

## 5. CYCLOCODON Griffith ex J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 17. 1857.

轮钟花属 lun zhong hua shu

Hong Deyuan (洪德元); Thomas G. Lammers

*Codonopsis* A. Candolle (1839), not Wallich (1824).

Herbs, (perennial or annual), erect or ascending. Stems mostly branched. Leaves opposite, rarely whorled. Flowers solitary, terminal or axillary, or in dichasium, perfect; bracteoles present, filiform or leaflike, or absent. Calyx partly adnate to or completely free from ovary, and thus epigynous or hypogynous for ovary; lobes 4–6, from subentire to branched. Corolla epigynous, tubular, 4–6-merous. Stamens 4–6; filaments dilated below, glabrous or ciliate at dilated part. Ovary inferior for corolla but from semi-inferior to superior for calyx, 3–6-locular; stigma 4–6-fid; ovules extremely numerous. Fruit a berry. Seeds extremely numerous, subglobose.

Three species: from the Himalaya to Japan (Ryukyu Islands), Philippines, and Papua New Guinea; three species in China.

- 1a. Flowers often 4-merous; calyx inserted on pedicel, distant from other floral parts by 1–4 mm, like involucrel bracts ..... 3. *C. parviflorus*  
1b. Flowers usually 5- or 6-merous; calyx at least partly adnate to ovary.  
2a. Flowers all terminal; bracteoles often absent, rarely present and then stalked and ± leaflike; calyx lobes denticulate to subentire; filaments glabrous; berry often white, less often yellow or pale red ..... 2. *C. celebicus*  
2b. Flowers terminal and axillary; bracteoles present and filiform; calyx lobes branched; filaments hairy below; berry purple-black ..... 1. *C. lancifolius*

1. *Cyclocodon lancifolius* (Roxburgh) Kurz, Flora 55: 303. 1872.

轮钟花 lun zhong hua

*Campanula lancifolia* Roxburgh, Fl. Ind. 2: 96. 1824; *Campanumoea axillaris* Oliver; *C. lancifolia* (Roxburgh) Merrill; *C. truncata* (Wallich ex A. Candolle) Diels; *Codonopsis lancifolia* (Roxburgh) Moeliono; *C. truncata* Wallich ex A. Candolle; *Cyclocodon truncatus* (Wallich ex A. Candolle) J. D. Hooker & Thomson.

Herbs, (perennial or annual), erect or ascending, sometimes lignified at base, usually glabrous throughout. Stems up to 3 m tall, hollow; branches multiple, horizontal or pendulous. Leaves opposite, rarely in whorls of 3, shortly petiolate; blade ovate or ovate-lanceolate to lanceolate, 6–15 × 1–5 cm, margin serrate, dentate, or crenate, apex acuminate. Flowers usually solitary, terminal, or both terminal and axillary, sometimes in a cyme of 3; pedicels or peduncles 1–10 cm, with a pair of filiform bracteoles at middle to top. Calyx adnate to ovary up to lower part of ovary; lobes (4 or)5(–7), filiform or linear, margins with ramiform teeth. Corolla white or pale red, tubular-campanulate, 7–12 mm, 5- or 6-cleft to middle; lobes ovate to ovate-triangular. Stamens 5 or 6; filaments equal to anthers in length, base dilated into lamellar part, margins villous-ciliate. Style glabrous or hairy; stigma (4 or)5- or 6-fid; ovary (4 or)5- or 6-locular. Berry purple-black when mature, globose, (4 or)5- or 6-locular, 5–10 mm in diam. Seeds extremely numerous, subglobose. Fl. and fr. Jul–Nov.

Forests, thickets, grasslands; below 1500 m. Chongqing, S Fujian, Guangdong, Guangxi, Guizhou, Hainan, SW Hubei, S and W Hunan, S Jiangxi (Quannan), Sichuan, Taiwan, SE Yunnan [Bangladesh, Cambodia, NE India, Indonesia, Japan (including Ryukyu Islands), Laos, Philippines, Vietnam].

