

9. OMPHALOGRAMMA (Franchet) Franchet, Bull. Soc. Bot. France 45: 178. 1898.

独花报春属 du hua bao chun shu

Primula subg. *Omphalogramma* Franchet, Bull. Soc. Bot. France 32: 272. 1855.

Herbs perennial, with stout woody rhizomes. Leaves basal, petiolate, usually minutely brown punctate. Scapes solitary in each rosette, without bracts. Flowers terminal, solitary. Calyx 5–7-lobed to base; lobes linear-lanceolate. Corolla funnelform, rarely campanulate to salverform, slightly zygomorphic, 5–7-lobed; lobes entire, emarginate or dentate at margin. Stamens 5–7, inserted on corolla tube; filaments glabrous or pubescent; anthers oblong to ovate, apex obtuse. Ovary ovoid, superior. Capsule oblong to cylindrical, dehiscent by short valves.

About 13 species: confined to the E Himalaya, W China, and N Myanmar; 9 species in China.

- 1a. Corolla salverform, tube cylindrical, expanded near apex 1. *O. vinciflorum*
- 1b. Corolla funnelform to campanulate, gradually expanded upward from base.
 - 2a. Corolla campanulate, 1.5–2.5 cm, tube slightly longer than calyx; filaments 1–1.5 mm 2. *O. brachysiphon*
 - 2b. Corolla funnelform, tube at least 2 × as long as calyx filaments 5–8 mm.
 - 3a. Base of leaf blade tapered to a broadly winged petiole.
 - 4a. Corolla tube ca. 2.5 cm; style included; filaments glabrous; capsule 1.5–2 cm 8. *O. elwesianum*
 - 4b. Corolla tube 3–4 cm; style exerted; filaments glandular; capsule 2–3 cm 9. *O. souliei*
 - 3b. Base of leaf blade (at least the lower 1 or 2 leaves) rounded or cordate; petiole distinct from leaf blade.
 - 5a. Leaves glabrous adaxially, pilose abaxially 7. *O. forrestii*
 - 5b. Leaves pubescent.
 - 6a. Corolla tube 6–9 mm wide at apex, limb 2–3 cm wide 5. *O. minus*
 - 6b. Corolla tube more than 10 mm wide, limb usually more than 3 cm wide.
 - 7a. Corolla lobes incised-dentate 6. *O. delavayi*
 - 7b. Corolla lobes emarginate or 2-lobed, lobes entire to obscurely crenulate.
 - 8a. Style glandular pubescent 3. *O. tibeticum*
 - 8b. Style glabrous 4. *O. elegans*

1. *Omphalogramma vinciflorum* (Franchet) Franchet, Bull. Soc. Bot. France 45: 180. 1898.

独花报春 du hua bao chun

Primula vinciflora Franchet, Gard. Chron., S開. 3, 1: 574. 1887; *Omphalogramma engleri* (R. Knuth) I. B. Balfour; *O. rockii* W.W. Smith; *O. viola-grandis* (Farrer & Purdom) I. B. Balfour; *P. engleri* R. Knuth; *P. viola-grandis* Farrer & Purdom.

Plants perennial. Bud scales overlapped, yellowish brown, broadly ovate to oblong. Leaves developed at same time as flowers; petiole winged, not well differentiated or to 2 × as long as leaf blade; leaf blade oblanceolate to oblong or obovate, 3–14 × 1–3(–4) cm, with multicellular hairs, base usually attenuate but occasionally subrounded to cordate, margin entire to very obscurely crenulate, apex obtuse. Scapes (8–) 10–35 cm, elongated to 80 cm in fruit, spreading pubescent, especially near apex. Calyx 5–10 mm, fulvous pilose outside, parted nearly to base; lobes 6–8, lanceolate to linear-lanceolate, apex obtuse. Corolla deep indigo-blue, salverform; tube cylindrical, 2.3–3 cm, brownish glandular pubescent outside; limb 3–4(–5) cm wide, 6–8-lobed; lobes variable, usually obovate to obovate-elliptic, 1–2.5 × ca. 1 cm, shallowly to deeply emarginate. Filaments 3–5 mm, glabrous; anthers oblong, 1.5–2 mm. Ovary and style glabrous. Capsule ca. 2 cm. Fl. May–Jun.

