblong, rarely ovate-lanceolate, 6–16 × 3.5–5 cm, leathery, abaxially densely brown or gray pubescent, adaxially villous along veins, veins pinnate, 4–6 pairs, base rounded, apex acute or obtuse. Racemes on old woody stems, 2–4 flowered, 4–6 cm. Pedicel 5–7 cm, pendulous, densely villous; bractlets subulate, 3–8 × ca. 1 mm. Calyx purple with yellow blotches, throat white; tube horseshoe-shaped, abaxially densely villous; basal portion of tube 40–50 × 8–10 mm; limb subrotund-peltate, 4–6 cm in diam., shallowly 3-lobed; lobes equal, acute. Anthers oblong, 4–5 mm. Gynostemium 3-lobed. Capsule 5–10 × 3–5 cm, dehiscent basipetally. Seeds ovoid-deltoid, 5–7 × 3–4 mm. Fl. Apr–May, fr. Jul–Sep.

• Dense forests, thickets, on slopes; 500–1000 m. Guangdong, Guangxi, Guizhou.

When originally published (Chow and Hwang, loc. cit.), this name was invalid under Art. 8.1 and 37 of the St. Louis Code because two types were indicated (one flowering, one fruiting). The flowering specimen has here been chosen as the holotype because the flower is much more clearly diagnostic in this genus than the fruit. The specific epithet is derived from the vernacular name.

This species is used medicinally.

20. *Aristolochia petelotii* O. C. Schmidt, Repert. Spec. Nov. Regni Veg. 32: 95. 1933.

滇南马兜铃 dian nan ma dou ling

Aristolochia austroyunnanensis S. M. Hwang.

Shrubs climbing. Stems terete to slightly complanate, striate, densely yellow-brown villous. Petiole 2–4 cm, densely yellow-brown villous; leaf blade narrowly ovate, ovate-oblong, or lanceolate-ovate, 12–18 × 5–8 cm, leathery, both surfaces glabrous or villous along veins, veins pinnate, 4–6 pairs, base shallowly cordate, apex acuminate. Racemes on old woody stems, 2- or 3-flowered, 4–6 cm. Pedicel 3–4 cm, pendulous, yellow-brown villous; bractlets ovate-lanceolate, ca. 10 × ca. 5 mm. Calyx yellow with purple-brown blotches and reticulate veins; tube geniculately curved, abaxially densely villous; basal portion of tube 50–65 × 10–20 mm; limb oblong-peltate, 5–8 × 4–7 cm, 3-lobed; lobes unequal, rounded. Anthers oblong, 3–4 mm. Gynostemium 3-lobed. Capsule narrowly ellipsoid, 10–15 × 5–8 cm, dehiscent basipetally. Seeds not seen. Fl. Sep, fr. Dec.

Forests on limestone mountain slopes; 1800–1900 m. Guangxi, S Yunnan [Vietnam].

21. *Aristolochia saccata* Wallich, Pl. Asiat. Rar. 2: 2. 1829.

管兰香 guan lan xiang

Aristolochia cathcartii J. D. Hooker.

Shrubs climbing. Stems slightly complanate, striate, brown-tomentose. Petiole 8–10 cm, tomentose to glabrescent; leaf blade ovate, rounded-cordate, or ovate-lanceolate, 20–35 × 15–30 cm, leathery, abaxially densely white tomentose, adaxially glabrate, veins palmate, 5–6 pairs from base, base cordate, sinus 1–4 cm deep, apex acute. Racemes on old woody stems, 3–5-flowered, 3–4 cm. Pedicel 2–4 cm, pendulous, brown villous; bractlets subulate, ca. 10 × 2–3 mm. Calyx

yellow-green with purple veins and blotches, limb dark purple; tube geniculately curved, abaxially villous; basal portion of tube saccate, ca. 30 × 10 mm, orifice nearly quadrate; limb obliquely trumpet-shaped, ca. 3 cm in diam., 3-lobed; lobes unequal, upper 2 distinctly recurved, deltoid, lower one broadly deltoid. Anthers oblong, 3–4 mm. Gynostemium 3-lobed. Capsule ovoid, ca. 5 cm × 3–4 cm, dehiscent basipetally. Seeds not seen. Fl. May–Jun, fr. Aug–Sep.

Dense forests in valleys. Xixang, Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

This species is used medicinally in Xizang.

22. *Aristolochia hainanensis* Merrill, Philipp. J. Sci. 21: 341. 1922.

海南马兜铃 hai nan ma dou ling

Aristolochia carinata Merrill & W. Y. Chun; *Hocquartia hainanensis* (Merrill) Migo.