2. *Cyclocodon celebicus* (Blume) D. Y. Hong, Acta Phytotax. Sin. 36: 109. 1998.

小叶轮钟草 xiao ye lun zhong cao

*Campanumoea celebica* Blume, Bijdr. 727. 1826; *Campanula celebica* (Blume) D. Dietrich; *Codonopsis celebica* (Blume) Miquel; *C. lancifolia* (Roxburgh) Moeliono subsp. *celebica* (Blume) Moeliono; *Cyclocodon lancifolius* (Roxburgh) Kurz subsp. *celebicus* (Blume) K. E. Morris & Lammers.

Herbs, (perennial or annual?), without caudexes, nor rhizomes, erect, 1–2 m tall, sometimes lignified at base. Stems terete, branched, sparsely hispidulous or subglabrous. Leaves shortly petiolate; petiole up to 5 mm; blade ovate-lanceolate to lanceolate, 5–10 × 2–4 cm, those on branches smaller, glabrous or sparsely puberulent along veins on both surfaces, base usually rounded, margins serrate, teeth pointed at apex, blade apex acuminate. Flowers terminal, usually in a dichasium of 3; pedicels 8–20 mm, hispidulous, usually without bracteoles, rarely with stalked and ± leaflike bracteoles. Calyx adnate to ovary up to ca. 1/3 of ovary; tube glabrous; lobes mostly 5 or 6, linear to linear-elliptic, 3–10 × 1–3 mm, entire or with 2–4 pairs of serrate teeth. Corolla pale blue, campanulate, 7–10 mm, 5- or 6-lobed to middle. Stamens 5 or 6, glabrous; filaments slightly dilated below. Ovary globose; stigma 5- or 6-fid. Berry white, oblate, 5- or 6-locular, up to 8 × 12 mm. Seeds extremely numerous. Fl. and fr. Jul–Jan.

Grassy slopes, thickets, woodlands; 800–2600 m. SE Xizang (Bomi, Mêdog, Zayü), S and W Yunnan [Bangladesh, NE India (Darjeeling, Sikkim), Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand, Vietnam].

3. *Cyclocodon parviflorus* (Wallich ex A. Candolle) J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 18. 1857.

小花轮钟草 xiao hua lun zhong cao

*Codonopsis parviflora* Wallich ex A. Candolle, Monogr. Campan. 123. 1830; *Campanula punduana* D. Dietrich; *Campanumoea parviflora* (Wallich ex A. Candolle) Benth. ex C.

Fl. China 19: 527–528. 2011.

B. Clarke.

Herbs, (perennial or annual?), erect, 1–2 m tall. Stems terete, branched, glabrous. Leaves shortly petiolate; petiole up to 6 mm; blade abaxially somewhat glaucous, lanceolate, 5–11 × 1.5–3 cm, those on branches smaller, both surfaces glabrous, base rounded or broadly cuneate, margin serrate, teeth apiculate at apex, blade apex acuminate. Flowers terminal, often in a dichasium of 3; pedicels 1–4 cm, glabrous, with or without a pair of leaflike or linear bracteoles. Calyx entirely free from ovary, and thus hypogynous, just below ovary or 1–4 mm distant from ovary, forming an anthophore; lobes usually 4, free from each other, linear, 3.5–8 mm, with 1–4 pairs of teeth. Corolla white, lobes equaling tube in length, 5–8 mm. Stamens 4; filaments subulate. Ovary globose or obovoid, 4-locular; stigma 4-fid. Fruit a globose berry, 4–6 mm. Seeds extremely numerous, light brown, orbicular or circular, compressed, reticulate. Fl. and fr. Sep–Jan.

Thickets, herb communities; below 1500 m. S and SW Yunnan [Bangladesh, Bhutan, NE India (Assam, Sikkim), Laos, Myanmar].

Fl. China 19: 527–528. 2011.