

2. UVARIA Linnaeus, Sp. Pl. 1: 536. 1753.

紫玉盘属 *zi yu pan shu*

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Narum Adanson; *Uva* Kuntze.

Shrubs, climbing, sometimes erect or small trees, indument with stellate hairs. Inflorescences terminal, axillary, extra-axillary, leaf-opposed, or rarely on older branches; flowers mostly solitary or paired, rarely in short racemes or few-flowered cymes. Torus depressed, pubescent or tomentose. Sepals 3, valvate, usually connate at base. Petals 6, in 2 whorls, sometimes connate at very base, each whorl imbricate. Stamens many; anther locules often oblong or linear; connectives apically truncate to rounded. Carpels many, rarely few, linear-oblong; ovules many per carpel or rarely 2 or 3, in 1 or 2 series; styles outside often pilose; stigmas usually apically 2-cleft, involute. Fruit apocarpous; monocarps mostly ± stipitate, oblong, ovoid, or subglobose, fleshy and berrylike. Seeds several per monocarp or 1 by abortion, subhorizontal, with or without a short aril.

About 150 species: Old World tropics; eight species (one endemic) in China.

L. L. Zhou et al. (Syst. Biodivers. 7: 249–258. 2009) include *Cyathostemma* in *Uvaria* on the basis of a recent molecular study, but this is not accepted by one of us (Li). See the account of *Cyathostemma* for more details.

- 1a. Leaf blade abaxially glabrous or inconspicuously and sparsely stellate pubescent but soon glabrescent.
 - 2a. Leaf blade oblong to oblong-ovate, abaxially glabrous; ovules 6–8 per carpel 1. *U. boniana*
 - 2b. Leaf blade obovate-lanceolate, abaxially inconspicuously and sparsely stellate pubescent, glabrescent; ovules 2 per carpel.
 - 3a. Fruit ca. 1 cm in diam., smooth; leaf blade secondary veins 8–12 on each side of midvein 2. *U. tonkinensis*
 - 3b. Fruit ca. 3.5 cm in diam., densely tuberculate; leaf blade secondary veins 12–14 on each side of midvein 3. *U. kweichowensis*
- 1b. Leaf blade abaxially distinctly tomentose or pubescent, hairs simple or stellate.
 - 4a. Flowers 9–10 cm in diam.; monocarps cylindrical, 4–6 cm, slightly constricted between seeds 6. *U. grandiflora*
 - 4b. Flowers 1.5–4 cm in diam.; monocarps globose to ovoid-ellipsoid, 2–3.8 cm, not constricted between seeds.
 - 5a. Monocarps with soft and dense spines; petals yellowish and leaf blade thinly leathery to thickly papery 4. *U. calamistrata*
 - 5b. Monocarps unarmed; petals dark red to purple, or if yellow then leaf blade membranous.
 - 6a. Leaf blade membranous; petals yellow to yellowish 5. *U. kurzii*
 - 6b. Leaf blade thinly leathery or leathery; petals dark red to purple.
 - 7a. Leaf blade apex acuminate, secondary veins adaxially flat; flowers ca. 1.5 cm in diam. 7. *U. rufa*
 - 7b. Leaf blade apex acute, obtuse, or rounded, secondary veins adaxially impressed; flowers 2.5–4 cm in diam. 8. *U. macrophylla*

1. *Uvaria boniana* Finet & Gagnepain, Bull. Soc. Bot. France 53(Mém. 4): 71. 1906.

光叶紫玉盘 *guang ye zi yu pan*

Shrubs to 5 m tall, climbing, glabrous except for flowers. Petiole 2–8 mm; leaf blade oblong to oblong-ovate, 4–15 × 1.8–5.5 cm, papery, secondary veins 8–10 on each side of midvein and slightly prominent on both surfaces, base cuneate to rounded, apex acuminate to acute. Inflorescences extra-axillary, often leaf-opposed, 1- or 2-flowered. Pedicel 2.5–5.5 cm, bracteolate below middle. Sepals ovate, 2.5–3 mm, margin ciliate. Petals purple, leathery, puberulent; outer petals broadly ovate, ca. 1 × 1 cm; inner petals slightly smaller than outer petals, inside concave. Stamen connectives apically truncate, papillary. Carpels oblong, incurved, densely yellow pubescent; ovules 6–8 per carpel; stigmas horseshoe-shaped, apex 2-cleft. Monocarp stipes 4–5.5 cm; monocarps purple, globose to ellipsoid-ovoid, ca. 1.3 cm in diam. Fl. May–Oct, fr. Jun–Apr.