Shrubs climbing. Stems terete, striate, densely brown tomentose. Petiole 4–8 cm, densely brown villous; leaf blade ovate or ovate-lanceolate to narrowly ovate, 12–20(–30) × 10–17 cm, leathery, both surfaces densely villous when young, then abaxially yellowish or brownish villous, adaxially glabrescent except villous along veins, veins palmate, 5–7 pairs from base, base rounded, apex shortly acuminate or acute. Racemes in axils of leafy shoots or on old woody stems, 3–6-flowered, ca. 3 cm. Pedicel pendulous, 3.5–4 cm, densely villous; bractlets subulate, ca. 2 × 1 mm. Calyx yellowish with dark purple lobes; tube geniculately curved, abaxially sparsely villous; basal portion of tube saccate, 20–30 × 10–25 mm, orifice nearly orbicular; limb obliquely trumpet-shaped, ca. 3 cm in diam., 3-lobed; lobes unequal, densely papillate, upper 2 oblong, lower one broadly deltoid. Anthers oblong, 2–2.5 mm. Gynostemium 3-lobed. Capsule narrowly cylindrical, 7–10 cm × 2.5–3 cm, dehiscent basipetally. Seeds ovoid, ca. 6 × 4 mm. Fl. Oct–Feb, fr. Jun–Jul.

• Forests in valleys; 800–1200 m. Guangxi, Hainan.

23. *Aristolochia forrestiana* J. S. Ma, Acta Bot. Yunnan. 11: 321. 1989.

大囊马兜铃 da nang ma dou ling

Shrubs climbing. Stems terete, striate, glabrous. Petiole 2–3 cm, glabrous; leaf blade ovate to narrowly ovate, 9–13 × 3–5 cm, leathery, both surfaces glabrous, veins palmate, 6–8 pairs from base, base cordate, sinus 1.5–2 × 1–2 cm, apex acute. Flowers in axils of leafy shoots, solitary. Peduncle pendulous, 5–7 cm, pubescent; bractlets ovate or subulate, inserted near middle of peduncle. Calyx purple; tube geniculately curved, abaxially pubescent; basal portion of tube 15–20 × ca. 5 mm; limb saccate, asymmetric, ca. 6 × 1.5 cm, 3-lobed; lobes lanceolate, ca. 25 × 10 mm. Anthers not seen. Gynostemium 3-lobed. Fruit not seen.

• Yunnan.

24. *Aristolochia utrififormis* S. M. Hwang, Acta Phytotax. Sin. 19: 228. 1981.

囊花马兜铃 nang hua ma dou ling

Shrubs climbing [or herbaceous]. Stems slightly angled, glabrous. Petiole 4–8 cm, glabrate; leaf blade ovate-lanceolate, 10–17 × 4–5–6 cm, papery, abaxially sparsely gray villous, adaxially glabrous, veins palmate, 4–5 pairs from base, base auriculate, sinus 1–1.5 cm deep, apex acute. Flowers in axils of leafy shoots, solitary. Pedicel pendulous, 4–6 cm, sparsely pilose; bractlets ovate-lanceolate, ca. 5 × 2 mm, inserted above middle of peduncle. Calyx yellow-green; tube geniculately curved, abaxially sparsely pilose to glabrous; basal portion of tube 15–20 × 3–4 mm; limb saccate, ovoid, asymmetric, 1–2 × 0.3–1.5 cm, 3-lobed; lobes ovate-deltate, ca. 4 × 5 mm, erect, papillate. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Fruit not seen. Fl. Apr.

• Forests; ca. 1900 m. Yunnan.

25. *Aristolochia thwaitesii* J. D. Hooker, Bot. Mag. 82: t. 4918. 1856.

海边马兜铃 hai bian ma dou ling

Subshrubs erect. Stems terete to angled, villous, with condensed nodes. Petiole ca. 1 cm, villous; leaf blade spatulate, narrowly oblanceolate, or oblong-oblanceolate, 10–15 × 2.5–3 cm, leathery, abaxially densely brown villous, adaxially glabrate, veins palmate, 12–16 pairs from base, base attenuate to subcuneate, apex acute to shortly acuminate. Racemes from woody base of plant, 3–7-flowered, 4–8 cm. Pedicel ca. 3 cm, recurved, villous; bractlets lanceolate, ca. 5 × 2 mm. Calyx yellow-green; tube geniculately curved, abaxially densely brown villous; basal portion of tube 15–25 × 5–10 mm; limb subcylindric to conic, symmetric, 1.5–3 cm in diam., 5- or 6-dentate. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule ovoid-globose, 3–5 × 2–2.5 cm, dehiscent basipetally. Seeds ovoid, ca. 4 × 3 mm. Fl. Apr–May, fr. Aug–Sep.

• Thickets, bamboo forests, on mountain slopes, rock fissures. Guangdong (Hong Kong, Zhuhai).

26. *Aristolochia transsecta* (Chatterjee) C. Y. Wu ex S. M. Hwang, Acta Phytotax. Sin. 19: 231. 1981.

粉花马兜铃 fen hua ma dou ling

Isotrema transsectum Chatterjee, Kew Bull. 3: 64. 1948.

