

## 12. RHODODENDRON Linnaeus, Sp. Pl. 1: 392. 1753.

杜鹃属 du juan shu

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Shrubs or trees, terrestrial or epiphytic, with various hairs, and/or with peltate scales or glabrous, indumentum sometimes detersile (the hairs tangled and coming away as a layer). Leaves evergreen, deciduous or semideciduous, alternate, sometimes clustered at stem apex; margin entire, very rarely crenulate, abaxial indumentum sometimes with a pellicle (a thin skinlike layer on the surface). Inflorescence a raceme or corymb, mostly terminal, sometimes lateral, few- to many-flowered, sometimes reduced to a single flower. Calyx persistent, 5–8-lobed, sometimes reduced to a rim, lobes minute and triangular to large and conspicuous. Corolla funnelform, campanulate, tubular, rotate or hypocrateriform, regular or slightly zygomorphic, 5(–8)-lobed, lobes imbricate in bud. Stamens 5–10(–27), inserted at base of corolla, usually declinate; filaments linear to filiform, glabrous or pilose towards base; anthers without appendages, opening by terminal or oblique pores. Disk usually thick, 5–10(–14)-lobed. Ovary 5(–18)-locular, with hairs and/or scales, rarely glabrous. Style straight or declinate to deflexed, persistent; stigma capitate-discooid, crenate to lobed. Capsule cylindrical, coniform, or ovoid, sometimes curved, dehiscent from top, septicidal; valves thick or thin, straight or twisted. Seeds very numerous, minute, fusiform, always winged, or both ends with appendages or thread-like tails.

About 1000 species: Asia, Europe, North America, two species in Australia; 571 species (409 endemic) in China.

- 1a. Inflorescence buds lateral, usually in axils of upper or lower leaves of last year's shoots; uppermost inflorescence buds (or leaf bud) in axils of uppermost leaves, subterminal.
  - 2a. New foliage shoots from axils of leaves below inflorescence buds; leaves with peltate scales, deciduous or semievergreen; flowers appearing before leaf emergence ..... 4. *R.* subg. *Rhodorastrum*
  - 2b. New foliage shoots arising from uppermost (pseudoterminal) buds, and from axils of leaves; leaves evergreen.
    - 3a. Plants with peltate scales; capsule short, cylindric ..... 3. *R.* subg. *Pseudorhodorastrum*
    - 3b. Plants without peltate scales; capsule conical-ovoid or cylindric ..... 6. *R.* subg. *Azaleastrum*
- 1b. Inflorescence buds terminal, sometimes with additional lateral floral buds immediately below, very rarely axillary from lower leaves (as in some species of *R.* subsect. *Cinnabarina*).
  - 4a. Plant with peltate scales, sometimes also with other hairs.
    - 5a. Leaves evergreen, very rarely semideciduous to deciduous; flowers appearing after leaf emergence; style usually straight; plant usually without hairs ..... 1. *R.* subg. *Rhododendron*
    - 5b. Leaves deciduous or semideciduous, very rarely evergreen; flowers appearing before leaf emergence; style usually short and recurved; plant usually hairy ..... 2. *R.* subg. *Pseudazalea*
  - 4b. Plant without peltate scales, with various hairs, or glabrous.
    - 6a. Corolla divided nearly to base on lower side; peduncle bearing leafy bracts; style curved ..... 9. *R.* subg. *Therorhodion*
    - 6b. Corolla not divided to base; peduncle without bracts; style slender, straight.
      - 7a. Flowers and new leafy shoots from same terminal buds; leaves persistent to deciduous; indumentum often with strap-shaped setae ..... 8. *R.* subg. *Tsutsusi*
      - 7b. Flowers from terminal buds; new leafy shoots from lateral buds, i.e., from axils of leaves of previous season; indumentum without flattened setae.
        - 8a. Leaves evergreen; stamens 10(–20) ..... 5. *R.* subg. *Hymenanthus*
        - 8b. Leaves deciduous; stamens 5 (in Chinese species) ..... 7. *R.* subg. *Pentanthera*

### 1. *Rhododendron* subg. *Rhododendron*

杜鹃亚属 du juan ya shu

Shrubs, more rarely trees, usually evergreen, seldom deciduous, sometimes epiphytic; young shoots densely scaly, often without hairs, sometimes also pubescent, hispid or woolly. Leaf blade normally leathery; abaxial surface densely scaly, often also adaxial leaf surfaces, pedicels, calyx, corolla, ovary, and style, hairs generally absent, rarely simple pilose. Inflorescence terminal or axillary, umbellate-racemose or shortly racemose, 1- to many-flowered; flowers opening after leaf emergence. Calyx usually small or not well-developed, 5-lobed; corolla small to large, funnelform to campanulate, tubular-campanulate or salver-shaped, only rarely actinomorphic, white, red, yellow or purple, flecked within; stamens (5–)10(–27). Ovary 5–6(–12)-locular; style declinate to deflexed. Capsule oblong or ovoid, densely scaly, valves subwoody, deflexed on splitting. Seeds many, sometimes with appendages at both ends.

About 500 species: Asia, Europe, North America, two species in Australia; 184 species (113 endemic) in China.

- 1a. Capsules with rather thin valves that twist after dehiscence; placenta generally free from central axis of capsule; seeds with tail-like appendages at both ends ..... 3. *R.* sect. *Vireya*
- 1b. Capsules with hard or woody valves; placenta remaining joined to central axis of capsule; seeds with finned wings.

- 2a. Stamens (5–)10(–27), usually exerted from corolla tube; corolla often large, funnelform, campanulate or tubular; scales with margin entire, rarely crenulate ..... 1. *R.* sect. *Rhododendron*
- 2b. Stamens 5–8, rarely 10, included within corolla tube; corolla often small, salver-shaped; scales with margin lacerate ..... 2. *R.* sect. *Pogonanthum*

**1. Rhododendron sect. Rhododendron**

杜鹃组 du juan zu

Shrubs, sometimes prostrate or cushion-forming, or small trees, usually evergreen, seldom deciduous, sometimes epiphytic. Leaves small to large; leaf blade margin usually entire, sometimes crenulate or revolute; abaxial surface scaly, sometimes also uniformly woolly, or pubescent or strap-shaped-setose along main veins. Inflorescence terminal, 1–28-flowered, or 2- or 3-flowered and axillary, usually umbellate-racemose, shortly racemose or capitate; flowers small to large. Calyx generally short, lobes leaflike or absent, rarely well-developed; corolla funnelform, to campanulate or tubular-campanulate. Stamens (4–)5–10(–25); filaments mostly pubescent towards base, rarely glabrous; ovary 5(–12)-locular, always scaly, sometimes also hairy; style long, slender, straight, curved, or sharply deflexed, glabrous or with scales or shortly pilose at base. Capsule ovoid to cylindric, valves woody, 2–23(–70) mm, scaly or not, sometimes pubescent. Seeds wingless or with a finlike wing.

About 170 species: mostly in Asia, especially from the E Himalayas to SW China, a few species in Europe and North America; 153 species (92 endemic) in China.

- 1a. Style short, thick, distinctly curved.
  - 2a. Stamens 12–16; corolla with woolly hairs in the throat ..... 15. *R.* subsect. *Camelliiflora*
  - 2b. Stamens (8–)10; corolla glabrous inside.
    - 3a. Scales strongly dimorphic, the larger dark brown, the smaller golden ..... 16. *R.* subsect. *Glaucina*
    - 3b. Scales on abaxial leaf surface monomorphic.
      - 4a. Pedicels shorter than corolla; corolla usually yellow, rarely white or pink ..... 14. *R.* subsect. *Boothia*
      - 4b. Pedicels distinctly longer than corolla.
        - 5a. Inflorescences corymbose, 1–3(–5)-flowered; leaves 0.4–2.6(–4) cm.
          - 6a. Corolla fleshy, crimson or purple, with scales outside; abaxial leaf surface with distant scales ..... 17. *R.* subsect. *Campylogyna*
          - 6b. Corolla thinner, variable in color, with dense scales outside; abaxial leaf surface with dense scales ..... 19. *R.* subsect. *Lepidota*
        - 5b. Inflorescences racemose, 4–10(–18)-flowered; leaves (2–)4–5 cm.
          - 7a. Scales entire, small, distant on abaxial surface of leaves; corolla campanulate ..... 18. *R.* subsect. *Genestieriana*
          - 7b. Scales crenulate, overlapping on abaxial surface of leaves; corolla rotate ..... 20. *R.* subsect. *Baileya*
- 1b. Style slender and straight.
  - 8a. Leaf blade abaxially woolly, hairs obscuring small golden scales ..... 1. *R.* subsect. *Edgeworthia*
  - 8b. Leaf blade abaxially without hairs, or rarely with hairs that do not obscure the scales.
    - 9a. Style with scales, at least at base, sometimes up to tip, rarely without scales; calyx usually conspicuously lobed, occasionally with underdeveloped lobes, then with margin ciliate.
      - 10a. Corolla (3–)5–7(–13.5) cm, often white or pink, rarely yellow ..... 2. *R.* subsect. *Maddenia*
      - 10b. Corolla 1.5–3 cm, yellow, white, pink or dark purple ..... 12. *R.* subsect. *Tephropepla*
    - 9b. Style entirely without scales; calyx lobes inconspicuous, rarely more than 4 mm.
      - 11a. Inflorescences racemose; corolla tubular or campanulate.
        - 12a. Corolla usually pendulous, 2–3.8 cm, often brightly colored, never white, outer surface not lepidote ..... 11. *R.* subsect. *Cinnabarina*
        - 12b. Corolla not pendent, 0.4–1.2 cm, white or yellow, outer surface lepidote ..... 13. *R.* subsect. *Micrantha*
      - 11b. Inflorescences corymbose; corolla funnelform or broadly campanulate, rarely tubular-campanulate.
        - 13a. Corolla thin or fleshy, tubular or narrowly campanulate, lobes short, straight or spreading, though not markedly so.
          - 14a. Inflorescences 1–3-flowered; flowers erect; corolla thin, often yellow, outer surface scaly ..... 4. *R.* subsect. *Monantha*
          - 14b. Inflorescences 2–6(–8)-flowered; flowers usually pendulous; corolla fleshy, various in color, sometimes yellow, outer surface not scaly ..... 11. *R.* subsect. *Cinnabarina*
      - 13b. Corolla thin, funnelform or rotate, lobes spreading.
        - 15a. Low to tall shrubs, rarely small trees, leaves large, (0.9–)1.3–12 × (0.3–)0.8–3.5(–4) cm.
          - 16a. Inflorescences mostly 5–7(–10)-flowered; corolla always scaly outside ..... 6. *R.* subsect. *Helirolepida*

- 16b. Inflorescences mostly 1–3-flowered, sometimes with 2 or 3 lateral buds below terminal buds; corolla with or without scales outside.
- 17a. Small shrubs, usually epiphytic; calyx well-developed, lobes red or rosy-purple, rarely green; young shoots usually setose; corolla open-campanulate ..... 3. *R.* subsect. *Moupinensia*
- 17b. Medium to tall shrubs, rarely small trees, terrestrial; calyx rim-like or shortly lobed; young shoots usually glabrous; corolla broadly funnellform ..... 5. *R.* subsect. *Triflora*
- 15b. Low to dwarf shrubs; leaves small to very small, 0.3–4(–7) × 0.15–1.7(–2.8) cm.
- 18a. Pedicels 1–5(–15)mm; corolla usually glabrous outside (puberulous in *R. dasypetalum*).
- 19a. Leaf margin entire; scales on abaxial surface flat, with relatively broad rims ..... 7. *R.* subsect. *Lapponica*
- 19b. Leaf margin crenulate; scales on abaxial surface vesicular ..... 9. *R.* subsect. *Fragariiflora*
- 18b. Pedicels (7–)15–30 mm; corolla pubescent outside.
- 20a. Abaxial leaf surface with scales dense and overlapping, margin crenulate ..... 8. *R.* subsect. *Saluenensia*
- 20b. Abaxial leaf surface with scales sparser, 0.5–6 times their own diameter apart, margin entire ..... 10. *R.* subsect. *Uniflora*

**1. *Rhododendron* subsect. *Edgeworthia* (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 532. 1949.**

泡泡叶杜鹃亚组 pao pao ye du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Edgeworthia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 228. 1930 [*“Edgeworthii”*].

Shrubs, 0.3–1.3(–5.6) m tall, often epiphytic; young shoots with scales golden, small, densely woolly. Leaf blade leathery; abaxial surface densely woolly, scales very small, brown; adaxial surface often bullate, sometimes sparsely pubescent. Inflorescence terminal, 1–3-flowered. Pedicel densely woolly; calyx large, often red or tinged red, 5–17 mm, 5-lobed; corolla funnel-campanulate or campanulate, usually fragrant, white, often flushed pink, or yellow; outer surface scaly; stamens 10; ovary 5-locular, densely woolly; style straight or sharply deflexed. Capsule 7–22 mm, scaly, densely woolly. Seeds winged and finned.

About three species: Bhutan, China, India, Myanmar, Nepal, Sikkim; three species in China.

- 1a. Style long, declinate; corolla 3.4–7.6 cm; calyx 11–19 mm; flowers fragrant ..... 1. *R. edgeworthii*
- 1b. Style short, sharply bent; corolla 1.5–2.5 cm; calyx 5–9 mm; flowers not fragrant.
- 2a. Corolla yellow; calyx pale green; adaxial leaf surface bullate ..... 3. *R. seingkuense*
- 2b. Corolla white, white flushed pink, rarely pale yellow; calyx red or tinged red; adaxial leaf surface not bullate ..... 2. *R. pendulum*

**1. *Rhododendron edgeworthii*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 21. 1851.

泡泡叶杜鹃 pao pao ye du juan

*Rhododendron bullatum* Franchet.

