

## 19. GENTIANELLA Moench, Methodus 482. 1794.

假龙胆属 *jia long dan shu*

*Aliopsis* Omer & Qaiser; *Aloitis* Rafinesque.

Herbs annual, biennial [or perennial]. Leaves opposite [or whorled]. Flowers terminal, solitary or in cymes, 4- or 5-merous. Calyx without intracalycular membrane. Corolla tubular or funnellform, either without appendages or with a vascularized fringed scale across base of each lobe, plicae absent. Nectaries at base of corolla tube. Stamens inserted on corolla tube. Capsules 2-valved, many seeded. Seeds smooth to warty.

About 125 species: N and S temperate zones; nine species in China.

- 1a. Corolla lobes fimbriate at base; calyx lobes keeled; stem branched apically ..... 9. *G. acuta*
- 1b. Corolla lobes glabrous at base; calyx lobes not keeled; stem branched from base.
  - 2a. Flowers 5-merous.
    - 3a. Anthers blue; calyx lobe margins and midveins blackish; sinus between lobes cuneate ..... 8. *G. azurea*
    - 3b. Anthers yellow; calyx lobe margins and midveins not blackish; sinus between lobes acute or rounded.
      - 4a. Stem leaf blades linear; corolla lobes apically obtuse ..... 6. *G. moorcroftiana*
      - 4b. Stem leaf blades ovate-lanceolate to ovate; corolla lobes apically mucronate.
        - 5a. Plants 5–8 cm tall; stem densely purple pilose; leaves petiolate; calyx herbaceous, sinus between lobes acute ..... 1. *G. gentianoides*
        - 5b. Plants 10–45 cm tall; stem glabrous; leaves sessile; calyx membranous, sinus between lobes rounded ..... 2. *G. turkestanorum*
  - 2b. Flowers 4-merous.
    - 6a. Leaves sessile, blade base and apex attenuate ..... 7. *G. angustiflora*
    - 6b. Leaves petiolate, blade base narrowed to abruptly contracted, apex obtuse to rounded.
      - 7a. Calyx lobes unequal in width; corolla lobes densely papillate outside ..... 3. *G. anomala*
      - 7b. Calyx lobes all similar in width; corolla lobes glabrous outside.
        - 8a. Calyx lobes spatulate, apically recurved; corolla purple ..... 4. *G. arenaria*
        - 8b. Calyx lobes elliptic to rhomboid, erect; corolla pale yellow ..... 5. *G. pygmaea*

**1. *Gentianella gentianoides*** (Franchet) Harry Smith in Handel-Mazzetti, Symb. Sin. 7: 981. 1936.

密花假龙胆 *mi hua jia long dan*

*Swertia gentianoides* Franchet, Bull. Soc. Bot. France 46: 314. 1899; *Gentiana scabrata* W. W. Smith.

Annuals 5–8 cm tall. Stems erect, branched from base, purple pilose. Basal leaves few, withered at anthesis. Stem leaf petiole flattened, to 6 mm, ciliolate; leaf blade usually tinged purple, ovate, ca. 1.2 × 1.2 cm, base contracted, margin scabrous, apex obtuse, veins 3. Cymes axillary and terminal, many flowered, crowded. Flower 5-merous. Pedicel slender, 0.2–2 cm. Calyx 5–8 mm; lobes usually tinged purple, narrowly elliptic, 3.5–7 mm, sinus between lobes acute, margin scabrous, apex acuminate and caudate, veins 1–3. Corolla pale blue, with white toward base, funnellform, 0.6–1.4 cm × 3.5–6 mm; lobes narrowly oblong, 3–7 mm, apex obtuse and mucronate. Nectaries 10, green. Stamens inserted at middle of corolla tube; filaments white, 3–6 mm, base decurrent into wings of corolla tube; anthers yellow, ellipsoid, 0.8–1.8 mm. Style linear, 3–6 mm; stigma lobes suborbicular. Capsules ovoid. Seeds light brown, subglobose, 0.3–0.4 mm in diam.; seed coat reticulate. Fl. and fr. Oct–Nov.

• Grassland slopes, scrub, forests; 2700–4200 m. S Sichuan, NE and W Yunnan.