Shrubs climbing. Stems angled, villous, with elongate internodes. Petiole 4–5 cm, villous; leaf blade ovate or oblong, 12–19 × 3.5–6 cm, leathery, abaxially glabrous, adaxially sparsely villous, veins palmate, 5–6 pairs from base, base deeply cordate, sinus 0.5–3 cm deep, apex acute. Flowers in axils of leafy shoots, solitary. Pedicel recurved, 4–5 cm, brown tomentose; bractlets subulate, ca. 5 × 1 mm, inserted near base of peduncle. Calyx dark brown; tube geniculately curved, abaxially sparsely pubescent; basal portion of tube ca. 25 × 10 mm; limb conic, symmetric, ca. 1.5 cm in diam., shallowly 2- or 3-lobed; lobes unequal, upper 2 large, oblong, lower 1 small, broadly ovate. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Fruit not seen. Fl. May–Jun.

Yunnan [Myanmar].

27. *Aristolochia ovatifolia* S. M. Hwang, Acta Phytotax. Sin. 19: 226. 1981.

卵叶马兜铃 luan ye ma dou ling

Shrubs climbing. Stems terete, striate, densely yellow-brown villous, with elongate internodes. Petiole 3–5 cm, yellow-brown villous; leaf blade ovate, 5–13 × 4–8 cm, leathery, abaxially densely gray or yellow-brown villous, adaxially densely gray or yellow-brown villous when young, glabrescent, veins palmate, 3–5 pairs from base, base deeply cordate, sinus 5–10 × ca. 0.5 cm, apex acute. Flowers in axils of leafy shoots, solitary. Pedicel pendulous, 3–6 cm, grayish pilose; bractlets ovate, 3–5 × 3–4 mm, inserted on basal 1/2 of peduncle. Calyx purple-red; tube geniculately curved, abaxially villous to glabrous; basal portion of tube 10–15 × 7–10 mm; limb subcylindric, 1.5–2.5 × 1–1.5 cm, 3-lobed; lobes slightly unequal, subrounded or lower lobe nearly truncate. Anthers oblong, ca. 2 mm. Gynostemium 3-lobed. Capsule cylindrical, undulately 6-angled, ca. 6 × 2 cm, dehiscent basipetally. Seeds narrowly ovoid, ca. 6 × 4 mm. Fl. Apr–May, fr. Jun–Aug.

• Thickets, forests; 1000–1600 m. Guizhou, Sichuan, Yunnan.

28. *Aristolochia cucurbitoides* C. F. Liang, Acta Phytotax. Sin. 13(2): 15. 1975.

葫芦叶马兜铃 hu lu ye ma dou ling

Herbs twining. Stems terete, sparsely villous. Petiole 3–5 cm, sparsely villous; leaf blade trullate-lanceolate, ovate-lanceolate, or lanceolate, 12–22 × 2.5–4.5 cm, papery, both surfaces sparsely pubescent or abaxially glabrescent, veins palmate, 7–10 pairs from base, base auriculate, sinus 1–2 cm deep, apex long acuminate. Flowers in axils of leafy shoots, solitary. Pedicel pendulous, 5–7 cm, sparsely villous; bractlets ovate, ca. 3 × 2 mm, inserted on basal 1/2 of peduncle. Calyx tube geniculately curved, abaxially sparsely villous; basal portion of tube ca. 20 × 8 mm; limb cylindrical ca. 2 × 0.2–0.3 mm, lobes 3, lanceolate-acuminate, 5–7 × 2–3 mm. Anthers oblong, 1.5–2 mm. Gynostemium 3-lobed. Capsule cylindrical, 5–7 × 2–3 cm, dehiscent basipetally. Seeds triangular, ca. 6 × 4 mm. Fl. May–Jun.

Forests; 800–2400 m. Guangxi, Guizhou, Yunnan [Myanmar].

29. *Aristolochia austrochinensis* C. Y. Cheng & J. S. Ma, Acta Phytotax. Sin. 27: 293. 1989.

华南马兜铃 hua nan ma dou ling

Herbs twining. Stems terete, glabrous. Petiole 2–3.5 cm, glabrous; leaf blade triangular-lanceolate to sagittate, 7–14 × 2–2.5 cm, leathery, abaxially puberulous, hairs along veins forming closely foveolate reticulation, adaxially glabrous, veins palmate, 5–7 pairs from base, base auriculate, sinus 1–1.5 cm deep, lateral lobes parallel or spreading, apex narrowly acuminate. Racemes in axils of leafy shoots, 3- or 4-flowered or flowers almost fascicled, 2–3 cm. Pedicel ascending, 1–1.5 cm; bractlets ovate or lanceolate, 10–12 × 3–5 mm. Calyx dark purple; tube rectilinear, abaxially glabrous; utricle globose, ca. 6 mm in diam., sessile; tube ca. 10 × 2.5 mm; limb unilateral, ligulate, ovate-lanceolate, 0.8–1.2 × ca. 1 cm. Anthers elliptic, ca. 1 mm. Gynostemium 6-lobed. Capsule cylindrical to obovoid, 2–2.5 × ca. 1.5 cm, dehiscent acropetally. Seeds ovoid-deltoid,

ca. 5 × 4 mm. Fl. Apr–Jun, fr. Jul–Oct.