Shrubs, evergreen, often epiphytic, (0.3–)1(–5.6) m tall; indumentum dark orange to pale beige-brown. Petiole 5–25 mm; leaf blade leathery, ovate-elliptic, oblong or oblong-lanceolate, 4–16 × 2–6 cm; base rounded; apex acuminate or shortly acuminate; abaxial surface densely brown or fawn, woolly, scales dense, very small, rather equal, pale brown; adaxial surface strongly bullate, glabrous. Inflorescence 1–3-flowered. Flowers fragrant. Pedicel 1–2 cm, densely woolly; calyx red or tinged red, deeply 5-lobed; lobes 11–17 mm, oblong, ovate or rounded, unequal, persisting to enclose mature capsule, scales present on margin and abaxially, also densely woolly; corolla funnellform-campanulate, white, sometimes flushed pink and/or with a yellow blotch at base, 3.4–7.5 cm; tube 25–35 mm; outer surface scaly; inner surface glabrous; stamens 10, unequal, filaments densely pilose below; ovary densely woolly, sparsely scaly; style straight, ca. as long as corolla,

base scaly and woolly. Capsule cylindrical-ovate or globose, 10–22 mm, scaly, densely woolly. Fl. Apr–Jun, fr. Nov.

Dense forests, cliffs, rocks, often epiphytic; 2000–4000 m. SW Sichuan, SE Xizang, C and NW Yunnan [Bhutan, N India, Myanmar, Sikkim].

**2. *Rhododendron pendulum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 2: t. 13. 1851.

凸叶杜鹃 tu ye du juan

Straggling shrubs, evergreen, epiphytic, 0.3–1.3 m tall; indumentum whitish to beige. Petiole 4–8 mm, densely woolly; leaf blade oblong or oblong-elliptic, 2–5 × 1–2.5 cm; margin slightly revolute; apex obtuse or rounded; abaxial surface densely brown or fawn-woolly, scales ca. 0.5 × their own diameter apart, small, brown; adaxial surface smooth, shiny, scales and hairs absent. Inflorescence (1–)2- or 3-flowered. Flowers not fragrant. Pedicel 0.6–1.6 cm, densely woolly; calyx red or tinged red, lobes 5–9 mm, oblong or oblong-obovate, unequal, persisting to enclose mature capsule, sparsely reddish scaly, woolly, margin long ciliate; corolla funnellform-campanulate, white, white tinged pink, or rarely pale yellow, 1.5–2.2

cm; tube 7–10 mm; outer surface scaly; stamens 10, filaments pilose below; ovary densely woolly, scaly; style sharply deflexed, shorter than stamens, usually with a few hairs and scales at base. Capsule ovate or cylindrical-ovate, 7–10 mm, densely woolly. Fl. Apr–Jun, fr. Jul–Oct.

Dense forests, cliffs, rocks, often epiphytic; 2200–3700 m. S Xizang [Bhutan, Nepal, Sikkim].

**3. Rhododendron seingkuense** Kingdon Ward ex Hutchinson in J. B. Stevenson, Sp. Rhodod. 234. 1930.

黄花泡泡叶杜鹃 huang hua pao pao ye du juan

Prostrate or upright shrubs, often epiphytic, 0.3–0.9 m tall. Petiole 4–13 mm, densely woolly; leaf blade ovate, ovate-lanceolate, oblong-lanceolate or oblong-elliptic, 3–8 × 1.5–4 cm;

**2. Rhododendron** subsect. **Maddenia** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 533. 1949.

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*Rhododendron* ser. *Maddenia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 447. 1930 [*“Maddenii”*].

Shrubs or small trees, 0.3–4(–8) m tall; epiphytic or terrestrial; young shoots with scales often brown, otherwise glabrous, hispid or villous. Leaf blade leathery; adaxial surface scales dense, unequal, otherwise often glabrous except for midrib; adaxial surface often glabrous, sometimes scaly and/or hairy. Inflorescence terminal, a broad and large umbel or short raceme, 1–5(–11)-flowered. Calyx developed or not, 1–30 mm, 5-lobed, ciliate or not; corolla tubular-campanulate to funnelform, white or yellow, sometimes tinged pink, rarely pale purple or red, outer surface usually scaly, hairy in tube; stamens (9–)10 (15–25 in *R. maddenii*); ovary 5- or 6-locular (10–12-locular in *R. maddenii*); style rarely shorter than stamens, slightly curved, lower part scaly, rarely glabrous. Capsule often large, ovoid to cylindrical, 5–50(–70) mm, densely scaly. Seed winged, with flipperlike structure.

About 45 species: Bhutan, China, India, Laos, Myanmar, Nepal, Sikkim, Thailand, Vietnam; 34 species (18 endemic) in China.

- 1a. Stamens 15–25(–27); ovary 10–12-locular; petioles adaxially grooved ..... 4. *R. maddenii*
- 1b. Stamens (8–)10(–14); ovary 5–7-locular.
  - 2a. Calyx margin not or only rarely hairy, lobes large, 0.8–3 cm; petiole rounded adaxially (concave in *R. megacalyx*, then with pedicels and calyx whitish pruinose).
  - 3a. Pedicels and calyx not scaly, whitish pruinose; calyx lobed to the middle, lobes 2–3 cm; capsule shorter than persistent calyx; midrib and petiole concave adaxially ..... 5. *R. megacalyx*
  - 3b. Pedicels and calyx scaly; calyx lobed to the base; capsule longer than persistent calyx; midrib and petiole raised or flat adaxially.
    - 4a. Leaf blade 11–26 × (3.5–)6–12 cm; corolla 9–13.5 cm.
      - 5a. Leaf blade with veins flat on adaxial surface ..... 8. *R. excellens*
      - 5b. Leaf blade with veins strongly impressed on adaxial surface.
        - 6a. Pedicels and calyx glabrous; capsule 3–3.5 cm; abaxial leaf surface with dense small scales and scattered large scales ..... 6. *R. nuttallii*
        - 6b. Pedicels and calyx densely pubescent; capsule 5–7 cm; abaxial leaf surface with more large scales ... 7. *R. sinonuttallii*
    - 4b. Leaf blade less than 16 × 6 cm; corolla 3.5–10 cm.
      - 7a. Young shoots sparsely hispid; pedicels and calyx pubescent ..... 9. *R. dalhousieae*
      - 7b. Young shoots, pedicels and calyx with scales only.
        - 8a. Leaf blade 2–5 × (0.5–)1.5–2.5 cm; corolla 3.5–6 cm; petiole 3–5 mm (not recorded for *R. mianningense*).
          - 9a. Calyx 15–18 mm; corolla ca. 3.5 cm, pale yellow, outer surface not scaly; abaxial leaf surface with scales overlapping or only slightly apart; petiole glabrous ..... 10. *R. mianningense*
          - 9b. Calyx 7–8 mm; corolla 4–6.2 cm, white, outer surface scaly; abaxial leaf surface with scales 1–2 × their diameter apart; petiole hispid ..... 11. *R. kiangsiense*
    - 8b. Leaf blade 6–16 × (1.5–)2–6 cm; corolla 6–9(–10) cm; petiole 10–30 mm.
      - 10a. Stamens 5; corolla lobes denticulate; calyx not scaly outside ..... 13. *R. chunienii*
      - 10b. Stamens 10; corolla lobes entire; calyx scaly outside.
        - 11a. Calyx lobes 15–20 mm, leaflike; pedicel ca. 20 mm; abaxial leaf surface with scales uniform in size ..... 12. *R. taggianum*
        - 11b. Calyx lobes 1–10(–14) mm; pedicel 10–15 mm; abaxial leaf surface with scales unequal in size.

base rounded or obtuse; apex acuminate, acute or obtuse; abaxial surface densely brown-woolly, scales distant, very small; adaxial surface bullate, scaly, sparsely pubescent. Inflorescence 1- or 2-flowered. Pedicel 1–2 cm, densely woolly; calyx pale green, lobes 5–9 mm, rounded, persisting to enclose mature capsule, scales sometimes present on margin and abaxially, densely woolly; corolla shortly campanulate, yellow, 1.5–2.5 cm; outer surface scaly, glabrescent; stamens 10, slightly shorter than corolla; ovary densely woolly, scaly; style short, sharply deflexed, usually without scales or hairs. Capsule ellipsoid, 8–14 mm, scaly, densely brown-woolly. Fl. Apr–May, fr. Aug–Nov.

Dense forests, epiphytic on trees, cliffs, shady rocks; (1800–)2000–2500(–3500) m. SE Xizang, NW Yunnan [N Myanmar].

- 12a. Calyx 1–5 mm; adaxial leaf surface with scales ..... 14. *R. lindleyi*  
 12b. Calyx 8–10(–14) mm; adaxial leaf surface without scales ..... 15. *R. liliiflorum*
- 2b. Calyx margin hairy, rarely glabrous, small or with obvious lobes; petiole grooved adaxially.
- 13a. Calyx lobes 6–12 mm; young shoots hispid, rarely glabrous; petiole, and usually also leaf blade, hairy.
- 14a. Leaf blade without hairs on both surfaces, sometimes hairy on margin; petioles glabrous or hispid; styles glabrous or with a few scales at base.
- 15a. Leaf margin glabrous; abaxial surface with scales contiguous; corolla scaly outside; calyx margin glabrous ..... 18. *R. changii*
- 15b. Leaf margin hairy, abaxial surface with scales sparse, 3–6 × their diameter apart; corolla not scaly outside; calyx margin densely hairy.
- 16a. Leaf margin hispid, slightly dentate; calyx lobes ovate-lanceolate; corolla yellow ..... 16. *R. fletcherianum*
- 16b. Leaf margin villous, hairs caducous, entire; calyx lobes oblong; corolla white, or tinged pale red ..... 17. *R. yungchangense*
- 14b. Leaf blade hispid or villous, at least along central vein; petioles hispid or villous; styles glabrous to densely scaly.
- 17a. Young shoots, leaves and pedicels rusty brown-villous; leaf margin glabrous; calyx lobes linear, 6–12 × ca. 2 mm wide ..... 19. *R. linearilobum*
- 17b. Young shoots, leaves and pedicels hispid, or petioles glabrous; leaf margin often densely hispid; calyx lobes ovate, broadly ovate, or oblong-ovate.
- 18a. Corolla white or tinged with pale red, not scaly outside.
- 19a. Leaf apex obtuse to rounded, sometimes emarginate, pubescent below; scales on abaxial leaf surface slightly more than their own diameter apart (see also 21. *R. yizhangense* and 22. *R. yaogangxianense*) ..... 20. *R. levinei*
- 19b. Leaf apex acute to acuminate, hispid along central vein below; scales on abaxial leaf surface 2–3 × their diameter apart ..... 23. *R. ciliatum*
- 18b. Corolla pale or fresh yellow, scaly outside.
- 20a. Young shoots not hispid; pedicels glabrous; corolla pale yellow, glabrous; leaf margin flat or slightly revolute, villous or glabrous near the base ..... 24. *R. amandum*
- 20b. Young shoots densely brownish hispid; pedicels sometimes strap-shaped-setose; corolla fresh yellow, densely pubescent; leaf margin revolute, densely strap-shaped-setose ..... 25. *R. valentinianum*
- 13b. Calyx lobes obsolete or with lobes 2–6 mm; young shoots, leaf blade or petiole hispid or glabrous.
- 21a. Inflorescence 1(–2)-flowered.
- 22a. Young shoots densely brownish scaly; leaf margin densely villous, abaxial surface pale green, scales 1–2 × their own diameter apart ..... 26. *R. ciliipes*
- 22b. Young shoots and leaf margin sparsely hispid, abaxial surface dark brown, scales less than 1 × their own diameter apart ..... 27. *R. pseudociliipes*
- 21b. Inflorescence 2–5-flowered.
- 23a. Abaxial leaf surface densely scaly; scales unequal, generally less than (rarely 1 ×) their own diameter apart.
- 24a. Abaxial leaf surface brown when dry; blade rhombic-elliptic or rhombic-lanceolate ..... 28. *R. rhombifolium*
- 24b. Abaxial leaf surface grayish green or grayish white when dry; blade elliptic or oblong-elliptic, ovate, obovate or elliptic-lanceolate.
- 25a. Corolla 3.5–4.3 cm, yellow, 5-lobed to the middle ..... 29. *R. leptocladon*
- 25b. Corolla 5–7 cm, white tinged with pale red, 5-lobed to upper 1/3.
- 26a. Calyx obsolete, margin not ciliate; scales on abaxial leaf surface unequal, to 1 × their own diameter apart ..... 30. *R. dendricola*
- 26b. Calyx undulate, 5-lobed, margin long ciliate hairs; scales on abaxial leaf surface of leaves ± uniform, less than their own diameter apart to almost contiguous.
- 27a. Leaf blade ovate, widest below the middle; pedicel 1–2 cm ..... 31. *R. roseatum*
- 27b. Leaf blade elliptic, oblong-elliptic, elliptic-lanceolate or obovate, widest at or above the middle; pedicel 0.5–1 cm ..... 32. *R. pachypodum*
- 23b. Abaxial surface of leaves sparsely scaly; scales unequal, (0.5–)1.5–5 × their own diameter apart.
- 28a. Shoots and petioles densely hispid when young; corolla not scaly, only pubescent outside ..... 33. *R. ciliicalyx*
- 28b. Shoots and petioles glabrous or sometimes sparsely hispid when young; corolla ± scaly outside, sometimes also pubescent.
- 29a. Leaf blade oblong-lanceolate or oblong-elliptic; apex acuminate or acute; style longer than corolla.
- 30a. Pedicel densely pubescent; calyx margin glabrous; corolla 4–5 cm, white, with or without yellow spots inside ..... 34. *R. taronense*
- 30b. Pedicel glabrous; calyx margin sometimes long ciliate; corolla 6–7 cm, white or creamy

- yellow, with green spots inside ..... 35. *R. walongense*
- 29b. Leaf blade oblong-obovate, oblong-elliptic or obovate; apex rounded to acute or apiculate; style as long as corolla.
  - 31a. Leaf blade 3.4–4.5 cm, hispid; pedicel 0.6–0.8 cm; corolla glabrous outside; capsule ca. 0.9 cm ..... 36. *R. wumingense*
  - 31b. Leaf blade 4–12 cm, margin glabrous; pedicel 0.8–1.8 cm; corolla pubescent or shortly hairy outside; capsule 1.2–2 cm.
    - 32a. Leaf blade 7–12 cm; abaxial surface densely or sparsely scaly, adaxial surface sparsely scaly; corolla ca. 7 cm; scales unequal ..... 30. *R. dendricola*
    - 32b. Leaf blade 4–8 cm; abaxial surface sparsely scaly, adaxial surface without scales; corolla 4–6 cm; scales nearly uniform in size ..... 37. *R. scopulorum*

**4. *Rhododendron maddenii*** J. D. Hooker, *Rhododendr. Sik-kim-Himalaya* 2: t. 18. 1851 [“*maddenii*”].

隐脉杜鹃 yin mai du juan

Shrubs or small trees, 3–6 m tall; branches many; young shoots brownish scaly. Petiole grooved, 5–10 mm; leaf blade leathery, lanceolate, oblong-oblancheolate, or elliptic, 5–15(–18) × 2–8 cm; base cuneate; apex acute or obtuse; abaxial surface scales dense, reddish brown; adaxial surface scales present in young leaves, glabrescent. Inflorescence 3–5-flowered. Flowers fragrant. Pedicel 1.3–1.5 cm; calyx lobes 3–5 mm, orbicular or oblong, scaly; corolla funnellform, white, (3.5–)6–8.5(–10) cm; tube (20–)30–50(–60) mm; outer surface scaly; stamens 15–25, filaments glabrous or pubescent; ovary 10–12-locular; style exerted, upper 1/3 with scales; stigma large, discoid. Capsule ovoid or ellipsoid, 10–35 × 10–15 mm. Fr. Aug.