Moist secondary forests, thickets; 100–800 m. Guangdong, Guangxi, Guizhou, Hainan, Jiangxi [Vietnam].

2. *Uvaria tonkinensis* Finet & Gagnepain, Bull. Soc. Bot. France 53(Mém. 4): 74. 1906.

东京紫玉盘 *dong jing zi yu pan*

Melodorum subglabrum Bân; *M. vietnamense* Bân; *M. vietnamense* var. *calcareum* Bân; *Uvaria tonkinensis* var. *subglabra* Finet & Gagnepain.

Shrubs to 6 m tall, climbing. Branchlets sparsely stellate pubescent, glabrescent. Petiole 5–10 mm; leaf blade obovate, obovate-lanceolate, oblong, or elliptic, 12–21 × 4–7 cm, papery, abaxially sparsely stellate hairy but soon glabrescent, adaxially glabrous, secondary veins 8–12 on each side of midvein, base rounded to slightly cordate, apex long to shortly acuminate or rarely acute. Inflorescences terminal or leaf-opposed, 1-flowered. Pedicel 1.5–4.5 cm, sparsely stellate hairy. Sepals broadly obovate, 3–4 mm, outside densely stellate, inside concave and glabrous. Petals purple, 1.5–1.9 × 1.5–1.9 cm; outer petals obovate, broadly ovate, or orbicular, outside densely stellate pubescent; inner petals smaller than outer petals. Stamen connectives

glabrous or hairy. Carpels cylindric, stellate pubescent or with hairs only at base and apically; ovules 2 per carpel; stigmas apically entire or 2-cleft. Monocarp stipes 2.5–5 cm; monocarps purple, globose, ca. 1 cm in diam.; epicarp smooth. Fl. Feb–Sep, fr. Aug–Dec.

Thickets, open forests; 200–600 m. Guangdong, W Guangxi, Hainan, S Yunnan [Vietnam].

3. *Uvaria kweichowensis* P. T. Li, Acta Phytotax. Sin. 14(1): 107. 1976.

贵州紫玉盘 *gui zhou zi yu pan*

Shrubs to 5 m tall, climbing. Branchlets sparsely stellate pubescent, glabrescent, lenticellate. Petiole 5–6 mm; leaf blade obovate to elliptic, 8–18 × 3.5–8 cm, papery, glossy, glabrous except for sparsely stellate pubescent veins, secondary veins 10–14 on each side of midvein and at ca. 45° to midvein, base rounded to broadly cuneate, apex acute and mucronate. Inflorescences leaf-opposed. Flowers not seen. Monocarp stipes ca. 1 cm, stout; monocarps ovoid, ca. 5.5 × 3.5 cm, densely stellate tomentose, apex rounded; epicarp tuberculate. Fl. Aug, fr. Sep–Oct.

• Secondary forests; ca. 1000 m. W Guangxi, SW Guizhou, Yunnan.

Uvaria kweichowensis is listed as Endangered (EN A2c) by the IUCN Red List of Threatened Species (Version 2010.3; <http://www.iucnredlist.org>; accessed on 6 Oct 2010).

4. *Uvaria calamistrata* Hance, J. Bot. 20: 77. 1882.