* Damp meadows, shrubs; 2200–4600 m. S Gansu, N and W Sichuan, E Xizang, NW Yunnan.

2. *Omphalogramma brachysiphon* W.W. Smith, Notes Roy. Bot. Gard. Edinburgh 19: 219. 1937.

钟状独花报春 zhong zhuang du hua bao chun

Plants perennial. Rosette 3–9 cm tall, with membranous overlapped bud scales at base. Petiole nearly as long as leafblade, nearly completely concealed by basal scales; leaf blade oblanceolate, 1.5–5 cm × 3–10 mm, tapered to base, glabrous, margin entire or occasionally remotely denticulate, apex obtuse. Scapes developing at same time as leaves, 3–9 cm, elongated to 20 cm in fruit, reddish pubescent. Calyx 4–6 mm, pubescent outside, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla dark purple, campanulate, 1.5–2.5 cm, glabrous or puberulent outside; tube slightly longer than calyx, gradually expanding upward from base; limb 1.5–2 cm wide, usually 5-lobed; lobes elliptic to oblong-elliptic, apex incised-dentate. Stamens inserted ca. 5.5 mm above base of corolla tube; filaments 1–1.5 mm, glabrous; anthers oblong, ca. 3 mm. Ovary and style glabrous. Capsule unknown.

* Open places in damp soil, moss-covered rocky slopes; 4000–4600 m. SE Xizang (Mainling Xian, M昭og Xian).

3. *Omphalogramma tibeticum* H. R. Fletcher, Notes Roy. Bot. Gard. Edinburgh 20: 153. 1949.

西藏独花报春 xi zang du hua bao chun

Plants perennial. Bud scales overlapped, ovate to oblong, 1–4 cm. Leaves developed at same time as flowers; outer leaves usually broadly ovate, base cordate to rounded, apex acute;

petiole of inner leaves winged, shorter than leaf blade at anthesis, ca. $2 \times$ as long as leaf blade at fruiting; leaf blade elliptic, 3–9 . 1.5–4 cm, abaxially pubescent along veins, adaxially sparsely pilose, base attenuate, margin entire or nearly so, apex rounded to obtuse. Scapes 10–18 cm, elongated to 30 cm in fruit, with multicellular hairs, especially toward apex. Calyx 1–1.3 cm, fulvous pilose, parted nearly to base, 6-lobed; lobes lanceolate to linear-lanceolate, apex acute to obtuse; veins 3. Corolla purple, glandular pilose outside; tube 3–4 cm, gradually enlarged upward from base; lobes oblong to subobovate, 1.3–1.5 cm, obscurely emarginate and crenulate at apex. Stamens inserted at middle of corolla tube; filaments 7–10(–12) mm, glabrous; anthers 6–7 mm. Ovary glabrous; style glandular pubescent at base. Capsule unknown. Fl. Jul.

* Alpine scrubland; ca. 4000 m. SE Xizang (Bomi Xian).

4. *Omphalogramma elegans* Forrest, Notes Roy. Bot. Gard. Edinburgh 14: 55. 1923.

丽花独报春 li hua du bao chun

Plants perennial, with overlapped bud scales at base. Leaves usually developed later than flowers; petiole initially nearly as long as leaf blade, $2-3 \times$ as long as leaf blade at fruiting; leaf blade ovate to ovate-lanceolate, ca. 6×3 cm at anthesis, enlarged to ca. 10×4 cm at fruiting, abaxially sparsely pilose along midvein and lateral veins, adaxially with long white multicellular hairs, base cuneate to rounded or cordulate, margin entire, occasionally remotely denticulate, apex obtuse. Scapes to 15 cm, elongated to 75 cm in fruit, initially densely pilose. Calyx 9–10 mm, parted nearly to base; lobes narrowly lanceolate to sublinear, pubescent outside, apex acute. Corolla deep violet, 4–5.6 cm; tube ca. $3 \times$ as long as calyx; limb 4–6 cm wide; lobes oblong to broadly obovate or elliptic, 2-lobate, margin entire to dentate. Stamens inserted at middle of corolla tube; filaments 6–10 mm, glabrous; anthers 5–6 mm. Ovary and style glabrous. Capsule 1.8–2 cm. Fl. Jun–Jul.