Forests, *Tsuga-Rhododendron* thickets, scrub, river valleys; (1500–)2600–3200 m. S Xizang, N and W Yunnan [Bhutan, N India, NE Myanmar, Sikkim, Thailand, N Vietnam].

- 1a. Leaf blade 2–4 cm wide; filaments usually glabrous; capsule ovoid, 1–2 cm ..... 4a. subsp. *maddenii*
- 1b. Leaf blade (4–)5.5–8 cm wide; filaments often pubescent; capsule ellipsoid, 2–3.5 cm ..... 4b. subsp. *crassum*

**4a. *Rhododendron maddenii* subsp. *maddenii***

隐脉杜鹃(原亚种) yin mai du juan (yuan ya zhong)

*Rhododendron brachysiphon* I. B. Balfour ex Hutchinson; *R. brevitubum* I. B. Balfour & R. E. Cooper (1917), not J. J. Smith (1914); *R. calophyllum* Nuttall; *R. jenkinsii* Nuttall; *R. macranthum* Griffith (1848), not (Bunge) D. Don (1834); *R. maddenii* var. *longiflorum* W. Watson; *R. polyandrum* Hutchinson.

Leaf blade lanceolate, oblanceolate, or elliptic, 2–4 cm wide. Filaments usually glabrous. Capsule ovoid, 10–20 × ca. 10 mm.

Forests, scrub, river valleys; ca. 2600 m. S Xizang [Bhutan, NE India, Sikkim].

**4b. *Rhododendron maddenii* subsp. *crassum*** (Franchet) Cullen, *Notes Roy. Bot. Gard. Edinburgh* 36: 107. 1978.

滇隐脉杜鹃 dian yin mai du juan

*Rhododendron crassum* Franchet, *Bull. Soc. Bot. France* 34: 282. 1887; *R. chapaense* Dop; *R. odoriferum* Hutchinson.

Leaf blade elliptic to elliptic-lanceolate, (4–)5.5–8 cm wide. Filaments often pubescent. Capsule ellipsoid, 20–35 × 12–15 mm.

Dry secondary forests, *Tsuga-Rhododendron* thickets, shrubby slopes; (1500–)2600–3200 m. S Xizang, N and W Yunnan [N India (Manipur), NE Myanmar, Thailand, N Vietnam].

**5. *Rhododendron megacalyx*** I. B. Balfour & Kingdon Ward, *Notes Roy. Bot. Gard. Edinburgh* 9: 246. 1916.

大萼杜鹃 da e du juan

Shrubs or small trees, 1.5–3 m tall; old branches glabrous; young shoots stout, brownish purple, cylindric, densely scaly. Petiole shallowly grooved, 10–30 mm; leaf blade leathery, obovate-elliptic or elliptic, 10–17 × 2.5–7 cm; base narrowed; apex rounded, apiculate, sometimes slightly concave; abaxial surface pale white, scales dense, reddish brown, appressed; adaxial surface dark green, scales dense on young leaves, glabrescent. Inflorescence terminal, shortly racemose, 3–5-flowered. Flowers fragrant. Pedicel stout, 2.5–3 cm, glabrous; calyx campanulate, 5-lobed to middle, 20–30 mm, enlarging and persisting to enclose mature capsule, scales absent; corolla broadly funnellform, white, 6.5–9.5 cm; tube 50–60 mm; outer surface scaly on lobes, lobes suborbicular, ca. 3 cm wide; stamens 10, unequal, slightly shorter than corolla tube; filaments slender, lower part pubescent; ovary 5-locular, densely scaly; style slightly exerted; base sparsely scaly; stigma large, discoid. Capsule cylindric, ca. 20 mm. Fl. Apr–Jun.

Evergreen broad-leaved forests, *Tsuga* forests; 2200–3000 m. SE Xizang, NW Yunnan [NE India, NE Myanmar].

**6. *Rhododendron nuttallii*** Booth ex Nuttall, Hooker’s *J. Bot. Kew Gard. Misc.* 5: 355. 1853 [“*nuttalii*”].

木兰杜鹃 mu lan du juan

Small trees, to 10 m tall, or epiphytic, with thick roots, to 4 m tall; old branches glabrous; young shoots dark, densely scaly. Petiole convex, ca. 20 mm, sparsely scaly; leaf blade leathery, elliptic, 12–20 × 6–10 cm; base rounded; apex rounded; abaxial surface scales dense, small, unequal, brownish red; adaxial surface scales dense when young, glabrescent; midrib raised on both surfaces; lateral veins 12–16-paired. Inflorescence terminal, 5(–11)-flowered. Pedicel pendulous, ca. 3 cm; calyx lobes 15–25 mm, oblong-elliptic; apex rounded, scales present, dense; corolla white tinged with yellow on tube and with lobes tinged pale red, (7.5–)10(–12.5) cm; tube (45–)70–80 mm, outer surface scaly at base; lobes rounded, shorter than tube; stamens 10,

as long as corolla tube, filaments pubescent, anthers reddish brown, ca. 8 mm; ovary 5-locular; style curved upwards; base densely scaly; stigma large, discoid. Capsule 30–35 mm, scaly, lobes keeled. Fl. Apr–May.

*Rhododendron* thickets, epiphytic or terrestrial; ca. 2400 m. SE Xizang [N India, N Vietnam].

**7. *Rhododendron sinonuttallii*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 60. 1920.

华木兰杜鹃 *hua mu lan du juan*

Shrubs, 1–3(–5) m tall; branches stout, densely scaly. Petiole stout, not grooved, 15–30 mm, densely scaly; leaf blade oblong-elliptic, 14–26 × 4.5–12 cm, narrowing toward both ends; apex acute; abaxial surface dirty white, scales dense, small, unequal, brownish red; adaxial surface dark green, scales sparse or absent; veins conspicuously wrinkled, raised abaxially, concave adaxially. Inflorescence terminal, subumbellate, 3–6-flowered; rachis enlarged, 15–20 mm; flower bud scales falling off early. Flowers fragrant. Pedicel stout, ca. 2.5 cm, densely scaly, pubescent; calyx pale red, deeply 5-lobed; lobes 20–28 mm, oblong, persistent in fruit, densely scaly, gray-pubescent; corolla broadly campanulate, pale yellowish white, lower tube yellow, 1–1.4 cm, outer surface densely scaly; lobes rounded, shorter than tube; stamens 10, as long as corolla tube, filaments lower half white pubescent, anthers ca. 12 mm; ovary 5-locular, densely scaly; style stout, longer than stamens, basal part densely scaly; stigma discoid, 6–9 mm in diam. Capsule cylindrical, lobes keeled, 50–70 × ca. 24 mm. Fl. May–Jun.

• *Pinus* forests, cliffs in forests, thickets, epiphytic or terrestrial; 1200–2800 m. SE Xizang, NW Yunnan.

**8. *Rhododendron excellens*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 113. 1910.

大喇叭杜鹃 *da la ba du juan*

Shrubs, sometimes small trees, 1.5–3(–5) m tall; young branches brownish purple, cylindrical, densely dark brown scaly. Petiole not grooved, 15–30 mm, densely scaly; leaf blade leathery, oblong-elliptic, 11–19 × 3.5–8 cm; base rounded, sometimes slightly cordate to auriculate; apex acuminate; abaxial surface dirty white; adaxial surface sparsely scaly when young, glabrescent; midrib raised abaxially, concave adaxially. Inflorescence terminal, umbellate, 3–4-flowered; bud scales falling off early. Flowers fragrant. Pedicel stout, 1.2–2 cm, densely scaly; calyx lobes ovate, 8–12 mm, persistent in fruit, 1.5–1.8 cm, scaly at base; corolla broadly campanulate, white, 9–11 cm, outer surface scaly; lobes rounded; stamens 10(or 11 or 15), shorter than corolla tube; filaments pubescent below; anthers ca. 8 mm; ovary 5-locular, densely scaly; style slightly exerted from corolla tube, basal half scaly; stigma discoid. Capsule cylindrical, lobes keeled, 45–55 mm. Fl. May.

Evergreen broad-leaved forests or thickets; 1100–2400 m. S Guizhou, SE Yunnan [N Vietnam].

*Rhododendron excellens* was originally described as having 15 stamens, which does not agree with this description. One solution would be to describe those plants with 10(–11) stamens as a new taxon, which could be called “var. *decandrum*”. This would account for the vast ma-

jority of the specimens available. It is possible that the type of *R. excellens* was a chance hybrid between “var. *decandrum*” and *R. maddenii* subsp. *crassum*. In Vietnam, where the distribution of “var. *decandrum*” overlaps with that of *R. nuttallii* (which it closely resembles), there appear to be intermediates between the two taxa.

**9. *Rhododendron dalhousieae*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 1: t. 1, 2. 1849 [“*dalhousiae*”].

长药杜鹃 *chang yao du juan*

Shrubs, often epiphytic, ca. 2 m tall; young branches scaly, otherwise glabrous or sparsely ciliate. Petiole ca. 15 mm, scaly; leaf blade thinly leathery, oblong, oblong-obovate, or oblanceolate, 9–11 × 3–4 cm; base cuneate; apex rounded; abaxial surface pale whitish green, scales glandular, reddish brown; adaxial surface glabrous; midrib raised on both surfaces. Inflorescence 2- or 3-flowered. Flowers fragrant. Pedicel ca. 1 cm, densely scaly, white pubescent; calyx lobes ca. 11 mm, oblong-elliptic, persistent in fruit, scaly at base, abaxially pubescent around the middle; corolla pale yellow, sometimes with pale red stripes, 8–10.5 cm; tube 60–75 mm, outer surface not scaly, or with a few scales only; stamens 10, filaments hairy, anthers ca. 12 mm, brown; ovary 5-locular, densely scaly; style sparsely scaly below. Capsule cylindrical-spindle-shaped, ca. 45 mm, lobes keeled. Fl. Jun.

Forests, secondary mixed forest margins, hillsides, crevices on slopes, epiphytic or terrestrial; 1500–2600 m. S Xizang [Bangladesh, Bhutan, India, E Nepal, Sikkim].

- 1a. Corolla without 5 longitudinal red lines ..... 9a. var. *dalhousieae*
- 1b. Corolla with 5 five longitudinal red lines ..... 9b. var. *rhabdotum*

**9a. *Rhododendron dalhousieae* var. *dalhousieae***

长药杜鹃(原变种) *chang yao du juan* (*yuan bian zhong*)

Corolla without any longitudinal red lines.

Secondary mixed forest margins, epiphytic on tree trunks, crevices on slopes; 2000–2500 m. S Xizang [Bangladesh, Bhutan, India, E Nepal, Sikkim].

**9b. *Rhododendron dalhousieae* var. *rhabdotum*** (I. B. Balfour & R. E. Cooper) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 107. 1978.

红线长药杜鹃 *hong xian chang yao du juan*

*Rhododendron rhabdotum* I. B. Balfour & R. E. Cooper, Notes Roy. Bot. Gard. Edinburgh 10: 141. 1917.

Corolla with 5 longitudinal red lines.

Forests, hillsides, epiphytic or terrestrial; 1500–2600 m. S Xizang [Bhutan, NE India].

**10. *Rhododendron mianningense*** Z. J. Zhao, Bull. Bot. Res., Harbin 7(3): 59. 1987.

冕宁杜鹃 *mian ning du juan*

Shrubs, ca. 2 m tall; bark yellow, peeling; young branches densely purple-scaly. Petiole densely rusty-red scaly; leaf blade leathery, elliptic, 2–3.5 × 0.5–1.5 cm; base cuneate or widely cuneate; apex rounded or mucronate; abaxial surface yellowish

green, scales ± overlapping; adaxial surface deep green, sparsely scaly. Inflorescence terminal, cymose, 2-flowered. Pedicel stout, ca. 0.5 cm, scaly; calyx pale yellow, 5-lobed, 15–18 mm; lobes membranous, 13–15 × ca. 5 mm, sparsely scaly; corolla funnellform, pale yellow, ca. 3.5 cm; tube ca. 25 mm, outer surface glabrous; stamens 10, unequal, 2.5–2.8 cm; filaments pale yellow-pubescent in lower half, base glabrous; style 2.5–3 cm, lower part sparsely pubescent. Capsule not known.

- About 3500 m. S Sichuan (Mianning).