**2. *Gentianella turkestanorum*** (Gandoger) Holub, Folia Geobot. Phytotax. 2: 118. 1967.

新疆假龙胆 *xin jiang jia long dan*

*Gentiana turkestanorum* Gandoger, Bull. Soc. Bot. France 65: 60. 1918.

Annuals or biennials 10–45 cm tall. Stems erect, subquadrangular, branched from base. Leaves sessile, ovate-lanceolate to ovate, to 4.5 × 2 cm, base obtuse to rounded, margin usually revolute, apex acute, veins distinct. Cymes many flowered, crowded, each cyme subtended by 2 large ovate-lanceolate bracts. Flowers 5-merous, variable in size, terminal ones 2–3 × larger than others. Calyx tube 1.5–7(–9) mm, membranous; lobes linear to linear-elliptic, 2–10 × ca. 1 mm, unequal, sinus between lobes rounded, margin scabrous, apex acute and long apiculate, midvein distinct. Corolla pale blue, with dark blue veins, tubular to campanulate-tubular, 0.7–2 cm; lobes elliptic-triangular to elliptic, 3–7 mm, apex obtuse and mucronate. Nectaries 10, green, oblong. Stamens inserted at basal part of corolla tube; filaments white, ca. 7 mm, base decurrent into narrow wings of corolla tube; anthers yellow, ellipsoid, ca. 1.2 mm. Style linear; stigma lobes suborbicular. Gynophore 1.8–2.2 cm. Seeds light brown, subglobose, ca. 0.8 mm in diam.; seed coat reticulate. Fl. and fr. Jun–Jul.

Moist places around lakes, river banks, shady meadow slopes,

forests; 1500–3100 m. N Xinjiang [Kazakhstan, Mongolia, Russia Tajikistan].

**3. *Gentianella anomala*** (C. Marquand) T. N. Ho, Acta Biol. Plateau Sin. 1: 39. 1982.

异萼假龙胆 *yi e jia long dan*

*Gentiana anomala* C. Marquand, Bull. Misc. Inform. Kew 1928: 49. 1928.

Annuals 1–5 cm tall. Stems erect, slender, simple or branched from base. Basal leaves withered at anthesis. Stem leaves with petiole flattened, 2–7 mm; leaf blade elliptic, ovate-oblong, or broadly ovate, 2–7 × 1.5–4 mm, base narrowed to abruptly contracted, apex obtuse to rounded. Inflorescences 1- to many flowered. Pedicel usually arcuate, filiform, to 2.7 cm. Flower 4-merous, variable in size, terminal ones 2–4 × larger than others. Calyx 1.5–6 mm; lobes dimorphic, 1 pair ovate-elliptic and ca. 2 mm wide, another pair narrowly lanceolate and ca. 1 mm wide, base narrowed, apex acuminate and apiculate. Corolla pale purple, tubular, 2.5–10 mm; lobes lanceolate, 1.5–5 mm, apex acute and apiculate, densely papillate outside. Nectaries 8, green, oblong. Stamens inserted at middle of corolla tube; filaments white, ca. 1.5 mm; anthers ellipsoid, ca. 1 mm. Ovary ovoid-ellipsoid, to 6 mm. Style linear; stigma lobes oblong. Fl. Oct.

• Gravel slopes, sheltered limestone cliffs; 3400–4200 m. NW and S Sichuan, NW Yunnan.

**4. *Gentianella arenaria*** (Maximowicz) T. N. Ho, Acta Biol. Plateau Sin. 1: 39. 1982.

紫红假龙胆 *zi hong jia long dan*

*Gentiana arenaria* Maximowicz, Diagn. Pl. Nov. Asiat. 8: 30. 1892.

Annuals 2–4 cm tall; whole plant dark purple. Stems prostrate to ascending, striate, much branched from base. Leaves short petiolate; leaf blade spatulate to oblong-spatulate, 5–8 × 1–1.3 mm including petiole, base narrowed, apex rounded, veins indistinct. Flowers terminal, solitary, 4-merous. Calyx 3–4.5 mm; lobes recurved, spatulate, base narrowed, apex subrounded, veins indistinct. Corolla purple, tubular, 5–5.5 × 3–4.5 mm; lobes oblong, 1.6–1.8 mm, apex subrounded. Nectaries 8. Stamens inserted at apical to middle part of corolla tube; filaments white, ca. 2 mm; anthers yellow, ovoid to ellipsoid, 0.2–0.3 mm. Style linear; stigma lobes linear. Capsules ovoid-ellipsoid, 6.5–7 mm. Seeds dark brown, subglobose, to 1 mm; seed coat reticulate. Fl. and fr. Jul-Sep.