Margins of woodlands and shrubs, peaty soils; 3200–4700 m. SE Xizang (Tsarong Xian), NW Yunnan [N Myanmar].

5. *Omphalogramma minus* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 59: 248. 1922.

小独花报春 xiao du hua bao chun

Plants perennial. Rootstock 1–4 cm. Bud scales overlapped at base, ovate to oblong, membranous. Leaves developed at same time as flowers; petiole initially nearly as long as leaf blade, to $2 \times$ as long as leaf blade at fruiting; leaf blade broadly ovate, $2-3(-6)$. $1-2(-3)$ cm, abaxially pubescent along midvein and lateral veins, adaxially with reddish multicellular hairs, base subtruncate to cordulate, margin obscurely repand, fringed with hairs, apex rounded to obtuse. Scapes 5–10(–15) cm, elongated to 10–20(–50) cm in fruit, pilose. Calyx 6–10 mm, parted nearly to base; lobes linear-lanceolate, pilose, apex acute; veins 3. Corolla deep indigo-purple or rose-purple; tube 2–2.5 cm, 6–9 mm wide at apex, uniformly narrow-cylindric; limb 2–3 cm wide; lobes broadly ovate to oblong, apex incised-denticulate. Stamens inserted slightly above middle of corolla tube; filaments 5–7 mm,

glabrous; anthers 3–3.5 mm. Ovary and style glabrous. Capsule 5–10(–15) cm. Fl. Jun–Jul.

* Gravelly grassy slopes, among shrubs; 3500–4000 m. SW Sichuan, E Xizang, NW Yunnan.

6. *Omphalogramma delavayi* (Franchet) Franchet, Bull. Soc. Bot. France 45: 179. 1898.

大理独花报春 da li du hua bao chun

Primula delavayi Franchet, Bull. Soc. Bot. France 32: 272. 1885; *Omphalogramma farreri* I. B. Balfour.

Plants perennial. Stock to 10 cm, with overlapping bud scales at base. Leaves with petioles nearly as long as leaf blade, to $3 \times$ as long as leaf blade at fruiting; leaf blade broadly ovate to oblong or suborbicular, not well developed and partly concealed by basal bud scales at anthesis, $3-7 \times 2-5$ cm, enlarged to ca. 10×7 cm at fruiting, abaxially with fulvous multicellular hairs along veins and at margin, adaxially sparsely pubescent along midvein, base cordulate to cordate, margin obscurely repand to crenulate, apex obtuse to rounded. Scapes 6–15 cm, elongated to 20–30 cm in fruit, pilose. Flowers precocious. Calyx broadly campanulate, 1.2–1.5 cm, parted nearly to base; lobes lanceolate, pubescent outside, margin occasionally dentate, apex acute to obtuse; veins 3–5. Corolla rose-purple, funnelform, 4–5 cm, pilose outside; tube $2-3 \times$ as long as calyx; limb 3–3.5 cm wide; lobes ovate to oblong-ovate, apex incised-dentate. Stamens inserted 1–1.3 cm above base of corolla tube; filaments 5–7.5(–10) mm, slightly pubescent; anthers 5–6 mm. Ovary glabrous; style pubescent on lower part. Capsule 2–2.5 cm. Fl. Jun. $2n = 48$.

* Alpine scrubland, grassy slopes; 3300–4000 m. W Yunnan.

7. *Omphalogramma forrestii* I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 13: 23. 1920.