**11. *Rhododendron kiangsiense*** W. P. Fang, Acta Phytotax. Sin. 7: 192. 1958.

江西杜鹃 jiang xi du juan

Shrubs, ca. 1 m tall; bark gray, grayish brown or grayish black; young branches green, cylindrical, scaly. Petiole not grooved, 3–5 mm, scaly, sparsely hispid; leaf blade leathery, oblong-elliptic, 4–5 × 2–2.5 cm; base cuneate; margin slightly revolute; apex obtuse to acute, apiculate; abaxial surface gray, scales 1–2 × their own diameter apart; adaxial surface deep green, without scales; lateral veins 8–9-paired, slightly raised on both sides. Inflorescence terminal, cymose, 2-flowered. Pedicel brown, stout, 1–1.4 cm, scaly; calyx 5-lobed; lobes 7–8 mm, ovate, scaly, margin undulate; corolla broadly funnellform, white, 4–6.2 × ca. 4 cm, outer surface scaly, lobes 5, rounded, ca. 2.4 cm in diam., margin undulate; stamens 10, ca. 2.5 cm; filaments filiform, flat at base, lower 1/3 white-pubescent; anthers ca. 4 mm; ovary ca. 6 mm, densely scaly; style ca. 3.5 cm, scaly at base; stigma large. Capsule not known.

- Slopes; ca. 1100 m. W Jiangxi (Pingxiang).

**12. *Rhododendron taggianum*** Hutchinson in J. B. Stevenson, Sp. Rhodod. 499. 1930.

白喇叭杜鹃 bai la ba du juan

*Rhododendron headfortianum* Hutchinson.

Shrubs, 1.5–4 m tall; young shoots densely dark brown scaly. Petiole not grooved, 10–25 mm, scaly; leaf blade leathery, oblong-lanceolate, 6–15 × 2.5–6 cm; base rounded; apex obtuse, shortly apiculate; abaxial surface dirty white, scales glandular; adaxial surface scaly on central vein; midrib raised on both surfaces. Inflorescence terminal, umbellate, 3-flowered. Pedicel ca. 2 cm, densely scaly; calyx 5-lobed to near base; lobes leaflike, 15–20 mm, broadly elliptic-ovate, scales at least at base, sparse; corolla campanulate, white, 6–9 cm, outer surface scaly at base; stamens 10, as long as corolla tube; filaments pubescent below; anthers ca. 6 mm; ovary 5-locular, densely scaly; style slightly longer than stamens. Capsule erect, lobes keeled, ca. 50 mm, densely glandular-scaly. Fl. Apr–May.

Broad-leaved forests, slopes, often epiphytic; 1800–2300 m. ?SE Xizang, Yunnan [?NE India (Assam), NE Myanmar].

**13. *Rhododendron chunienii*** Chun & W. P. Fang, Acta Phytotax. Sin. 6: 169. 1957.

椿年杜鹃 chun nian du juan

Shrubs, ca. 2 m tall; third-year shoots with flesh-colored bark that often peels, second year shoots brown scaly; young shoots purplish brown. Petiole stout, subcylindrical, not groov-

ed, 20–25 mm, densely scaly; leaf blade leathery, oblong-elliptic, 9–12 × 3–3.5 cm; base rounded; apex rounded, apiculate; abaxial surface yellowish green, scales tiny, golden; adaxial surface not shiny, without scales; midrib flat raised abaxially, flat adaxially; lateral veins 10–14-paired, inconspicuous above and slightly raised below. Inflorescence terminal, cymose, 1–3-flowered. Pedicel stout, 0.1–0.15 cm, densely scaly; calyx lobes leafy, 10–14 mm, elliptic-ovate, persistent in fruit, ca. 14 mm, scales absent; corolla white, 9–10 × 10–12 cm; tube 3–4 cm wide, lobes spreading, margin round-denticulate; stamens 5, unequal, 3.5–4 cm; filaments stellate-pilose below; ovary 5-locular, densely scaly; style longer than stamens, basal 1/3 densely scaly; stigma large, discoid, 5-lobed. Capsule cylindrical, ca. 35 mm, densely brown-scaly.

- Scattered forests; 1300–1400 m. NE Guangxi, Hunan.

**14. *Rhododendron lindleyi*** T. Moore, Gard. Chron. 1864: 364. 1864.

大花杜鹃 da hua du juan

*Rhododendron bhotanicum* C. B. Clarke.

Shrubs, often epiphytic, 1.5–3 m tall; sparsely branched; young shoots scaly. Petiole convex, 15–20 mm, scaly; leaf blade thinly leathery, ovate-lanceolate, or narrowly elliptic, 6–15 × 1.5–5.5 cm; base cuneate or rounded; apex rounded; abaxial surface pale white, scales 2–3 × their own diameter apart, variable in size; adaxial surface deep green, sparsely scaly. Inflorescence terminal, umbellate, 4–6-flowered. Pedicel 1–1.5 cm, densely brownish red scaly; calyx lobes 1–5 mm, oblong, persistent and surrounding base of fruit, scaly at base; corolla broadly tubular-campanulate, white, 7–8 cm, outer surface scaly at base; stamens 10, filaments pubescent below; ovary 5-locular, densely reddish brown scaly; style base scaly. Capsule ca. 50 mm, not keeled. Fl. Apr–May.

Forests, sometimes epiphytic; 1600–2900 m. Xizang [Bangladesh, Bhutan, N India, Myanmar, Nepal, Sikkim].

**15. *Rhododendron liliiflorum*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 102. 1913.

百合花杜鹃 bai he hua du juan

Shrubs or trees, 3(–8) m tall; young shoots scaly, otherwise glabrous. Petiole convex, not grooved, 15–30 mm; leaf blade leathery, oblong, 7–16 × 2–5 cm; base cuneate or rounded; apex rounded; abaxial surface pinkish green, scales 1–3 × their own diameter apart, unequal, reddish brown; adaxial surface dark green, without scales. Inflorescence terminal, cymose, 2- or 3-flowered. Flowers fragrant. Pedicel stout, 1.2–1.6 cm, densely scaly; calyx lobes 8–10 mm, oblong-ovate, persistent in fruit, ca. 1.4 cm, scaly at least at base; corolla tubular-campanulate, white, 8–9 cm; outer surface densely scaly; lobes 5, entire; stamens 10, 4.8–5.7 cm; filaments densely pubescent in lower 1/3; anthers 6–7 mm; ovary 5-locular, densely scaly; style slightly longer than corolla, basal part densely scaly. Capsule 25–45 mm.

- Scattered forests, thickets on slopes. Guangxi, Guizhou, Hunan, SE Yunnan.



**16. *Rhododendron fletcherianum*** Davidian, *Rhododendron Camellia Year Book* 16: 103. 1961.

翅柄杜鹃 chi bing du juan

Shrubs, 0.6–1.2 m tall; young shoots sparsely scaly, hispid. Petiole flat, narrowly winged, 4–6 mm, sparsely scaly, hispid; leaf blade oblong-lanceolate or oblong-obovate, 2.5–5 × 1.2–2.6 cm; base obtuse or cuneate decurrent; apex acute or obtuse, apiculate; abaxial surface scales 3–6 × their own diameter apart, small, pale brown, glabrous on both surfaces; adaxial surface sometimes sparsely scaly; midrib and lateral veins raised abaxially, concave adaxially; lateral veins inconspicuous on both surfaces; veins conspicuously concave adaxially. Inflorescence terminal, cymose, 2–4(–5)-flowered; bractlets linear-spathulate. Pedicel 0.6–1.2 cm, sparsely scaly, densely hispid; calyx green, deeply 5-lobed; lobes 8–12 mm, ovate-lanceolate, scaly at base, persistent in fruit; corolla broadly funnellform, yellow, 3–4.6 cm, nearly glabrous; stamens 10, unequal, long ones as long as corolla, filaments densely pubescent at base; ovary 5-locular, densely scaly and pubescent, at least above; style longer than corolla, glabrous. Capsule 6–9 × 5–7 mm, scaly, hispid. Fl. May–Jun.

• Forests in high mountains, slopes, cliffs; ca. 3400 m. SE Xizang, NW Yunnan.

**17. *Rhododendron yungchangense*** Cullen, *Notes Roy. Bot. Gard. Edinburgh* 36: 123. 1978.

少鳞杜鹃 shao lin du juan

Shrubs, 0.8–1.3 m tall; young shoots thinly hispid. Petiole scaly; leaf blade narrowly elliptic or narrowly obovate, 7–10 × 2.8–3.8 cm; apex obtuse; abaxial surface pale gray green, papillate, scales sparse, golden; adaxial surface deep green, glabrous. Inflorescence (1–)2–4-flowered. Pedicel sparsely scaly; calyx 5-lobed, lobes ca. 7 mm, oblong; corolla funnellform-campanulate, white or pale red, ca. 6 cm, tube ca. 32 mm, glabrous outside; stamens 10; filaments pubescent at base; ovary scaly; style base sparsely scaly. Capsule cylindrical, 12–16 mm, scaly.

• Valley sides, cliffs; 2100–2500 m. W Yunnan.

**18. *Rhododendron changii*** (W. P. Fang) W. P. Fang, *Acta Phytotax. Sin.* 21: 465. 1983.

树枫杜鹃 shu feng du juan

*Rhododendron valentinianum* Forrest ex Hutchinson var. *changii* W. P. Fang, *Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot.* 12: 71. 1939.

Shrubs, 1–1.5 m tall; branches cylindrical; young shoots tinged with purple, thinly hispid. Petiole ca. 3 mm or nearly sessile, scaly, hispid; leaf blade leathery, oblong-elliptic or early oblong, 3–4.5(–5.5) × 2–2.5(–3) cm; apex and base rounded; abaxial surface pale green, scales nearly contiguous; adaxial surface deep green, without scales; lateral veins inconspicuous on both surfaces. Inflorescence terminal, cymose, (2–)3- or 4-flowered. Pedicel 0.5–0.8 cm, scaly, without hairs; calyx lobes ca. 10 mm, oblong-ovate, scaly; corolla funnellform-campanulate, deep yellow, 3.5–4 cm, tube 18–20 mm, outer surface scaly on lobes; lobes ± rounded, 1.5–2 cm; stamens 10, as long

as or slightly shorter than corolla; filaments white-pubescent in lower 2/3; ovary 5-locular, densely scaly; style 4–4.5 cm, glabrous. Capsule cylindrical-ovoid, 12–15 mm.

• Thickets; 1600–2000 m. Chongqing.

*Rhododendron changii* is very close to *R. valentinianum*.

**19. *Rhododendron linearilobum*** R. C. Fang & A. L. Chang, *Acta Bot. Yunnan.* 4: 250. 1982.

线萼杜鹃 xian e du juan

Shrubs, ca. 1 m tall; young shoots scaly, densely rusty-red-villous. Petiole 6–18 mm, scaly, densely rusty-red-villous; leaf blade narrowly obovate, 4–7.5 × 1.5–2.5 cm; base cuneate; apex obtuse, apiculate; abaxial surface scales 1–2 × their own diameter apart, equal in size, brown, sometimes sparsely villous along midrib; adaxial surface without scales, villous along midrib; veins raised abaxially, concave adaxially. Inflorescence terminal, cymose, 2–4-flowered. Pedicel stout, 0.6–1.5 cm, scaly, pubescent; calyx tinged with red, 5-lobed to base; lobes 6–12 × ca. 2 mm, linear, longer than capsule in fruit, sparsely scaly; corolla narrowly funnellform, ca. 4 cm, tube 18–20 mm, outer surface pubescent at base, otherwise glabrous; stamens 10, unequal, shorter than corolla, filaments pubescent at base; ovary 5-locular, densely scaly; style exerted from corolla; base sparsely scaly, pubescent. Capsule ovoid, 5–9 mm. Fl. Mar, fr. Oct–Nov.

• Limestone slopes; ca. 2200 m. Yunnan.

**20. *Rhododendron levinei*** Merrill, *Philipp. J. Sci.* 13: 153. 1918.

南岭杜鹃 nan ling du juan

Shrubs or small trees, 1–4 m tall; young shoots sparsely scaly, hispid. Petiole 5–15 mm, scaly, densely villous; leaf blade leathery, elliptic or elliptic-obovate, 4–8 × 2–4 cm; base broadly cuneate to rounded; apex obtuse to broadly rounded, sometimes emarginate, apiculate; abaxial surface pubescent, scales slightly more than their own diameter apart; adaxial surface sparsely scaly, densely long-hispid, hairs caducous. Inflorescence terminal, cymose, 2–4-flowered. Pedicel 1–2 cm, densely scaly, hispid when young, stout in fruit; calyx deeply 5-lobed; lobes 8–10 mm, long-ovate, sparsely scaly, hispid; corolla broadly funnellform, white, with yellow marks inside, 5–8(–9) cm, outer surface glabrous; stamens 10, unequal, long ones reaching to half way up corolla lobes; filaments pubescent below; ovary densely scaly, pubescent; style densely scaly below. Capsule cylindrical, ca. 20 mm, densely scaly. Fl. Mar–Apr, fr. Sep–Oct.

• Forests, forest margins in mountains, thickets; 1300–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan.

**21. *Rhododendron yizhangense*** Q. X. Liu, *Bull. Bot. Res., Harbin* 8(3): 86. 1988.

宜章杜鹃 yi zhang du juan

Small shrubs, 0.5–1.2 m tall; young shoots sparsely scaly and hispid. Petiole 6–8 mm, scaly, hispid; leaf blade leathery, oblong to oblong-elliptic, 3–5 × 1.2–2.2 cm; base broadly cune-

ate to rounded; apex rounded, mucronate; abaxial surface scales dense, pubescent; adaxial surface sparsely scaly, densely hispid; midrib and lateral veins grooved adaxially. Inflorescence 1- or 2-flowered. Pedicel 0.7–1 cm, densely scaly, hispid when young; calyx deeply 5-lobed, lobes ca. 6 mm, ovate, densely scaly; corolla funnelform, white, ca. 4 cm; stamens 10, ca. 2.8 cm, filaments pubescent below; ovary densely scaly and pubescent; style densely scaly below. Capsule not described. Fl. Apr.

- About 1600 m. Hunan (Yizhang).

The original author compared this species with *Rhododendron levinei*. However, the midrib is impressed above, suggesting that this affinity may not be correct. The present authors have seen no material of this species and so cannot confirm its true affinities.