• Thickets on mountain slopes; 400–600 m. Fujian, Guangdong, Guangxi, Hainan.

30. *Aristolochia foveolata* Merrill, Philipp. J. Sci., C, 13: 280. 1918.

蜂窝马兜铃 feng wo ma dou ling

Aristolochia kaoi T. S. Liu & M. J. Lai.

Herbs twining. Stems terete, glabrous. Petiole 3–6 cm, glabrous; leaf blade ovate-lanceolate to lanceolate, 5–15 × 2–3 cm, leathery, abaxially densely puberulous along closely reticulate veinlets, adaxially glabrous, veins palmate, 2–3 pairs from base, base deeply cordate or auriculate, sinus 1–2.5 cm deep, lateral lobes overlapping or slightly incurved, apex acuminate. Racemes in axils of leafy shoots, 3- or 4-flowered or flowers almost fascicled, 2–3 cm. Pedicel ascending, 1–1.5 cm, sparsely villous; bractlets ovate or lanceolate, 4–5 × 2–3 mm. Calyx purple-brown; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, ca. 6 mm in diam., sessile; tube ca. 20 × 6 mm; limb unilateral, ligulate, ovate-oblong, ca. 2 × 1–1.6 cm. Anthers elliptic, ca. 1 mm. Gynostemium 6-lobed. Capsule cylindrical to obovoid, 2–2.5 × 1.5 cm, dehiscent acropetally. Seeds ovoid-deltoid, ca. 5 × 4 mm. Fl. Jul–Aug, fr. Aug–Oct.

Thickets on mountain slopes; 500–1000 m. Taiwan [Philippines].

31. *Aristolochia chlamydophylla* C. Y. Wu ex S. M. Hwang, Acta Phytotax. Sin. 19: 223. 1981.

苞叶马兜铃 bao ye ma dou ling

Herbs twining. Stems terete, striate, glabrate. Petiole 6–10 cm, glabrous; leaf blade ovate to ovate-deltate, 6–16 × 5–11 cm, leathery or papery, aromatic-punctate, abaxially puberulous, hairs on veinlets forming closely foveolate reticulation, adaxially glabrous, veins palmate, 2–3 pairs from base, base deeply cordate, sinus 1.5–2 cm deep, apex acute. Racemes in axils of leafy shoots, 8–10-flowered, 4–6 cm. Pedicel ascending to slightly pendulous, 0.8–1.2 cm, glabrous; bractlets ovate, ca. 1.5 × 1 cm, base cordate and slightly amplexicaul. Calyx yellowish green, limb dark purple; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, ca. 3 mm in diam., sessile; tube ca. 10 × 1.5 mm; limb unilateral, ligulate, ovate-lanceolate, ca. 1.5 × 0.5 cm. Anthers elliptic, ca. 0.5 mm. Gynostemium 6-lobed. Fruit not seen. Fl. Mar–Apr.

• Forests on mountain slopes; 1000–1300 m. Guangxi, Yunnan.

32. *Aristolochia fordiana* Hemsley, J. Bot. 23: 286. 1885.

通城虎 tong cheng hu

Herbs twining. Stems 6-angled, glabrous. Petiole 2–4 cm, glabrous; leaf blade ovate-cordate to ovate-triangular, 10–12 × 5–10 cm, leathery, abaxially densely puberulous, hairs on veinlets forming closely foveolate reticulation, adaxially glabrous, veins palmate, 2–3 pairs from base, base cordate, sinus 1–1.5 cm deep, apex acute or acuminate. Racemes in axils of leafy shoots, 3- or 4-flowered, 3–5 cm. Pedicel ascending, ca. 0.8 cm, glabrous; bractlets subulate to lanceolate-ovate, 3–10 × 1–4 mm, base rounded to cuneate. Calyx yellowish green, limb dark

purple; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, ca. 3.5 mm in diam., sessile; tube ca. 15 × 2 mm; limb unilateral, ligulate, ovate-oblong, 1–1.5 × ca. 0.5 cm. Anthers elliptic, ca. 0.3 mm. Gynostemium 6-lobed. Capsule cylindrical or obovoid, 3–4 × 1.5–2 cm, dehiscent acropetally. Seeds ovoid-triangular, ca. 5 × 5 mm. Fl. Mar–Apr, fr. May–Jul.

• Thickets, in valleys, rock fissures; 500–700 m. Guangdong, Guangxi.

This species is used medicinally.

33. *Aristolochia fujianensis* S. M. Hwang, Guihaia 3: 81. 1983.