• Sandy places on river banks, alpine rocky places; 3400–5400 m. Gansu, Qinghai, N Xizang.

**5. *Gentianella pygmaea*** (Regel & Schmalhausen) Harry Smith in S. Nilsson, Grana Palynol. 7(1): 144. 1967.

矮假龙胆 *ai jia long dan*

*Gentiana pygmaea* Regel & Schmalhausen, Izv. Imp. Obshch. Ljubit. Estestv. Moskovsk. Univ. 34(2): 54. 1882;

*Aliopsis pygmaea* (Regel & Schmalhausen) Omer & Qaiser; *G. thomsonii* C. B. Clarke.

Annuals 1–3 cm tall. Stems prostrate to ascending, striate, much branched from base. Leaves short petiolate; leaf blade spatulate to obovate, 3–9 × 1–1.2 mm including petiole, base narrowed, apex obtuse to rounded, veins indistinct. Flowers terminal, solitary, 4-merous. Pedicel ascending, to 2 cm. Calyx 3–4 mm; lobes erect, elliptic to rhomboid, base narrowed, apex subrounded, veins 3 and indistinct. Corolla pale yellow, tubular, 4.5–5.5 × 3–4 mm; lobes oblong, 2–2.5 mm, apex subrounded. Nectaries 8. Stamens inserted just above middle of corolla tube; filaments white, 1.5–2 mm; anthers yellow, ellipsoid, ca. 0.5 mm. Style linear; stigma lobes purple, suborbicular. Capsules ovoid-ellipsoid, 5.5–6 mm. Seeds dark brown, subglobose, 0.7–0.8 mm; seed coat reticulate. Fl. and fr. Jul-Aug.

Sandy slopes, alpine rocky places; 3600–5300 m. Qinghai, N Sichuan, Xinjiang, Xizang [India, Kyrgystan, Sikkim, Tajikistan].

**6. *Gentianella moorcroftiana*** (Wallich ex G. Don) Airy Shaw, Hooker's Icon. Pl. 35: t. 3431. 1943.

普兰假龙胆 *pu lan jia long dan*

*Gentiana moorcroftiana* Wallich ex G. Don, Gen. Hist. 4: 182. 1837; *Aliopsis moorcroftiana* (Wallich ex G. Don) Omer, Qaiser, & Ali; *G. moorcroftiana* var. *maddenii* C. B. Clarke.

Annuals 5–20 cm tall. Stems erect, striate, branched from base. Leaves sessile, linear, 6–12 × 1–1.5 mm, base and apex obtuse, margin scabrous, veins indistinct. Cymes axillary and terminal, few flowered. Pedicel to 4 mm. Flowers 5-merous. Calyx 7–8 mm; lobes linear, 4–5.5 mm, slightly unequal, sinus between lobes subrounded, margin scabrous, apex obtuse, veins indistinct. Corolla blue, with pale yellow toward base, tubular, 1.2–1.4 cm; lobes oblong, 2.5–3.5 mm, apex obtuse. Nectaries 10. Stamens inserted at middle of corolla tube; filaments white, 4–5 mm; anthers yellow, ellipsoid, ca. 1.2 mm. Style indistinct; stigma lobes suborbicular. Capsules ovoid-ellipsoid, ca. 7 mm; gynophore ca. 2 mm, stout. Fl. Aug.

Hillsides; ca. 4500 m. Xizang (Burang Xian) [India, Kashmir, Nepal].