**22. *Rhododendron yaogangxianense*** Q. X. Liu, Bull. Bot. Res., Harbin 8(3): 87. 1988.

瑶岗仙杜鹃 yao gang xian du juan

Small shrubs, 0.4–0.6 m tall; young shoots sparsely scaly and hispid. Petiole 6–8 mm, scaly, densely villous; leaf blade leathery, elliptic to obovate-elliptic, 2.5–5 × 1.5–2.8 cm; base broadly cuneate to rounded; apex obtuse, mucronate; abaxial surface densely brownish-scaly and pubescent; adaxial surface densely hispid, midrib prominent abaxially. Inflorescence 1- or 2-flowered. Pedicel 0.8–1 cm, densely scaly; calyx deeply 5-lobed; lobes ca. 6 mm, long-ovate, sparsely scaly and hairy above, glabrous below; corolla funnelform, creamy white, sparsely scaly outside, ca. 4.4 × 6 cm; stamens 10, 2.5–2.8 cm; filaments pubescent below; ovary densely scaly and pubescent; style ca. 4.3 cm, densely scaly in lower 1/3. Capsule cylindrical to cylindrical-ovoid, ca. 25 × 10 mm. Fl. May.

- Dry rock crevices; ca. 1100 m. Hunan (Yizhang).

The original author compared this species with *Rhododendron yizhangense*, pointing out that it differed in having a leaf blade abaxially with a raised midrib and densely hairy surface, calyx lobes pubescent above, and in features of the capsule. The raised midrib on the abaxial surface of the leaf blade suggests an affinity with *R. levinei*, but the two species are otherwise perfectly distinct. The present authors have seen no material of this species and so cannot confirm its true affinities.

**23. *Rhododendron ciliatum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 24. 1851.

睫毛杜鹃 jie mao du juan

Shrubs, 0.3–2 m tall; young shoots scaly or hispid. Petiole ca. 6 mm, scaly, hispid; leaf blade leathery, elliptic or oblong-elliptic to oblong-lanceolate, 3–8 × 1.6–3.7 cm; base rounded or obtuse; apex acute, obtuse or acuminate, apiculate; abaxial surface scales 2–3 × their own diameter apart, small, hispid along midrib; adaxial surface scaly, hispid. Inflorescence terminal, racemose or cymose, 2–4-flowered; rachis 2–3 mm, scaly and pubescent or glabrous. Pedicel 0.5–1 cm, scaly, densely hispid; calyx pale green or red, deeply 5-lobed; lobes ca. 8 mm, broadly ovate, sparsely scaly at base; corolla funnelform, white tinged with pale red, 3.7–5 cm, glabrous throughout; lobes 5, emarginate; stamens 10, unequal, 1.2–3.1 cm, filaments densely pubescent at base; ovary 5–6-locular, densely scaly; style as long as corolla, glabrous. Capsule broadly ovoid, 10–16 mm, densely scaly. Fl. Feb–Mar.

*Rhododendron* thickets on slopes, rocky cliffs; 2700–3500 m. S Xizang [Bhutan, E Nepal, Sikkim].

**24. *Rhododendron amandum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 245. 1937.

细枝杜鹃 xi zhi du juan

Shrubs, 1.3–1.6 m tall; young shoots scaly. Petiole 4–5 mm, densely scaly and hispid; leaf blade leathery, elliptic or oblong-elliptic, 5–8.5 × 2–3.5 cm; base blunt to rounded; apex obtuse, apiculate; abaxial surface scales ca. 0.5 × their own diameter apart, brown, midrib slightly hairy; adaxial surface without scales, midrib hispid. Inflorescence terminal, shortly racemose or cymose, 2- or 3-flowered; rachis 2–3 mm, scaly and densely pubescent. Pedicel 0.6–1 cm, densely scaly; calyx red, deeply 5-lobed to base; lobes ca. 10 mm, ovate or oblong ovate, scaly; corolla funnelform, campanulate, 5-lobed, pale yellow, 3–3.8 cm, outer surface sparsely scaly, without hairs; stamens 10, unequal, 1.9–2.4 cm, filaments pubescent below; ovary 5-locular, densely scaly, otherwise glabrous; style shorter than corolla, longer than stamens, scales absent. Capsule not known.

- *Rhododendron* thickets, rocky cliffs; ca. 3500 m. Xizang.

**25. *Rhododendron valentinianum*** Forrest ex Hutchinson, Notes Roy. Bot. Gard. Edinburgh 12: 45. 1919.

毛柄杜鹃 mao bing du juan

Shrubs, 0.3–3 m tall; old branches deep gray, glabrous, branches short; young shoots scaly, densely brown-villous. Petiole stout, 3–5(–15) mm, scaly, hispid; leaf blade thick, leathery, oblong-elliptic, 3–4(–10) × 1.5–2(–6.5) cm; base broadly cuneate or bluntly rounded; apex obtuse and rounded or acute, apiculate; abaxial surface scales ca. 0.5 × their own diameter apart or contiguous, brown, midrib ± brown-hispid; adaxial surface sparsely scaly, brown or hispid along center when young; midrib and lateral veins raised abaxially, concave adaxially; lateral veins inconspicuously concave above. Inflorescence terminal, cymose, 2–4-flowered; bractlets present at anthesis, linear-spathulate, longer than pedicel, densely white-pubescent outside. Flowers fragrant. Pedicel 0.5–1.5 cm, scaly, sometimes also strap-shaped-setose; calyx 5-lobed to the base; lobes membranous, 4–8 mm, oblong or oblong-ovate to ovate, persistent in fruit, densely glandular scaly, margin strap-shaped-ciliate or without hairs; corolla funnelform-campanulate, intensely yellow, 2–3.5 cm, densely glandular-scaly and pubescent outside, lobes orbicular; stamens 10, unequal, shorter than corolla; filaments densely villous below, anthers oblong, pale red; ovary 5-locular, densely scaly; style slightly curved, as long as corolla or shorter than stamens, base with a few scales only. Capsule ovoid, 9–15 mm. Fl. Apr–May.

Mixed forests, *Rhododendron* and *Rhododendron-Lyonia* thickets, dry slopes; 1800–3100 m. Guizhou, Yunnan [NE Myanmar, N Vietnam].

- 1a. Pedicel strap-shaped-setose; calyx lobes to 8 mm, oblong-ovate to ovate, margin strap-shaped-ciliate ..... 25a. var. *valentinianum*
- 1b. Pedicel not setose; calyx lobes 4–5 mm, oblong, margin not ciliate

..... 25b. var. *oblongilobatum*

**25a. *Rhododendron valentinianum* var. *valentinianum***

毛柄杜鹃(原变种) mao bing du juan (yuan bian zhong)

Pediceal strap-shaped-setose; calyx lobes to 8 mm, oblong-ovate to ovate, margin strap-shaped-ciliate.

*Rhododendron* thickets; ca. 2400 m. Guizhou, Yunnan [NE Myanmar, N Vietnam].

**25b. *Rhododendron valentinianum* var. *oblongilobatum* R. C. Fang, Acta Bot. Yunnan. 4: 250. 1982.**

滇南毛柄杜鹃 dian nan mao bing du juan

Pediceal not setose; calyx lobes 4–5 mm, oblong, margin not ciliate.

Mixed forests, *Rhododendron-Lyonia* thickets, dry slopes; 1800–3100 m. Yunnan [N Vietnam].

**26. *Rhododendron ciliipes* Hutchinson in J. B. Stevenson, Sp. Rhodod. 457. 1930.**

香花白杜鹃 xiang hua bai du juan

Shrubs, 1–2 m tall; old branches gray, glabrous; young shoots scaly, densely brown-hispid. Petiole 5–8 mm, scaly, hispid; leaf blade oblong, ovate or ovate-elliptic, 4–7.5 × 2–3.5 cm; base rounded or broadly cuneate; apex acute or acuminate; abaxial surface pale green, scales 1–2 × their own diameter apart, brown; adaxial surface sparsely scaly; midrib flat raised abaxially, slightly concave adaxially; lateral veins 7–8-paired, thin, inconspicuous on both sides. Inflorescence terminal, 1(or 2)-flowered; bractlets present at anthesis, linear-spathulate, longer than pedicel, densely white-pubescent outside. Flowers fragrant. Pedicel 0.6–1 cm, densely scaly; calyx undeveloped or 2–6 mm, scaly abaxially, dense; corolla broadly funnelform, white tinged with red, with yellowish green markings at base within, 5.5–7 cm, outer surface scaly, tube gray-white-pubescent; stamens 10, unequal, half as long as corolla; filaments pubescent below; ovary 6-locular, densely scaly; style as long as corolla or slightly longer, basal half sparsely scaly. Capsule cylindrical-ovoid, 15–20 mm, densely brown-scaly. Fl. Apr–May, fr. Jul.

• Mixed forests, coniferous forests on hilltops, rocky valley sides, cliffs; 2500–3000 m. W Yunnan.

**27. *Rhododendron pseudociliipes* Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 122. 1978.**

褐叶杜鹃 he ye du juan

Shrubs, 0.6–2 m tall; young shoots densely brown-scaly, sparsely hispid. Petiole 6–9 mm, hispid on both sides, glabrescent; leaf blade narrowly elliptic or oblong, 3.5–6(–8) × 1.6–2.7 cm; base rounded or cuneate; apex acuminate, apiculate; abaxial surface deep brown when dry, scales to 1 × their own diameter apart, unequal; adaxial surface brownish scaly when young. Inflorescence terminal, 1(or 2)-flowered. Flowers fragrant. Pedicel (0.6–)0.7–1 cm, densely scaly; calyx rounded or wavy, persistent in fruit, densely scaly abaxially; corolla broadly funnelform, white tinged with pale reddish purple, 5–7 cm, tube 25–35 mm; outer surface sparsely scaly, pubescent; sta-

mens 10, unequal, half as long as corolla; filaments pubescent below; ovary 6-locular, scaly; style as long as corolla or slightly longer, scaly near base. Capsule cylindrical-cylindric, 15–20 mm. Fl. Apr, fr. Aug–Sep.

Thickets, cliffs, sometimes epiphytic on large trees; 2400–3100 m. NW Yunnan [NE Myanmar].

**28. *Rhododendron rhombifolium* R. C. Fang, Acta Bot. Yunnan. 4: 251. 1982.**

菱形叶杜鹃 ling xing ye du juan

Shrubs, often epiphytic, 2–3 m tall; old branches gray; young shoots densely brown-scaly. Petiole short, 5–12 mm, densely brown-scaly; hispid on both surfaces when young, glabrescent; leaf blade rhomboidal or rhomboidal-lanceolate, 5–8.5 × 2–3 cm; base cuneate; apex acuminate; abaxial surface brown when dry, scales less than 1 × their own diameter apart, large, unequal, brownish red; adaxial surface glabrous; midrib raised abaxially, concave adaxially; lateral veins thin, inconspicuous on both surfaces. Flowers not seen, infructescence umbellate, 3- or 4-fruited. Pedicel stout, 0.6–1 cm, densely brown-scaly; fruiting calyx margin wavy, ciliate, ca. 2 mm, persistent; style persistent, basal 1/3 with scales. Capsule cylindrical or ovoid-cylindric, 6-lobed, 12–20 × 8–12 mm, densely brown-scaly.

• Broad-leaved forests, sometimes epiphytic on trees in dense forests; 1800–1900 m. Yunnan.

The leaf shape of *Rhododendron rhombifolium* is close to that of the sympatric *R. taronense*, but the clearly ciliate calyx of the former distinguishes the two species. Flowering material is required before the true affinities of *R. rhombifolium* can be ascertained, as the type specimen is in fruit. The label on the isotype at E (“Salwin-Kiukiang Divide, Muchielung, 1800 m, 8 Oct. 1938, T. T. Yü 20581”) is somewhat at variance with the citation in the protologue (“Gongshan, *ad truncos in sylvis densis*, alt. 1800 m, 8 Oct. 1937, T. T. Yü 20581”).

**29. *Rhododendron leptocladon* Dop in Lecomte, Fl. Indo-Chine 3: 745. 1930.**

金平林生杜鹃 jin ping lin sheng du juan

*Rhododendron nemorosum* R. C. Fang.

Shrubs, epiphytic, 0.5–1 m tall; young shoots densely brown-scaly, otherwise glabrous. Petiole 5–7 mm, densely brown-scaly, glabrous; leaf blade leathery, elliptic, oblong-elliptic or ovate, 4–6(–8) × 2–3.5 cm; base cuneate to rounded; apex acute, apiculate; abaxial surface gray green, scales contiguous, or less than their own diameter apart, unequal, brown, without hairs; adaxial surface green, glabrous; midrib raised abaxially, concave adaxially; lateral veins 6-paired, slightly concave above and raised below, or inconspicuous on both surfaces. Inflorescence terminal, umbellate, 3- or 4-flowered. Pedicel stout, 0.3–0.4 cm, densely scaly; calyx 5-lobed; lobes 1–2 mm, ovate, apex rounded, densely scaly abaxially; corolla broadly funnelform, lobed to the middle, yellow, 3.5–4.3 cm, outer surface sparsely scaly, tube gray-white-pubescent, lobes 5, ovate; stamens 10, unequal, shorter than corolla; filaments densely spreading pubescent at base, anthers brown, ca. 5 mm; ovary densely scaly; style slightly longer than corolla, basal part scaly. Capsule ovoid-cylindric, 5-lobed, ca. 11 mm, densely

scaly.

Forests, often epiphytic on trees; 2000–2300 m. S Yunnan [N Vietnam].

One of us (Chamberlain) has observed this species in the field in Vietnam. Research at Edinburgh by T. Holland (A bio-geographical study of Vietnamese *Rhododendron*. MSc thesis, University of Edinburgh. 1997) has shown that *R. nemorosum* is synonymous with *R. leptocladon*.

**30. *Rhododendron dendricola*** Hutchinson, Notes Roy. Bot. Gard. Edinburgh 12: 60. 1919.

附生杜鹃 fu sheng du juan

?*Rhododendron atentsiense* Handel-Mazzetti; *R. notatum* Hutchinson.