福建马兜铃 fu jian ma dou ling

Herbs twining. Stems angled, densely white or brown villous. Petiole 2–8 cm, densely villous; leaf blade cordate to ovate-cordate, 4–11 × 4–11 cm, papery, both surfaces white or brown villous, veins palmate, 2–3 pairs from base, base cordate, sinus 1–1.2 cm deep, apex acute. Racemes in axils of leafy shoots, 3- or 4-flowered, 1–3 cm. Pedicel erect to ascending, 0.5–1.5 cm, sparsely pilose; bractlets ovate or ovate-cordate, 5–10 × 5–7 mm. Calyx green with green veins, limb dark purple; tube rectilinear or slightly curved, abaxially sparsely pilose; utricle globose, ca. 4 mm in diam., sessile; tube ca. 2.5 × 2 mm; limb unilateral, ligulate, ovate-lanceolate, 0.8–1.6 × ca. 0.5 cm, apex long acuminate with twisted cauda 1–1.5 cm. Anthers elliptic, ca. 0.5 mm. Gynostemium 6-lobed. Capsule cylindrical to obovoid, ca. 2 × 1 cm, dehiscent acropetally. Seeds ovoid-triangular, ca. 3 × 3 mm. Fl. Mar–Apr, fr. May–Aug.

• Thickets, on mountain slopes, roadsides. Fujian, Zhejiang.

34. *Aristolochia longganensis* C. F. Liang, Guihaia 2: 143. 1982.

弄岗马兜铃 nong gang ma dou ling

Herbs twining. Stems 6-angled, glabrous. Petiole 2–8 cm, glabrous; leaf blade ovate-cordate to cordate or subrotund, 8–13 × 9–12 cm, papery, abaxially densely pubescent, adaxially glabrous, veins palmate, 3 pairs from base, base cordate, sinus 1–2 cm deep, apex abruptly acuminate. Racemes in axils of leafy shoots, 2–6-flowered, 3–4 cm. Pedicel ascending, 1–2 cm, glabrous; bractlets ovate or ovate-cordate, 5–7 × ca. 3 mm. Calyx brownish purple with dark purple veins; tube rectilinear, abaxially sparsely pubescent; utricle globose, ca. 4 mm in diam., sessile; tube ca. 10 × 2 mm; limb unilateral, ligulate, deltate-lanceolate, ca. 3.5 × 0.5 cm, apex long acuminate with twisted cauda 1–3 cm. Anthers elliptic, ca. 0.5 mm. Gynostemium 6-lobed. Capsule elliptic, ca. 7 × 2.5 cm, dehiscent acropetally. Seeds ovoid-cordiform, ca. 5 × 4 mm. Fl. Feb–Apr, fr. Sep.

Thickets on limestone mountain slopes; 100–200 m. Guangxi [Vietnam].

35. *Aristolochia contorta* Bunge, Enum. Pl. China Bor. 58. 1833.

北马兜铃 bei ma dou ling

Herbs twining. Stems terete, striate, glabrous. Petiole 2–7 cm, glabrous; leaf blade narrowly deltate to deltate-cordate, 3–13 × 3–10 cm, papery, both surfaces glabrous, veins palmate, 2–3 pairs from base, base cordate, sinus ca. 1.5 cm deep, apex acute or obtuse. Racemes in axils of leafy shoots, 2–8-flowered, nearly fasciculate. Pedicel ascending, 1–2 cm, glabrous; bractlets ovate, ca. 1.5 × 1 cm. Calyx yellow-green with purple veins; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, ca. 6 mm in diam., sessile; tube ca. 14 × 3 mm; limb unilateral, ligulate, ovate-lanceolate, ca. 3.5 × 1 cm, apex long acuminate with twisted cauda 1–3 cm. Anthers elliptic, ca. 0.5 mm. Gynostemium 6-lobed. Capsule broadly obovoid to ellipsoid-obovoid, 3–6.5 × 2.5–4 cm, dehiscent acropetally. Seeds deltoid-cordiform, 3–5 × 3–5 mm, with membranous wing. Fl. May–Jul, fr. Aug–Oct.

Thickets, mountain slopes, valleys; 500–1200 m. Fujian, Gansu, Hebei, Heilongjiang, Henan, Jilin, Liaoning, Shaanxi, Shandong, Shanxi [Japan, Korea, Russia (Siberia)].

36. *Aristolochia debilis* Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(3): 197. 1846.

马兜铃 ma dou ling

Aristolochia recurvilabra Hance; *A. sinarum* Lindley.

Herbs twining. Stems terete, smooth, glabrous, with elongate internodes. Petiole 1–2 cm, glabrous; leaf blade ovate or oblong-ovate to sagittate, 3–6 × 1.5–3.5 cm, papery, both surfaces glabrous, veins palmate, 2–3 pairs from base, base cordate, sinus 1–1.5 cm deep, apex acute or obtuse. Flowers axillary, solitary or paired. Pedicel 1–1.5 cm, ascending, glabrous; bractlets deltoid, 2–3 × 2–3 mm, inserted near base of pedicel. Calyx yellow-green, throat dark purple; tube rectilinear, abaxially glabrous; utricle globose, 3–5 mm in diam., sessile; tube 20–25 × 2–3 mm; limb unilateral, ligulate, ovate-lanceolate, 2–3 × ca. 1 cm, apex obtuse. Anthers elliptic, ca. 0.5 mm. Gynostemium 6-lobed. Capsule subglobose, 4–6 cm in diam., dehiscent acropetally. Seeds obtusely deltoid, ca. 4 × 4 mm, with membranous wing. Fl. Jul–Aug, fr. Sep–Oct.