刺果紫玉盘 *ci guo zi yu pan*

Shrubs to 8 m tall, climbing. Branchlets sparsely stellate pubescent, glabrescent. Petiole 5–10 mm, stellate tomentose; leaf blade oblong, elliptic, or obovate-oblong, 5–17 × 2–7 cm, thinly leathery to thickly papery, abaxially densely stellate pubescent, adaxially sparsely stellate pubescent, secondary veins 8–10 on each side of midvein, base obtuse, apex long acuminate to acute. Inflorescences axillary or leaf-opposed, fasciculate, 1–4-flowered. Flowers ca. 1.8 cm in diam. Sepals ovate, ferruginous tomentose. Petals yellowish; outer petals oblong, ca. 8 × 5 mm, ± equal to or slightly larger than inner petals, pubescent. Stamen connectives apically rounded to obtuse, puberulent. Carpels 7–15, pubescent; ovules 6–9 per carpel. Monocarps red, ellipsoid, 2–3.5 × 1.5–2.5 cm; epicarp densely softly spiny. Seeds brown, compressed, 3-angular, 10–12 × 8–9 mm. Fl. May–Jul, fr. Jul–Dec.

Forests or scrub on very steep slopes; 200–800 m. Guangdong, Guangxi, Hainan [Vietnam].

The fine, strong bast fibers obtained from the inner bark of *Uvaria calamistrata* is used for cordage and sack manufacturing.

5. *Uvaria kurzii* (King) P. T. Li, Acta Phytotax. Sin. 14(1): 106. 1976.

黄花紫玉盘 *huang hua zi yu pan*

Uvaria hamiltonii J. D. Hooker var. *kurzii* King in Ridley, Mat. Fl. Malay. Penins. 1(4): 263. 1892.

Shrubs to 16 m tall, climbing, densely stellate tomentose

to stellate pubescent throughout. Petiole ca. 5 mm; leaf blade oblong-obovate, oblong-elliptic, or obovate, 9.5–21 × 4–8.5 cm, membranous, secondary veins 13–18 on each side of midvein, base narrowly and shallowly cordate, apex acuminate, obtuse, or sometimes rounded. Inflorescences leaf-opposed, 1- or 2-flowered; bracts ovate, ca. 7 × 3.5 mm. Flowers ca. 3.5 cm in diam. Pedicel 2.5–4 cm, bracteolate at middle. Sepals broadly ovate, ca. 5 × 5–6 mm. Petals yellow to yellowish; outer petals ovate to obovate-oblong, ca. 1.6 × 1.1–1.2 cm, apex rounded; inner petals as large as outer petals. Anthers oblong, ca. 3 mm; connectives apically truncate, puberulent. Carpels oblong, ca. 4 mm; ovules 10 per carpel, in 2 series; stigmas horseshoe-shaped, apex 2-cleft. Monocarps ovoid to subglobose, 2–3 × ca. 2 cm; epicarp densely tawny brown pubescent, not spiny. Fl. May, fr. Jul–Aug.

Dense forests; 400–1300 m. Guangxi, Yunnan [India].

Material of this species has been misidentified as *Cyathostemma yunnanense*.

6. *Uvaria grandiflora* Roxburgh ex Hornemann, Suppl. Hort. Bot. Hafn. 141. 1819.

大花紫玉盘 *da hua zi yu pan*

Unona grandiflora Leschenault ex Candolle; *Uvaria platypetala* Champion ex Benthams; *U. purpurea* Blume; *U. rhodantha* Hance.

Shrubs to 10 m tall, climbing, densely stellate pubescent to ferruginous tomentose throughout. Petiole 5–8 mm; leaf blade oblong-obovate, 7–30 × 3.5–12.5 cm, papery to thinly leathery, secondary veins 10–17(–24) on each side of midvein and at ca. 60° to midvein, base shallowly cordate, apex acute, shortly acuminate, or sometimes caudate. Inflorescences leaf-opposed, cymose, 1(–3)-flowered; bracts 2, ovate to obovate, ca. 3 × 2.5 cm. Flowers 7–10 cm in diam. Pedicel 0.5–5 cm. Sepals broadly ovate, 2–2.5 × 2.5–3.5 cm, connate for basal third, membranous, inside glabrous, apex obtuse to acute. Petals dark red to vermilion red, turning purplish with age, obovate to oval-obovate, 4–4.5 × 2.5–3.5 cm, puberulent. Stamens oblong to linear, 6–7 mm; connectives apically truncate, glabrous. Carpels oblong to linear, ca. 8 mm; ovules 30–50 per carpel, in 2 series; stigmas apically involute and 2-cleft. Monocarp stipes 1.5–3 cm; monocarps orange, cylindric, 4–6 × 1.5–2 cm, slightly constricted between seeds, fleshy, apex mucronate; epicarp not spiny, minutely tomentose. Seeds pale brown, ovoid, flattened. Fl. Mar–Nov, fr. May–Dec.