Shrubs, sometimes epiphytic, 1–3.5 m tall; old branches gray, less scaly; young shoots green, thin and long, sparsely brown or brownish red scaly. Petiole 5–13 mm, sparsely scaly; leaf blade oblong-elliptic or obovate-elliptic, 7–12 × 2–4.5 cm; base narrow to rounded; apex obtuse, acute, apiculate; abaxial surface pinkish green, scales less than, or 1–4 × their own diameter apart, unequal, reddish brown; adaxial surface sparsely scaly; midrib flat raised abaxially, slightly concave adaxially; lateral veins 8-paired, thin, inconspicuous on both surfaces. Inflorescence terminal, umbellate, 2- or 3-flowered. Flowers fragrant. Pedicel ca. 1 cm, densely scaly; calyx undeveloped, circular, densely scaly; corolla broadly funnelform, white tinged with pale red, ca. 7 cm, tube gray-white-pubescent; stamens 10, unequal, half as long as corolla lobes; filaments pubescent below; ovary 6-locular, densely scaly; style as long as corolla, sparsely scaly below. Capsule cylindrical-ovoid, 15–20 mm, densely brown-scaly. Fl. Apr–May, fr. May–Nov.

Mixed forests, thickets, rocks, sometimes epiphytic on trees; 1300–1900 m. SE Xizang, NW Yunnan [NE India, N Myanmar].

*Rhododendron atentsiense* may not be a synonym of *R. dendricola*. The calyx lobes of the former taxon are comparatively well developed, up to 5 mm, and they are clearly ciliate. The type specimen of *R. atentsiense* is said to have been collected at close to 4000 m, which is assumed to be an error.

**31. *Rhododendron roseatum*** Hutchinson, Notes Roy. Bot. Gard. Edinburgh 12: 57. 1919.

红晕杜鹃 hong yun du juan

*Rhododendron lasiopodum* Hutchinson.

Shrubs, sometimes small trees, 1.2–3(–4) m tall; young shoots pale brown, sparsely scaly. Petiole 5–12 mm, sparsely scaly; leaf blade ovate, 6–10 × 2–4.5 cm; base obtuse, rounded or broadly cuneate; apex triangular, acute, or acuminate, apiculate; abaxial surface pink green, gray-white, scales less than 1 × their own diameter apart to nearly contiguous, rarely 1 × their own diameter apart, unequal, brown or brownish red; adaxial surface densely brown scaly when young; midrib flat raised abaxially, slightly concave adaxially; lateral veins 6–8-paired, thin, inconspicuous on both sides. Inflorescence terminal, umbellate, 2–4-flowered. Flowers fragrant. Pedicel 1–2 cm, densely scaly; base gray-white-pubescent; calyx undeveloped, lobes 5, densely scaly; corolla broadly funnelform, 5-lobed to the middle, pinkish in bud, white tinged with pale red at anthesis,

5.5–7 cm, tube gray-white-pubescent, lobes rounded, densely scaly; stamens 10, unequal, half as long as corolla lobes; filaments pubescent below; ovary 6-locular, densely scaly; style as long as corolla, basal part scaly. Capsule cylindrical-ovoid, ca. 15 mm, densely brown-scaly. Fl. May–Jul.

Evergreen broad-leaved forests, forests on hilltops, open slopes, rocks; 2000–3000 m. Yunnan [NE Myanmar].

**32. *Rhododendron pachypodum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 254. 1916.

云上杜鹃 yun shang du juan

*Rhododendron pilicalyx* Hutchinson; *R. rufosquamosum* Hutchinson; *R. scottianum* Hutchinson, nom. illeg. superfl.; *R. supranubium* Hutchinson.

Shrubs, rarely small trees, rarely epiphytic, 1–4(–5) m tall; young shoots densely brown-scaly, otherwise glabrous. Petiole 6–16 mm, densely scaly, sometimes long-villous; leaf blade leathery, elliptic, elliptic-lanceolate or obovate, 6–11 × 2–5 cm; base narrower; apex acuminate or acute; abaxial surface gray white, scales less than 1 × their own diameter apart to nearly contiguous, sometimes 1 × their own diameter apart, brown or brownish red; adaxial surface sparsely scaly; midrib and lateral veins raised abaxially, concave adaxially; lateral veins thin. Inflorescence terminal, umbellate, (2–)3(–4)-flowered. Pedicel 0.5–1 cm, densely scaly; calyx undeveloped, 5-lobed; lobes ca. 1 mm, rounded or triangular, persistent in fruit, scaly; corolla broadly funnelform, white tinged with pale red, inside with pale yellow markings, 5–7 cm, densely scaly, tube gray-white-pubescent outside; stamens 10, unequal, long ones half as long as corolla lobes; filaments pubescent below; ovary (5 or)6-locular, densely scaly; style rarely longer than corolla, basal part scaly. Capsule ovoid or cylindrical-ovoid, 15–25 mm. Fl. Mar–May.

Mixed forests, thickets, open areas on rocky mountains, dry slopes; 1200–2800(–3100) m. Yunnan [NE Myanmar].

Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 47, 53. 1980) maintained *Rhododendron rufosquamosum* as a species distinct from *R. pachypodum*.

**33. *Rhododendron ciliicalyx*** Franchet, Bull. Soc. Bot. France 33: 233. 1886.

睫毛萼杜鹃 jie mao e du juan

Shrubs, 1–2 m tall; old branches gray-white, bark peeling, glabrous; young shoots brown, sparsely scaly, densely yellow-hispid. Petiole 6–10 mm, sparsely scaly; leaf blade oblong-elliptic, narrowly ovate to oblong-elliptic, 4.5–7 × 1.5–4.5 cm; base cuneate; apex acute; abaxial surface gray-green, scales 0.5–1.5 × their own diameter apart, unequal, brown; adaxial surface sparsely scaly when young; midrib and lateral veins raised abaxially, concave adaxially; lateral veins 8-paired, thin. Inflorescence umbellate, 2- or 3-flowered. Pedicel 0.6–1 cm, densely scaly; calyx undulate, 5-lobed; lobes to 6 mm, rounded or triangular, densely scaly; corolla broadly funnelform, pale purple, pale red or white, 3–5 cm, outer surface not scaly but pubescent; lobes ovate, as long as tube; stamens 10, unequal, shorter than corolla; filaments sparsely pubescent below, anthers ca. 6 mm; ovary 5(or)6-locular, densely scaly; style as

long as stamens, basal half scaly. Capsule cylindrical-ovate, 10–20 mm, densely scaly. Fl. Apr, fr. Oct–Dec.

Mixed forests, thickets on rocky mountains, dry slopes; 1000–3100 m. Guizhou, Yunnan [NE India, Laos, Myanmar, Thailand, Vietnam].

- 1a. Leaf blade abaxial surface scales 0.5–1.5 × their own diameter apart; ovary 5(–6)-locular; style not much longer than corolla ... 33a. subsp. *ciliicalyx*
- 1b. Leaf blade abaxial surface scales less than 1 × their own diameter apart; ovary 6-locular; style much longer than corolla ..... 33b. subsp. *lyi*

**33a. *Rhododendron ciliicalyx* subsp. *ciliicalyx***

睫毛萼杜鹃(原亚种) jie mao e du juan (yuan ya zhong)

*Rhododendron missionarium* H. Léveillé; *R. pseudociliicalyx* Hutchinson.

Leaf blade abaxial surface scales 0.5–1.5 × their own diameter apart. Ovary 5(–6)-locular; style not much longer than corolla. Fl. Apr.

Mixed forests, thickets on rocky mountains, dry slopes; 1000–3100 m. Yunnan [N Vietnam].

**33b. *Rhododendron ciliicalyx* subsp. *lyi*** (H. Léveillé) R. C. Fang, Fl. Reipubl. Popularis Sin. 57(1): 48. 1999.

长柱睫毛萼杜鹃 chang zhu jie mao e du juan

*Rhododendron lyi* H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 147. 1914.

Leaf blade abaxial surface scales less than 1 × their own diameter apart. Ovary 6-locular; style much longer than corolla. Fl. Apr.

Guizhou, Yunnan [NE India, Laos, Myanmar, Thailand, Vietnam].

**34. *Rhododendron taronense*** Hutchinson in J. B. Stevenson, Sp. Rhodod. 480. 1930.

薄皮杜鹃 bao pi du juan

Shrubs, sometimes epiphytic on trees, 1.2–3 m tall; bark on old branches dark purple, smooth and peeling; young shoots sparsely scaly. Petiole grooved, 8–15 mm, sparsely scaly; leaf blade leathery, narrowly elliptic or oblong-lanceolate, 7–12 × 2.3–4.3 cm, acute at both ends; abaxial surface scales (2–)3–5 × their own diameter apart, brown or yellowish brown, most concave; adaxial surface sparsely scaly; lateral veins more than 10-paired, thin, inconspicuous on both surfaces. Inflorescence terminal, cymose, 4- or 5-flowered; rachis ca. 10 mm, sparsely scaly and densely pubescent. Flowers fragrant. Calyx slightly 5-lobed, densely scaly abaxially, margin glabrous; corolla broadly funnelform, 5-lobed to the middle, white with yellow markings inside, 4–5 cm, lobes rounded, spreading; stamens 10, unequal, long ones as long as or exserted from corolla; filaments pubescent below; ovary 6-locular, densely scaly; style longer than corolla, basal 1/4 scaly. Capsule cylindrical-ovate, base oblique, 18–25 mm, densely scaly. Fl. Nov.

• Broad-leaved forests by rivers, sometimes epiphytic on trees; 1200–1600 m. Yunnan.

Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 48. 1980) reduced this species to a synonym of *Rhododendron dendricola*.

**35. *Rhododendron walongense*** Kingdon Ward, Gard. Chron., ser. 3, 133: 5. 1953.

瓦弄杜鹃 wa nong du juan

Small trees or large shrubs, sometimes epiphytic, 2–3 m tall; branches scaly, otherwise glabrous. Petiole grooved, 8–10 mm, densely scaly, glabrous or sparsely hispid; leaf blade leathery, oblong-lanceolate, oblanceolate, or oblong-elliptic, 10–13 × 3–4.4 cm; base cuneate; apex acute or acuminate, apiculate; abaxial surface pale gray-green or pale green, scales 1–3 × their own diameter apart, large, brown or darker; adaxial surface deep green, without scales; midrib and lateral vein raised; lateral veins 10–14-paired, concave. Inflorescence terminal, cymose, 3–6-flowered; rachis 2–3 mm, scaly and pubescent. Flowers fragrant. Pedicel stout, 0.8–1.5 cm, densely scaly, without hairs; calyx undeveloped, ca. 1 mm, scaly, margin sometimes long ciliate; corolla funnelform, creamy yellow or creamy white, with green markings inside, 6–7 cm, lobes lacking or 5; stamens 10, unequal, 3.5–5 cm, filaments densely pubescent below; ovary truncate at apex, 6-locular, densely scaly, glabrous; style 6–7 cm, longer than corolla, basal half scaly. Capsule cylindrical-elliptic, base oblique, ca. 17 × 8–9 mm, densely scaly.

Valley forests, mixed forests on rocky slopes, cliffs; 1500–2200 m. S Xizang [NE India].

**36. *Rhododendron wumingense*** W. P. Fang, Acta Phytotax. Sin. 21: 464. 1983.

武鸣杜鹃 wu ming du juan

Shrubs, 2–4 m tall; young shoots purplish green, scaly, otherwise glabrous or sparsely hispid. Petiole 4–6 mm, pale yellow-scaly; leaf blade leathery, oblong-obovate, or oblong-elliptic, 3.5–4.5 × 1.8–2.4 cm; base broadly cuneate; apex rounded, rarely acute, apiculate; abaxial surface gray, scales 1–3 × their own diameter apart, golden; adaxial surface deep green, not scaly; lateral veins 10–12-paired. Inflorescence terminal, cymose, 2-flowered. Pedicel 0.6–0.8 cm, sparsely pale yellow-scaly; calyx pale yellowish purple, 5-lobed; lobes short, triangular; corolla broadly funnelform, white, 4–5 cm, tube 25–28 × ca. 16 mm in diam.; outer surface sparsely scaly, without hairs; stamens 9 or 10, unequal, 2.5–4 cm; filaments villous or white-pubescent below; ovary 5-locular, densely scaly; style ca. 5 cm, scaly throughout. Capsule cylindrical, 8–9 mm, densely brown-scaly.

• About 1000 m. C Guangxi (Wuming).

**37. *Rhododendron scopulorum*** Hutchinson in J. B. Stevenson, Sp. Rhodod. 475. 1930.

石峰杜鹃 shi feng du juan

Shrubs, 2–4 m tall; old branches smooth, sparsely scaly; young shoots sparsely scaly. Petiole grooved, 8–13 mm, densely scaly, rarely hispid or glabrous; leaf blade leathery, oblong-obovate, or oblong-oblancoate, 4–8 × 1.6–3.6 cm; base obtuse or cuneate; apex rounded or obtuse; abaxial surface pale gray-green, scales sparse, 2–4 × their own diameter apart, average to small, brown; adaxial surface deep green when dry, often convex, without scales. Inflorescence terminal, cymose, 2–4-flowered; rachis 2–3 mm, scaly. Flowers fragrant. Pedicel 0.8–1.8

cm, densely scaly; calyx obliquely 5-lobed; lobes ca. 2 mm, ovate, scaly, without hairs; corolla funnellform, white tinged with pale red, with yellow markings inside, 4–6 cm, outer surface sparsely scaly and pubescent; stamens 10(or 11), unequal, 2.4–4.7 cm; filaments densely pubescent at base; ovary 6-locular, densely scaly; style as long as corolla, base scaly. Capsule cylindrical, oblique at base, 12–20 mm, densely scaly.

- Rocky thickets, cliffs. SE Xizang.

**3. Rhododendron** subsect. **Moupinensia** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 534. 1949.

川西杜鹃亚组 chuan xi du juan ya zu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* ser. *Moupinensia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 502. 1930 [*“Moupinense”*].

Shrubs, 0.5–1.5 m tall, often epiphytic; young shoots scaly, densely or sparsely brown-hispid; leaf blade leathery, margin revolute; abaxial surface scales dense, brown, unequal; adaxial surface often hairy at least near base of midrib. Inflorescence terminal, cymose, 1- or 2-flowered. Calyx developed, 2–4 mm, 5-lobed; corolla broadly funnellform, white, sometimes tinged pale red, or rosy red, outer surface glabrous, pubescent in tube; stamens 10, unequal; ovary 5-locular; style erect or curved, without scales, glabrous or base pubescent. Capsule oblong or ellipsoid, 10–23 mm. Seed winged.