**7. *Gentianella angustiflora*** Harry Smith, J. Jap. Bot. 56: 275. 1981.

窄花假龙胆 *zhai hua jia long dan*

Annuals 12–15 cm tall. Stems erect, striate, branched from base. Leaves sessile, lanceolate to elliptic, 0.9–1.2 cm × 2–4 mm, base and apex attenuate, veins indistinct. Cymes axillary and terminal, sometimes secund, few flowered. Flower usually nodding, 4-merous. Pedicel to 2 cm, filiform, striate. Calyx 3.5–5 mm; lobes spreading, narrowly elliptic to elliptic-spatulate, base slightly contracted, margin scabrous, apex obtuse, veins indistinct. Corolla blue, tubular, 9–10 × 3–3.5 mm; lobes broadly elliptic, 2.5–3 mm, apex obtuse to rounded. Nectaries 8, oblong. Stamens inserted at middle of corolla tube; filaments pale blue, flattened, 2.5–3 mm,

decurent basally into narrow wings of corolla tube; anthers yellow, ellipsoid, ca. 0.7 mm. Ovary sessile, ovoid-ellipsoid, ca. 5.5 mm. Style indistinct; stigma lobes suborbicular. Fl. Aug-Sep.

Roadsides, hillsides; 3400–3800 m. Xizang (Nyalam Xian) [Kashmir, Nepal].

**8. *Gentianella azurea*** (Bunge) Holub, Folia Geobot. Phytotax. 2: 116. 1967.

黑边假龙胆 hei bian jia long dan

*Gentiana azurea* Bunge, Mém. Soc. Imp. Naturalistes Moscou 7: 230. 1829.

Annuals 2–25 cm tall. Stems ascending to erect, striate, branched from base. Basal leaves withered at anthesis. Stem leaves sessile, oblong, elliptic-lanceolate, or elliptic, 0.3–2.2 cm × 1–7 mm, base narrowed, margin scabrous, apex obtuse, midvein distinct. Cymes axillary and terminal, rarely 1-flowered. Flowers 5-merous. Pedicel to 4.5 cm. Calyx 4–9 mm; lobes linear-lanceolate, elliptic, or ovate-oblong, sinus between lobes cuneate, margin and midvein blackish, apex acute to obtuse. Corolla pale blue to blue, funnelform, 5–14 × 4.5–5.5 mm; lobes oblong, 2–6 mm, apex obtuse. Nectaries 10. Stamens inserted at middle of corolla tube; filaments 2–4.5 mm; anthers blue, ovoid to ellipsoid, 0.4–1 mm. Style linear; stigma lobes suborbicular. Capsules ovoid-ellipsoid, 0.6–1.5 cm. Seeds brown, ellipsoid, 1–1.2 mm; seed coat reticulate. Fl. and fr. Jul-Sep.

Grasslands on hillsides, alpine meadows, scrub, forests; 2200–4900 m. Gansu, Qinghai, NW Sichuan, Xinjiang, Xizang, NW Yunnan [Bhutan, Kazakhstan, Kyrgyzstan, Mongolia, Russia (Siberia)].

**9. *Gentianella acuta*** (Michaux) Hultén, Memoranda Soc. Fauna Fl. Fenn. 25: 76. 1950.

尖叶假龙胆 jian ye jia long dan

*Gentiana acuta* Michaux, Fl. Bor.-Amer. 1: 177. 1803; *G. amarella* Linnaeus var. *fastigiata* Ling.

Annuals 25–35 cm tall. Stems erect, subquadrangular, branched apically. Basal leaves withered at anthesis. Stem leaves sessile, lanceolate to ovate-lanceolate, 1.5–3.5 cm × 3–10 mm, base obtuse to rounded, apex acute, veins abaxially 3–7. Inflorescences axillary and terminal, forming narrow panicles. Flowers 5- rarely 4-merous. Pedicel slender, 2–8 mm, subquadrangular. Calyx 5–9 mm; lobes narrowly lanceolate, keeled, 4–7 mm, apex acuminate. Corolla blue, tubular, 8–11 × ca. 3 mm; lobes oblong-lanceolate, 3–4 × ca. 1.5 mm, base of each lobe bearing 6 or 7 unequal vascular fimbriae, apex acute. Nectaries 8 or 10. Stamens inserted at middle of corolla tube; filaments ca. 2 mm, decurrent basally into narrow wings of corolla tube; anthers blue, ellipsoid, ca. 1 mm. Style indistinct; stigma lobes suborbicular. Capsules sessile, narrowly ellipsoid, 5–7 mm. Seeds brown, globose, 0.6–0.8 mm in diam.; seed coat warty. Fl. and fr. Aug-Sep.

Hillsides, wet meadows; below 1500 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi [Mongolia, E Russia; North America].

Flora of China 16: 136–138. 1995.