Open forests, thickets; 400–1000 m. S Guangdong, SE Guangxi, Hainan [India, Indonesia, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand, Vietnam].

7. *Uvaria rufa* Blume, Fl. Javae, Annonaceae, 19. 1830.

小花紫玉盘 *xiao hua zi yu pan*

Shrubs to 5 m tall, climbing. Branches stellate tomentose, hairs rust-colored when dry. Petiole 5–10 mm; leaf blade elliptic to ovate-oblong, 5–15 × 2.5–6 cm, thinly leathery, abaxially stellate tomentose, secondary veins ca. 12 on each side of midvein, base cordate, apex acuminate. Inflorescences leaf-opposed or extra-axillary, cymose, 1–4-flowered. Flowers ca. 1.5 cm in

Fl. China 19: 674–676. 2011.

diam., stellate pubescent. Petals purple to dark red, ovate, 8–12 × 6–7 mm, apex rounded. Stamens oblong; connectives apically truncate, glabrous. Carpels oblong; stigmas apically 2-cleft. Monocarp stipes 1–2 cm; monocarps ovoid-ellipsoid to sometimes globose, ca. 2 × 1–1.5 cm, not constricted between seeds, apex rounded; epicarp not spiny. Fl. Mar–Jun, fr. Jun–Oct.

Sparsely forested slopes; 400–1700 m. Hainan, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam].

8. *Uvaria macrophylla* Roxburgh, Fl. Ind. 2: 663. 1824.

紫玉盘 *zi yu pan*

Guatteria cordata Dunal; *Uvaria badiiflora* Hance; *U. cordata* (Dunal) Alston (1931), not Schumacher & Thonning (1827); *U. dolichoclada* Hayata; *U. macclurei* Diels; *U. macrophylla* var. *microcarpa* (Champion ex Benth) Finet & Gagnepain; *U. microcarpa* Champion ex Benth; *U. obovatifolia* Hayata; *U. synsepala* Miquel.

Shrubs to 18 m tall, climbing, stellate pubescent throughout or stellate tomentose when young and glabrescent, hairs ferruginous in dried specimens. Petiole 5–10 mm; leaf blade obovate, oblong-obovate, elliptic, or broadly oblong, 9–30 × 3–15 cm, leathery, secondary veins 9–14(–22) on each side of midvein, abaxially elevated, and usually adaxially impressed when dry, base shallowly cordate, truncate, rounded, or rarely cuneate, apex acute, obtuse, or rounded and mostly apiculate. Inflorescences leaf-opposed or rarely extra-axillary, sometimes cymose, 1- or 2(or more)-flowered; bracts ovate to broadly elliptic, 4–7 mm. Flowers 2–3.8 cm in diam. Pedicel 0.5–4 cm. Sepals ovate to broadly ovate, 4–5 × 4–5 mm. Petals dark red, purple, or purplish, subovate to oblong-elliptic, 1.2–2 × 0.6–1.3 cm, spreading, apex rounded to obtuse. Stamens oblong, ca. 9 mm; connectives ovoid, apex puberulent or glabrous; outer stamens sterile, oblanceolate, ca. 7 mm. Carpels oblong, ca. 5 mm; stigmas horseshoe-shaped, apex 2-cleft and involute. Monocarps orange, ovoid to subterete, 1–3 × 1–1.5 cm, not constricted between seeds; epicarp not spiny, hairy or glabrous. Seeds globose, 6.5–7.5 mm in diam. Fl. Mar–Sep, fr. Jul–Mar. $2n = 22$.

Open forests, scrub; 400–1400 m. Fujian, Guangdong, Guangxi, Hainan, Taiwan, SE Yunnan [Bangladesh, Indonesia, Malaysia, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam].

The fine strong bast fiber obtained from the bark of *Uvaria macrophylla* is used for making sacks. The roots are used as a sedative, to stop vomiting, and for rheumatism. The leaves are used to relieve pain and to reduce swellings.

Fl. China 19: 674–676. 2011.