中滇独花报春 zhong dian du hua bao chun

Plants perennial, base with overlapped bud scales. Leaves developing at same time as flowers; petiole nearly as long as to $2 \times$ as long as leaf blade, narrowly winged; leaf blade oblong-obovate to oblong-elliptic, $4-10 \times 2.5-5$ cm, enlarged after anthesis, glandular ciliate, abaxially pilose along midvein and lateral veins, adaxially glabrous, base subcuneate to rounded or cordulate, margin slightly repand to remotely denticulate, apex obtuse. Scapes 15–25 cm, elongated to 65 cm in fruit, densely pilose toward apex. Calyx 1–1.3 cm, densely pubescent outside; lobes lanceolate, glandular ciliate, apex obtuse; veins 3. Corolla dark purple, funnelform, 5–7 cm, sparsely glandular pubescent; tube ca. $4 \times$ as long as calyx, gradually enlarged upward from base; limb ca. 5 cm wide; lobes broadly ovate to elliptic or even suborbicular, sparsely ciliate, margin obscurely crenulate, apex 2-lobed. Stamens inserted above middle of corolla tube; filaments 7–7.5 mm, glabrous; anthers 4.2–5 mm. Ovary and style glabrous. Capsule to 2 cm. Fl. Jun–Jul.

* Gravelly meadows, *Rhododendron* thickets; 3500–4000 m. SW Sichuan, NW Yunnan.

8. *Omphalogramma elwesianum* (King ex Watt) Franchet, Bull. Soc. Bot. France 45: 179. 1898.

光叶独花报春 *guang ye du hua bao chun*

Primula elwesiana King ex Watt, J. Linn. Soc., Bot. 20: 13. 1882; *Omphalogramma elwesianum* var. *assamicum* H. R. Fletcher.

Plants perennial, base with overlapped bud scales. Leaves developed at same time as flowers; petiole broadly winged, ca. as long as to shorter than leaf blade; leaf blade oblanceolate, 2–10 × 0.5–2.5 cm, enlarged to 20 cm at fruiting, tapered to base, glabrous, margin entire to obscurely denticulate, apex rounded to obtuse. Scapes 4–12 cm, to 40 cm in fruit, crimson pubescent toward apex. Calyx 6–12 mm, pubescent outside, parted nearly to base; lobes lanceolate, margin sometimes dentate near apex. Corolla purple, funnelform; tube ca. 2.5 cm, gradually enlarged upward from base, pubescent outside; limb 2–3.5 cm wide; lobes oblong to obovate, ciliate, margin emarginate and obscurely dentate at apex. Stamens inserted at middle of corolla tube; filaments ca. 5 mm, glabrous; anthers 3–3.5 mm. Ovary glabrous; style included. Capsule 1.5–2 cm. Fl. Jul. $2n = 96$.

Wet meadows; 3800–4000 m. SE Xizang [Bhutan, India, Nepal, Sikkim].

9. *Omphalogramma souliei* Franchet, Bull. Soc. Bot. France 45: 180. 1898.

长柱独花报春 *chang zhu du hua bao chun*

Omphalogramma franchetii (Pax) W. J. Harley; *O. souliei* var. *pubescens* H. R. Fletcher; *Primula franchetii* Pax.

Plants perennial. Stock 4–10 cm. Bud scales overlapped at base, oblong, glabrous, apex brownish. Leaves developed at same time as flowers or shortly thereafter; petiole winged, portion exerted from basal scales very short to 1/3 as long as leaf blade; leaf blade elliptic to oblong, 2–8 × 1.2–5 cm at anthesis, tapered to base, glabrous or sparsely pilose when young, margin entire, apex rounded to apiculate. Scapes 12–25 cm, elongated to 60 cm in fruit, glandular pilose. Calyx campanulate, 7–12(–16) mm, with glandular hairs, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla deep red to bluish purple; tube 3–4 cm, pilose outside; limb 4–6 cm wide; lobes broadly obovate to oblong, 2-lobed, margin entire to incised-dentate. Stamens inserted at middle of corolla tube; filaments to 1 cm, glandular; anthers ca. 5 mm. Ovary glabrous; style exerted. Capsule 2–3 cm. Fl. Jun–Jul.

* Margins of *Pinus* forests and *Rhododendron* thickets; 3300–4500 m. SW Sichuan, E Xizang, NW Yunnan.