Thickets, mountain slopes, moist valleys; 200–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Sichuan, Zhejiang [Japan].

This very important medicinal plant was first identified by Thunberg as *Aristolochia longa* Linnaeus.

37. *Aristolochia delavayi* Franchet, J. Bot. (Morot) 12: 315. 1898.

山草果 shan cao guo

Aristolochia delavayi var. *micrantha* W. W. Smith.

Herbs twining (type appears erect), pungently odorous. Stems pruinose, terete, shallowly striate, glabrous, densely nodose. Leaves sessile or subsessile; leaf blade ovate, 2–8 × 1.5–5 cm, papery, densely punctate, both surfaces glabrous, veins palmate, 2–3 pairs from base, base cordate, amplexicaul, apex acute or obtuse. Flowers in axils of leafy shoots, solitary. Pedicel ascending, 1–1.5 cm, glabrous; bractlets early deciduous (not seen). Calyx yellowish, throat dark purple; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, 4–5

mm in diam., sessile; tube ca. 15 × 2 mm; limb unilateral, ligulate, ovate-oblong, 2–3.5 × ca. 1 cm, apex acute. Anthers elliptic, ca. 0.3 mm. Gynostemium 6-lobed. Capsule nearly globose, 1.2–1.5 cm in diam., dehiscent acropetally. Seeds ovoid-cordiform, ca. 3 × 3 mm. Fl. Aug–Oct, fr. Dec.

• Thickets on limestone mountain slopes; 1600–1900 m. Sichuan, Yunnan (Lijiang).

38. *Aristolochia zhongdianensis* J. S. Ma, Acta Phytotax. Sin. 27: 339. 1989.

中甸马兜铃 zhong dian ma dou ling

Herbs twining. Stems terete, striate, glabrous. Petiole ca. 1 cm, glabrous; leaf blade deltate-cordate, 0.5–3 × 0.5–2 cm, papery, both surfaces glabrous, veins palmate, 2 pairs from base, base auriculate, sinus to 1.5 cm deep, apex acute. Flowers in axils of leafy shoots, solitary. Peduncle ascending, ca. 1 cm, glabrous; bractlets subulate, 1–2 × ca. 1 mm, inserted near base of peduncle. Calyx yellowish green; tube rectilinear or slightly curved, abaxially glabrous; utricle globose, ca. 5 mm in diam., sessile; tube ca. 5 × 2.5 mm; limb unilateral, lanceolate, ca. 1.2 × 0.3 cm, apex long acuminate or shortly tailed. Anthers elliptic, 0.3–0.4 mm. Gynostemium 6-lobed. Capsule ellipsoid, 1.5–2 × 1–1.2 cm, dehiscent acropetally. Seeds ovoid-cordiform, ca. 4 × 3 mm. Fl. May, fr. Oct–Dec.

• Thickets, grasslands, rock fissures; 1200–1400 m. NW Yunnan (Zhongdian).

39. *Aristolochia gentilis* Franchet, J. Bot. (Morot) 12: 314. 1898.

优贵马兜铃 you gui ma dou ling

?*Aristolochia chuandianensis* Z. L. Yang; *A. gracillima* Hemsley.

Herbs twining. Stems terete, glabrous. Petiole 3–4 cm, glabrous; leaf blade rounded-cordate or cordate-reniform, 3–4 × 4–5 cm, submembranous, both surfaces glabrous, veins palmate, 2–3 pairs from base, base shallowly cordate or slightly concave, sinus to 1.5 cm deep, apex acute. Flowers in axils of leafy shoots, solitary. Peduncle ascending, 0.5–1 cm, glabrous; bractlets subulate, 3–5 × 2–3 mm, inserted near base of peduncle. Calyx greenish with reddish brown limb; tube rectilinear, abaxially glabrous; utricle globose, ca. 5 mm in diam., sessile; tube ca. 5 × 2.5 mm; limb unilateral, ligulate, ovate-oblong, 0.8–1 × 0.4–0.5 cm, apex acute. Anthers elliptic, 0.3–0.4 mm. Gynostemium 6-lobed. Capsule subglobose, 1.5–2 cm in diam., dehiscent acropetally. Seeds not seen. Fl. and fr. May–Oct.

• Thickets, grasslands, shady areas; 1200–2700 m. Sichuan, Yunnan.

Aristolochia chuandianensis is included here on the basis of the protologue; further research is needed to clarify its position and status.