- Three species: China.

- 1a. Style longer than corolla; corolla ca. 4 cm; leaf blade 2–4(–6) cm ..... 38. *R. moupinense*
- 1b. Style shorter than corolla; corolla 1.5–3 cm; leaf blade 1–2 cm.
- 2a. Corolla rosy red, tube pubescent inside; scales on leaf abaxial surface ca. 1 × their own diameter apart ... 39. *R. dendrocharis*
- 2b. Corolla white, tube glabrous inside; scales on leaf abaxial surface contiguous ..... 40. *R. petrocharis*

**38. Rhododendron moupinense** Franchet, Bull. Soc. Bot. France 33: 233. 1886.

宝兴杜鹃 bao xing du juan

Shrubs, sometimes epiphytic, 1–1.5 m tall; old branches glabrous; shoots spreading; young shoots scaly, sparsely brown-hispid. Petiole 3–7 mm, densely brown-scaly; leaf blade leathery, oblong-elliptic or ovate-elliptic, 2–4(–6) × 1.2–2.3(–4) cm; base obtuse, apex obtuse, apiculate; abaxial surface gray-white, scales contiguous to 1 × their own diameter apart, small, unequal, brown; adaxial surface pubescent along midrib only near the base; midrib raised abaxially, concave adaxially; lateral veins inconspicuous on both surfaces. Inflorescence terminal, cymose, 1- or 2-flowered. Pedicel 0.5–0.7 cm, scaly, pubescent or hispid, sometimes glabrous; calyx lobes 5, 2–4 mm, oblong or ovate, persistent in fruit, scales present; corolla broadly funnellform, white or tinged with pale red, with red markings inside, ca. 4 cm, outer surface glabrous; stamens 10, unequal, 2–3 cm, shorter than corolla; filaments with lower part white pubescent; ovary 5-locular, densely scaly; style slightly longer than corolla, glabrous. Capsule ovate, 15–23 mm. Fl. Apr–May, fr. Jul–Oct.

- Epiphytic on trees in forests, rocks; 1900–4000 m. Guizhou, Sichuan, NE Yunnan.

**39. Rhododendron dendrocharis** Franchet, Bull. Soc. Bot. France 33: 233. 1886.

树生杜鹃 shu sheng du juan

Shrubs, often epiphytic, 0.5–0.7 m tall; branches thin and

short; young shoots scaly, densely brown-hispid. Petiole scaly, hispid; leaf blade thickly leathery, elliptic, 0.9–1.8 × 0.3–1 cm; base broadly cuneate to blunt; apex obtuse, apiculate; abaxial surface scales dense, ca. 1 × their own diameter apart, small, unequal, brown; adaxial surface with a very short-lived brown-hispid indumentum. Inflorescence terminal, cymose, 1- or 2-flowered. Pedicel 0.2–0.5 cm, scaly, densely hispid; calyx lobes 5, 2–3 mm, ovate, sparsely scaly; corolla broadly funnellform, fresh rosy red, with deep red markings inside tube, 1.5–2.5 cm, outer surface glabrous, inner surface of tube pubescent; stamens 10, unequal, 1.2–1.5 cm, shorter than corolla; filaments densely pubescent in lower half; ovary 5-locular, densely scaly; style slender, erect or curved, shorter than corolla, shorter or slightly longer than stamens; base densely pubescent. Capsule ovate or cylindrical, 10–13 mm. Fl. Apr–Jun, fr. Sep–Oct.

- Epiphytic on *Abies*, *Tsuga*, or broad-leaved trees; 2600–3000 m. Sichuan.

**40. Rhododendron petrocharis** Diels, Repert. Spec. Nov. Regni Veg. 17: 196. 1921.

饰石杜鹃 shi shi du juan

Shrubs, epiphytic, 0.5–1 m tall; branches thin and long; old branches hispid; young shoots scaly, pubescent and brown-hispid. Petiole 2–7 mm, scaly, densely hispid; leaf blade thickly leathery, ovate or elliptic, 1–2 × 0.5–1 cm; base broadly cuneate; apex rounded, apiculate; abaxial surface scales con-

tigulous, unequal, brown; adaxial surface sparsely scaly when young or scales absent, sometimes hairy along midrib. Inflorescence terminal, cymose, 1- or 2-flowered. Pedicel ca. 0.4 cm, scaly, hispid or pubescent; calyx lobes 5, 2–3 mm, ovate, scaly at base abaxially; corolla broadly funnelliform, white, 2–3 cm, outer surface glabrous; tube ± pubescent within; stamens 10,

unequal, ca. 1.5 cm, shorter than corolla; filaments densely pubescent in lower half; ovary 5-locular, densely scaly; style slender, erect, shorter than corolla and stamens, glabrous. Capsule not known.

- Cliffs; ca. 1800 m. NC Sichuan.

**4. *Rhododendron* subsect. *Monantha*** Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 122. 1978.

黄绿杜鹃亚组 *huang lü du juan ya zu*

Fang Ruizheng (方瑞征 *Fang Rhui-cheng*); David F. Chamberlain

Shrubs, 0.3–3 m tall, sometimes epiphytic; young shoots scaly, hairs absent. Leaf blade leathery; abaxial surface scales large, flat, with wide margin, brown, often unequal; adaxial surface with scales only. Inflorescence terminal, subumbellate, 1–3-flowered. Calyx undeveloped, undulate, or 5-lobed, 0.5–4 mm; corolla tubular or tubular-campanulate, lobes not spreading, yellow, tinged with green when dry, rarely purple, outer surface scaly; stamens 10, longer than corolla; ovary 5-locular; style longer than corolla, glabrous or scaly below. Capsule oblong, 8–18 mm, densely scaly. Seed winged.

Four species: China, India, Myanmar; three species (one endemic) in China.

- 1a. Inflorescence 1(or 2)-flowered; abaxial leaf surface densely brownish scaly, these ± their own diameter apart ..... 41. *R. monanthum*
- 1b. Inflorescence 2- or 3-flowered; abaxial leaf surface pale brown scaly, these 0.5–3 × their own diameter apart.
  - 2a. Calyx 2.5–4 mm; lobes 5, oblong-ovate or nearly rounded; style scaly at the base ..... 42. *R. flavantherum*
  - 2b. Calyx ca. 0.5 mm, 5-toothed; style not scaly ..... 43. *R. kasoense*

**41. *Rhododendron monanthum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 250. 1916.

一朵花杜鹃 *yi duo hua du juan*

Shrubs, sometimes epiphytic, 0.3–1 m tall; old branches gray-white, bark peeling, glabrous, branches short and dense; young shoots densely scaly. Petiole 4–8 mm, densely scaly; leaf blade leathery, elliptic, 2–5 × 1–2.5 cm; base cuneate to broadly cuneate; apex blunt, rounded or acute, apiculate; abaxial surface grayish white, scales dense, ca. their own diameter apart, unequal, brown; adaxial surface sparsely or densely scaly. Inflorescence terminal, 1-flowered. Pedicel ca. 0.5 cm, densely scaly; calyx undulate, 1–2 mm, densely scaly; corolla tubular-campanulate, creamy or lemon yellow, 1.6–2.4 cm, outer surface scaly, without hairs; stamens 10, unequal, ca. 1.5 cm, some slightly longer than corolla, others shorter; filaments densely villous at base; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 8–14 mm. Fl. Jul–Sep, fr. Jul–Oct.

Shrubby meadows in high mountains, sometimes epiphytic on trees; 2000–3000(–3600) m. SE Xizang, NW Yunnan [SE Myanmar].

The name *Rhododendron sulfureum* Franchet has been misapplied to this species.

**42. *Rhododendron flavantherum*** Hutchinson & Kingdon Ward in J. B. Stevenson, Sp. Rhodod. 786. 1930.

黄药杜鹃 *huang yao du juan*

Shrubs, 1.8–3 m tall; young shoots scaly. Petiole 5–8 mm, scaly; leaf blade oblong-elliptic, 3–4 × 1.3–2 cm; base rounded; apex obtuse, apiculate; abaxial surface scaly, scales 2–3 × their

own diameter apart, unequal, pale brown; adaxial surface scaly. Inflorescence terminal, subumbellate, 3-flowered; rachis ca. 2 mm, scaly. Pedicel 0.6–0.8 cm, scaly; calyx 5-lobed; lobes 2.5–4 mm, rounded or oblong-ovate, scaly; corolla tubular or tubular-campanulate, fresh yellow, 1.5–2 cm, outer surface scaly; stamens 10, unequal, 1.3–1.8 cm; filaments densely villous at base; ovary 5-locular, densely scaly; style slender, long, base scaly. Capsule cylindrical, ca. 10 mm, densely scaly.

- Cliffs; 2500–2800 m. Xizang.

**43. *Rhododendron kasoense*** Hutchinson & Kingdon Ward in J. B. Stevenson, Sp. Rhodod. 787. 1930.

黄管杜鹃 *huang guan du juan*

Shrubs, sometimes epiphytic, 0.3–2 m tall; branches thin and dense; young shoots scaly. Petiole 5–15 mm, scaly; leaf blade lanceolate or oblong-lanceolate, 3–7 × 1–2.8 cm; base blunt or narrower; apex acute, acuminate or obtuse, apiculate; abaxial surface scaly, scales 1.5–3 × their own diameter apart, unequal, pale brown; adaxial surface scaly. Inflorescence terminal, subumbellate, 2- or 3-flowered; rachis 1–2 mm, scaly. Pedicel 0.4–0.6 cm, densely scaly; calyx 5-lobed; lobes ca. 0.5 mm, triangular, densely scaly abaxially; corolla tubular-campanulate, yellow, 1.6–2 cm, outer surface scaly; stamens 10, unequal, 0.8–1.9 cm; filaments densely villous in lower part; ovary 5-locular, densely scaly; style glabrous. Capsule cylindrical, 9–18 mm, densely scaly.

Epiphytic on trees in dense forests, rocks in thickets; 2100–2800 m. SE Xizang [India].

**5. *Rhododendron* subsect. *Triflora*** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 536. 1949.

三花杜鹃亚组 *san hua du juan ya zu*

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* ser. *Triflora* Hutchinson in J. B. Stevenson, Sp. Rhodod. 758. 1930 [*Triflorum*].

Shrubs, rarely small trees, usually evergreen, rarely deciduous or semievergreen, 0.6–10 m tall; young shoots scaly or glandular-scaly or sometimes glabrous, rarely pubescent, or hispid. Leaf blade leathery, less often papery; abaxial surface scales dense, yellow to brown, large, unequal or all similar, often without hairs, sometimes pubescent along midrib; adaxial surface sparsely or densely scaly, scales unequal, often absent by maturity, hairs usually absent, rarely pubescent along midrib. Inflorescence terminal or subterminal, umbellate or shortly racemose, (1–)2–5(–10)-flowered; rachis 0.5–8 mm. Calyx undeveloped, 0.5–5 mm; corolla broadly funnelform-campanulate, lobed to middle, red to purple, white or yellow, rarely pale green or blue, sometimes with darker spots, with or without scales on outer surface, rarely hairy; stamens 10, unequal; ovary 5-locular, usually densely scaly, rarely also pubescent; style often longer than corolla, usually glabrous, rarely pubescent at base, not scaly. Capsule cylindrical, 6–20 mm. Seed wingless.

Twenty-five species: Bhutan, China, India, Japan, Myanmar, Nepal, Sikkim; 24 species (20 endemic) in China.

- 1a. Leaf blade ± hairy on both sides, or at least midrib pubescent or hispid abaxially and pubescent adaxially.
  - 2a. Corolla pale yellow; abaxial leaf surface with scales 3–5 × their own diameter apart ..... 44. *R. shimianense*
  - 2b. Corolla white, pale green, purple or rosy red; abaxial leaf surface densely or sparsely scaly.
    - 3a. Young shoots, petiole, leaf adaxial surface, corolla tube, and ovary hispid ..... 45. *R. trichanthum*
    - 3b. Young shoots, petiole, leaf adaxial surface, corolla tube, and ovary pubescent or glabrous, not hispid.
      - 4a. Corolla 1.5–2 cm.
        - 5a. Leaf obovate or elliptic; apex obtuse or rounded; corolla rosy red; leaf abaxial surface densely scaly, scales at most 1 × their own diameter apart; pedicel 7–10 mm ..... 46. *R. bivelatum*
        - 5b. Leaf ovate; apex apiculate; corolla white; leaf abaxial surface sparsely scaly, scales 1–3 × their own diameter apart; pedicel 3–6 mm ..... 47. *R. guangnanense*
      - 4b. Corolla 2.5–3.5 cm.
        - 6a. Leaf blade 3–7 cm; corolla purple, red, or white ..... 48. *R. augustinii*
        - 6b. Leaf blade 7–10 cm; corolla pale green ..... 49. *R. brachypodum*
- 1b. Leaf blade glabrous on both surfaces, or at most pubescent along midrib adaxially.
  - 7a. Corolla yellow, creamy yellow or pale green.
    - 8a. Leaf blade papery, abaxial surface sparsely scaly, scales 0.5–6 × their own diameter apart; leaf apex acuminate or caudate; corolla densely pubescent outside ..... 50. *R. lutescens*
    - 8b. Leaf blade leathery, abaxial surface densely scaly, scales ± contiguous to their own diameter apart; leaf apex acute, acuminate or obtuse; corolla glabrous or pubescent outside.
      - 9a. Corolla outer surface not scaly, 1.6–2.2 cm ..... 51. *R. wongii*
      - 9b. Corolla outer surface scaly, 2–3.5 cm.
        - 10a. Corolla with yellowish green markings inside; scales on abaxial leaf surface dimorphic, the larger deep brown, the smaller yellowish brown; leaf midrib adaxially hairy ..... 52. *R. ambiguum*
        - 10b. Corolla with brown spots inside; scales on abaxial leaf surface uniform; leaf midrib adaxially glabrous ..... 53. *R. triflorum*
  - 7b. Corolla white, pale red or purple, never yellow.
    - 11a. Scales on abaxial leaf surface scattered, (1–)2–4(–8) × their own diameter apart.
    - 12a. Mature leaves with abaxial surface pinkish white, scales 0.5–4 × their own diameter apart; corolla white to lavender pink, densely glandular-scaly outside, sometimes pubescent on tube ..... 54. *R. zaleucum*
    - 12b. Mature leaves with abaxial surface pale green or pale brown; corolla pale red, pale purple or white, sparsely scaly or not outside, without hairs.
      - 13a. Leaf blade V-shaped in cross section; scales on abaxial surface contiguous to 4 × their own diameter apart; adaxial surface and petioles glabrous ..... 55. *R. davidsonianum*
      - 13b. Leaf blade flat; scales on abaxial surface 2–8 × their own diameter apart; adaxial surface and petioles sometimes hairy.
        - 14a. Evergreen; young shoots, leaf adaxially along midrib, leaf margin and petioles glabrous or pubescent; corolla pale purple in bud ..... 56. *R. rigidum*
        - 14b. Evergreen or semievergreen; young shoots, leaf adaxial surface, leaf margin and petioles glabrous or pubescent or sparsely hispid; corolla white in bud (see also 58. *R. pleistanthum*) ..... 57. *R. yunnanense*
  - 11b. Scales on abaxial leaf surface dense, ± contiguous to 1 × their own diameter apart.
    - 15a. Leaves 1.6–2.6 × 0.5–1.2 cm; corolla 1.3–1.6 cm, not scaly outside ..... 59. *R. gemmiferum*
    - 15b. Leaves 2–11 × 1–3.5 cm; corolla 1.5–4 cm, scaly or not outside.
      - 16a. Calyx lobes irregular, to 4–6 mm.
      - 17a. Leaf blade base cuneate, rarely rounded, abaxial surface with scattered large scales; calyx with long