40. *Aristolochia tubiflora* Dunn, J. Linn. Soc., Bot. 38: 364. 1908.

辟蛇雷 bi she lei

?*Aristolochia longilingua* C. Y. Cheng & W. Yu; *A. tri-angulifolia* W. Yu.

Herbs twining; roots linear or terete. Stems terete, striate, glabrous; branchlets and petiole with red juice when broken. Petiole 2–10 cm, glabrous; leaf blade ovate-cordate, 3–15 × 3–16 cm, papery, densely punctate, both surfaces glabrous, rarely abaxially pubescent, veins palmate, 3 pairs from base, often red when dry, base cordate, sinus 2–4 cm deep, apex obtuse. Flowers axillary, solitary or paired. Peduncle ascending, 1–2 cm, glabrous; bractlets ovate, 3–8 × 2–4 mm, inserted near base of peduncle. Calyx dark purple; tube rectilinear, abaxially glabrous; utricle globose, ca. 5 mm in diam., sessile; tube 4–5 × 1–2 mm; limb unilateral, ligulate, ovate-oblong, 0.8–1 × 0.4–0.5 cm, apex obtuse or emarginate and apiculate. Anthers elliptic, 0.3–0.4 mm. Gynostemium 6-lobed. Capsule cylindrical, ca. 2.5 × 1.5 cm, dehiscent acropetally. Seeds ovoid or ovoid-deltoid, ca. 4 × 3.5 mm. Fl. Apr–Aug, fr. Oct–Dec.

• Forests, moist mountain slopes; 100–1700 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang.

Aristolochia longilingua is included here on the basis of the protologue; further research is needed to clarify its position and status.

This species is a well-known medicine for the treatment of snake bites.

41. *Aristolochia tuberosa* C. F. Liang & S. M. Hwang, Acta Phytotax. Sin. 13(2): 17. 1975.

背蛇生 bei she sheng

?*Aristolochia cinnabarina* J. L. Wu & Z. L. Yang.

Herbs twining; roots fusiform or globose. Stems angled, glabrous. Petiole 7–10 cm, glabrous; leaf blade cordate, 8–14 × 5–11 cm, both surfaces glabrous, veins palmate, 2–3 pairs from base, base cordate, sinus 1–2.5 cm deep, apex obtuse. Flowers 1–3 per axil. Peduncle ascending, ca. 1.5 cm, glabrous; bractlets ovate, ca. 5 × 6 mm, inserted near base of peduncle. Calyx yellow-green, throat dark purple; tube rectilinear, abaxially glabrous; utricle globose, ca. 5 mm in diam., sessile; tube ca. 9 × 1.5 mm; limb unilateral, ligulate, oblong, ca. 2 × 0.4 cm, apex obtuse or mucronulate. Anthers elliptic, 0.3–0.4 mm. Gynostemium 6-lobed. Capsule obovoid, ca. 3 × 2.5 cm, dehiscent acropetally. Seeds ovoid, ca. 4 × 3 mm. Fl. Nov–Apr, fr. Jun–Oct.

• Thickets, valleys, limestone mountain slopes; 100–1600 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

Aristolochia cinnabarina is included here on the basis of the protologue; further research is needed to clarify its position and status.

The tuber is used medicinally, known as 珠砂莲 (zhu sha lian); the species is also used for treating snake bites.

42. *Aristolochia polymorpha* S. M. Hwang, Acta Phytotax. Sin. 19: 222. 1981.

多型马兜铃 duo xing ma dou ling

Herbs twining. Stems terete, striate, glabrous. Petiole 1–2 cm, glabrous; leaf blade polymorphic, ovate or ovate-deltate to sagittate, 2.5–5.5 × 2–6 cm, papery, both surfaces glabrous or abaxially villous, veins palmate, 1–2 pairs from base, base cordate or broadly cuneate, usually deeply 3-lobed, lateral lobes obovate or semiround, 7–20 × 5–15 mm, middle lobe rhombic

or ovate-lanceolate to linear-lanceolate, 1.5–5 × 0.5–1.5 cm, apex acute. Racemes in axils of leafy shoots, 2–4 flowered, 2–4 cm. Pedicel ascending, 0.2–0.5 cm, sparsely pilose; bractlets ovate-deltoid, 2–5 × 2–4 mm, inserted near base of pedicel. Calyx dark purple; tube rectilinear, abaxially glabrous; utricle globose, ca. 4 mm in diam., with stipe 2–3 mm; tube 5–7 × 1.5–2 mm; limb unilateral, ligulate, oblong, ca. 1.5 × 0.4 cm, apex obtuse. Anthers elliptic, 0.3–0.4 mm. Gynostemium 6-lobed. Capsule subglobose, ca. 1.5 cm in diam., dehiscent acropetally. Seeds ovoid, 2.5 × 2 mm. Fl. Oct–Dec, fr. Jun–Aug.

• Forests; below 100–200 m. Hainan.

43. *Aristolochia tagala* Chamisso, Linnaea 7: 207. 1832.

耳叶马兜铃 er ye ma dou ling

Aristolochia roxburghiana Klotzsch.

Herbs twining. Stems terete, slightly furrowed, glabrous. Petiole 2.5–4 cm, glabrous; leaf blade ovate-cordate or oblong-ovate, 8–12(–24) × 4–14(–22) cm, papery, both surfaces glabrous, veins palmate, 3–5 pairs from base, base deeply cordate, lateral lobes subrounded, sinus 1–3 cm deep, apex acute or acuminate. Racemes in axils of leafy shoots, 2- or 3-flowered, 2–6 cm. Pedicels ca. 1 cm, sparsely hairy, glabrescent; bractlets ovate-lanceolate, to ca. 8 mm. Calyx pale yellowish or greenish, throat dark purple, 4–6 cm; tube rectilinear or slightly curved; utricle globose, 5–8 mm in diam., with stipe 1–3 mm; tube 5–10 × 2–3 mm; limb ligulate, oblong, 2–3 × 0.5–0.6 cm, apex obtuse. Anthers ovoid, ca. 1 mm. Gynostemium 6-lobed. Capsule obovoid-globose to ovoid-cylindric, 3.5–5 × 2–3.5 cm, dehiscent acropetally. Seeds triangular to subcordiform, ca. 8 × 8 mm. Fl. May–Aug, fr. Oct–Dec.

Forests, mountain slopes; below 100–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Taiwan, Yunnan [Bangladesh, Bhutan, Cambodia, India, Indonesia, Japan, Nepal, Malaysia, Myanmar, Philippines, Sikkim, Thailand, Vietnam].

44. *Aristolochia impressinervis* C. F. Liang, Acta Phytotax. Sin. 13(2): 15. 1975 [*“impressinervia”*].

凹脉马兜铃 ao mai ma dou ling

Herbs twining. Stems 6-angled, pubescent. Petiole 1.5–2 cm, glabrate; leaf blade ovate-lanceolate to lanceolate, 8–20 ×

4–5 cm, subleathery, abaxially densely pubescent along veinlets, adaxially glabrous, veins palmate, 1–2 pairs from base, base auriculate, sinus 0.4–0.6 cm deep, apex acuminate. Racemes in axils of leafy shoots, 3–7-flowered, 1–4 cm. Pedicel ascending, ca. 1.5 cm, sparsely hairy, glabrescent; bractlets lanceolate, ca. 10×3 mm. Calyx pale yellowish or greenish, throat purple, 2.5–3 cm; tube rectilinear or slightly curved; utricle globose, ca. 4 mm in diam., with stipe 2–3 mm; tube 5–10 \times 1.5–2 mm; limb ligulate, elliptic, 2–2.5 \times 0.5–1 cm, apex obtuse. Anthers ovoid, 3–4 mm. Gynostemium 6-lobed. Capsule obovoid to subglobose, ca. 1.7 \times 1.3 cm, dehiscent acropetally. Seeds cordiform to deltoid, 2.5 \times 2.5 mm. Fl. May–Jun, fr. Aug–Oct.

• Forests, thickets, limestone mountain slopes; ca. 400 m. Guangxi.

The specific epithet was spelled “*impressinervia*” on p. 15 of the protologue and “*impressinervis*” on pp. 11, 12, and [26].

This species is used medicinally.

45. *Aristolochia zollingeriana* Miquel, Fl. Ned. Ind. 1(1): 1066. 1858.

港口马兜铃 gang kou ma dou ling

Aristolochia kankauensis Sasaki; *A. roxburghiana* subsp. *kankauensis* (Sasaki) T. Yamazaki; *A. tagala* var. *kankauensis* (Sasaki) T. Yamazaki [“*kankaoensis*”].

Herbs twining. Stems 6-angled, glabrous. Petiole 1.5–3.5 cm, glabrous; leaf blade triangular-ovate to rhombic-cordate, 5–7 \times 5–7.5 cm, abaxially densely puberulous, adaxially glabrous, veins palmate, 2–3 pairs from base, base shallowly cordate, apex acute. Racemes in axils of leafy shoots, 3- or 4-flowered, 1–4 cm. Pedicel ascending, ca. 1 cm, glabrous; bractlets ovate, ca. 1.5 \times 1 mm. Calyx brownish purple, 3–5 cm; tube rectilinear or slightly curved; utricle globose, ca. 5 mm in diam., with stipe 2–3 mm; tube 8–10 \times 3–5 mm; limb ligulate, oblong, 1.5–2.5 \times 0.3–0.5 cm, apex obtuse. Anthers ovoid, ca. 1 mm. Gynostemium 6-lobed. Capsule cylindrical, 5–6 \times ca. 2 cm, dehiscent acropetally. Seeds ovoid-deltoid, ca. 7 \times 6 mm, winged. Fl. Jul, fr. Aug.

Dense forests. Taiwan [Indonesia, Japan, Malaysia].