- hairs; corolla white or pale reddish purple, inside with deep green spots ..... 60. *R. searsiae*
- 17b. Leaf blade base rounded, rarely broadly cuneate, abaxial surface scales all similar; calyx scaly along margin; corolla pale or deep purplish red, inside with or without brownish red spots ..... 61. *R. concinnum*
- 16b. Calyx often undeveloped, rimlike or undulate, lobes 0.5–2 mm.
- 18a. Leaf blade base rounded or broadly cuneate.
- 19a. Petiole hispid; corolla purple or deep red, 3–4 cm ..... 62. *R. amesiae*
- 19b. Petiole glabrous; corolla pale yellow, pale red or rosy red, 1.2–3 cm.
- 20a. Leaf blade apex rounded, scales on abaxial surface flat, veins inconspicuous on both sides; corolla not scaly outside ..... 63. *R. oreotrephe*
- 20b. Leaf blade apex obtuse to acute, apiculate; scales on abaxial surface concave, veins conspicuous on both sides; corolla scaly outside ..... 64. *R. tatsienense*
- 18b. Leaf base narrower, cuneate to rounded.
- 21a. Leaf blade elliptic, 2.5–5 × 0.8–1.8 cm; corolla 1.5–1.8 cm ..... 65. *R. xichangense*
- 21b. Leaf blade elliptic, elliptic-lanceolate or oblong-lanceolate, 3–11 × 1.2–3.5 cm; corolla 1.6–3.5 cm.
- 22a. Leaf blade oblong or oblong-lanceolate; abaxial leaf surface with scales thin, gray-brown, contiguous or overlapping, to 0.5 × their own diameter apart ..... 66. *R. polylepis*
- 22b. Leaf blade elliptic or elliptic-lanceolate; abaxial leaf surface with scales rusty brown, 0.5–1(–2) × their own diameter apart ..... 67. *R. siderophyllum*

**44. *Rhododendron shimianense*** W. P. Fang & P. S. Liu, Bull. Bot. Res., Harbin 2(4): 3. 1982.

石棉杜鹃 shi mian du juan

Shrubs, ca. 2 m tall; young shoots pale purple, sparsely scaly. Petiole 1–1.3 mm, sparsely scaly; leaf blade thinly leathery, narrowly elliptic or oblong-elliptic, 5–8 × 1.5–3 cm; base cuneate; apex acuminate, apiculate; abaxial surface pale green, scales 3–5 × their own diameter apart, yellow, white-pubescent in lower half; adaxial surface deep green, shiny, pubescent along midrib; lateral veins inconspicuous on both surfaces. Inflorescence terminal, umbellate, 3-flowered. Pedicel pale purple, 1–1.7 cm, sparsely scaly; calyx lobes 5, ca. 1.5 mm, apex acute; corolla funnelform-campanulate, 5-lobed to middle, pale yellow, 3.5–4 cm, outer surface not scaly; stamens 10, unequal, 2–2.5 cm; filaments white-villous at base; ovary densely scaly; style 3.5–4 cm, longer than corolla. Capsule not known.

- About 2800 m. Sichuan.

**45. *Rhododendron trichanthum*** Rehder, J. Arnold Arbor. 26: 480. 1945.

长毛杜鹃 chang mao du juan

*Rhododendron villosum* Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 119. 1910, not Roth (1807).

Shrubs, 1–3 m tall; young shoots scaly, densely hispid and pubescent. Petiole 4–10 mm, scaly, densely hispid and pubescent; leaf blade oblong-lanceolate and ovate-lanceolate, 4–11 × 1.5–3.5 cm; base cuneate to rounded; apex acuminate or acute; abaxial surface scales 1–4 × their own diameter apart, unequal, yellowish brown; hispid and pubescent, densely so along midrib; adaxial surface sparsely scaly, hispid to pubescent or glabrous. Inflorescence terminal, umbellate or shortly racemose, 2- or 3-flowered; rachis ca. 3 mm. Pedicel 1–1.5 cm, scaly, densely hairy; calyx 0.5–1 mm, scaly, densely hispid; corolla broadly funnelform-campanulate, pale purple, rose red or white, 2.5–3.5 cm, outer surface scaly, tube hispid; stamens unequal, some longer than corolla; filaments densely pubescent below; ovary 5-locular, densely scaly, hispid; style longer than corolla, usually glabrous, rarely pubescent at base. Capsule cylindrical,

10–15 mm, scaly, hispid, rarely without hairs. Fl. May–Jun, fr. Sep.

- Forests, thickets; 1600–3700 m. W Sichuan.

*Rhododendron ×lochmium* I. B. Balfour (Notes Roy. Bot. Gard. Edinburgh 11: 90. 1919) was described from cultivated material derived from seed of *R. trichanthum* collected in Sichuan. It was considered to be a hybrid between *R. trichanthum* and, most probably, *R. davidsoniana* by Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 80. 1980).

*Rhododendron ×trichophorum* I. B. Balfour (Notes Roy. Bot. Gard. Edinburgh 12: 173. 1920), described from Sichuan, was considered to be a hybrid between *R. trichanthum* and *R. augustinii* by Cullen (loc. cit.: 75).

**46. *Rhododendron bivelatum*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 10: 85. 1917.

双被杜鹃 shuang bei du juan

Shrubs; young shoots short, densely scaly, pubescent. Petiole 3–5 mm, scaly and pubescent, sometimes sparsely hispid; leaf blade obovate or elliptic, 3–3.8 × 1.5–2 cm; base obtuse; apex broad, blunt or rounded, apiculate; abaxial surface scales to 1 × their own diameter apart, midrib and lateral veins pubescent; adaxial surface without scales, midrib pubescent in lower half. Inflorescence terminal, shortly racemose, 2- or 3-flowered; rachis ca. 2 mm, scaly and pubescent. Pedicel 0.7–1 cm, scaly, pubescent; calyx lobes 5, 1–1.5 mm, rounded or triangular, scaly, sometimes also pubescent; corolla broadly funnelform-campanulate, rose red, ca. 2 cm, outer surface scaly, without hairs; stamens unequal, 1.6–2.1 cm; filaments glabrous; ovary 5-locular, densely scaly, apex with tufted hairs; style slender, long, glabrous. Capsule not known.

- Dry slopes; 800–900 m. NE Yunnan.

**47. *Rhododendron guanganense*** R. C. Fang, Acta Bot. Yunnan. 4: 254. 1982.

广南杜鹃 guang nan du juan

Shrubs or small trees, 8–10 m tall; young shoots brown, sparsely scaly. Petiole slender, 5–7 mm, scaly; leaf blade ovate, 2.5–5.5 × 1–2.3 cm; base broadly cuneate to rounded; apex acuminate, apiculate; abaxial surface scales 1–3 × their own dia-

meter apart, all similar, midrib pubescent; adaxial surface sparsely scaly, these soon lost, pubescent along midrib; lateral veins 7-paired, thin, flat above and slightly raised below. Inflorescence terminal, shortly racemose, 4-flowered; rachis ca. 3 mm. Pedicel thin, 0.3–0.6 cm, with small scales; calyx rimlike, or undulate and 5-lobed, small, scaly; corolla broadly funnel-form-campanulate, 5-lobed to the middle, white, 1.5–1.8 cm, outer surface scaly; lobes oblong; stamens 10, unequal, shorter than corolla; filaments puberulent at base; ovary densely scaly; style slightly longer than corolla, glabrous. Capsule not known. Fl. Mar.

- Rocky mountains; ca. 1500 m. SE Yunnan.

**48. *Rhododendron augustinii*** Hemsley, J. Linn. Soc., Bot. 26: 19. 1889.

毛肋杜鹃 mao lei du juan

Shrubs, 1–5 m tall; young shoots scaly, densely villous and pubescent or glabrous. Petiole 3–5(–10) mm, densely hispid and pubescent or glabrous; leaf blade elliptic, oblong or oblong-lanceolate, 3–7 × 1–3.5 cm; base cuneate to rounded; apex acuminate to acute, apiculate; abaxial surface scales (1–)1.5–5 × their own diameter apart, unequal, densely yellowish white-pubescent along lower half of midrib, mature leaves less hairy; adaxial surface scales absent or sparse to dense, densely or sparsely pubescent, with filiform-acicular hairs along midrib. Inflorescence terminal, umbellate, 2–6-flowered; rachis ca. 5 mm, glabrous. Pedicel 0.8–1.5 cm, sparsely scaly, pubescent or glabrous; calyx lobes 0.5–2 mm, rounded or triangular, densely scaly, densely pubescent or glabrous; corolla broadly funnel-form-campanulate, 5-lobed to middle, blue to lavender, sometimes pale pinkish purple or white, 3–3.5 cm, outer surface glandular scaly or not, glabrous or pubescent at base; lobes oblong; stamens unequal, 2.5–3.5 cm, longer than corolla; filaments densely villous below; ovary 5-locular, densely scaly; style longer than corolla, glabrous or pubescent at base. Capsule cylindrical; base oblique, 10–20 mm, densely scaly. Fl. Apr–May, fr. Jul–Aug.

- Forests, thickets, rocks on slopes; 1000–3400(–4200) m. Gansu, Hubei, Shaanxi, Sichuan, Yunnan.

- 1a. Leaf midrib abaxially with indumentum extending from petiole, scales 1.5–2 × their own diameter apart; adaxial leaf surface with filiform-acicular hairs on veins ..... 48a. subsp. *augustinii*
- 1b. Leaf midrib abaxially glabrous, scales (1–)2–5 × their own diameter apart; adaxial leaf surface without filiform-acicular hairs ..... 48b. subsp. *chasmanthum*

**48a. *Rhododendron augustinii*** subsp. *augustinii*

毛肋杜鹃(原亚种) mao lei du juan (yuan ya zhong)

*Rhododendron augustinii* var. *yui* W. P. Fang; *R. vilmorianum* I. B. Balfour.

Young shoots densely villous and pubescent. Petiole densely hispid and pubescent; abaxial leaf surface scales 1.5–2 × their own diameter apart, indumentum of petiole extending

along midrib, adaxial leaf surface with filiform-acicular hairs on veins; corolla blue to lavender; style glabrous or pubescent at base.

- Forests in valleys, forests or thickets on slopes, rocks on slopes; 1000–2100 m. Hubei, Shaanxi, Sichuan.

**48b. *Rhododendron augustinii*** subsp. *chasmanthum* (Diels) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 109. 1978.

张口杜鹃 zhang kou du juan

*Rhododendron chasmanthum* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 212. 1912; *R. augustinii* var. *chasmanthum* (Diels) R. C. Fang; *R. augustinii* f. *grandifolium* Franchet; *R. augustinii* f. *hardyi* (Davidian) R. C. Fang; *R. augustinii* subsp. *hardyi* (Davidian) Cullen; *R. augustinii* f. *rubrum* (Davidian) R. C. Fang; *R. augustinii* subsp. *rubrum* (Davidian) Cullen; *R. augustinii* var. *rubrum* Davidian; *R. augustinii* f. *subglabrum* Franchet; *R. bergii* Davidian; *R. chasmanthoides* I. B. Balfour & Forrest; *R. hardyi* Davidian; *R. hirsuticostatum* Handel-Mazzetti.

Less hairy on all parts; young shoots glabrous. Petiole often glabrous; abaxial leaf surface scales (1–)2–5 × their own diameter apart, otherwise often glabrous; adaxial surface without filiform-acicular hairs; corolla white, pinkish purple or lavender to blue; style base often glabrous, rarely pubescent.

- Evergreen broad-leaved forests, mixed forests on valley sides, *Abies* and other coniferous forests, thickets on rocky mountains; 1700–3400(–4200) m. Gansu, Sichuan, Yunnan.

In FRPS (57(1): 65. 1999) both *Rhododendron augustinii* f. *hardyi* and f. *rubrum* are mentioned. The first has leaves deciduous and corollas white with brownish spots. The second has petioles with loriform and filiform-acicular hairs and corollas pinkish purple. These two entities are clearly distinct in cultivation, but are considered to have a dubious status in the wild (see Cullen, Notes Roy. Bot. Gard. Edinburgh 39: 73–74. 1980).

**49. *Rhododendron brachypodum*** W. P. Fang & P. S. Liu, Bull. Bot. Res., Harbin 2(2): 92. 1982.

短梗杜鹃 duan geng du juan

Shrubs, ca. 4 m tall; old branches nearly glabrous; young shoots sparsely pubescent and glandular. Petiole 5–7 mm, sparsely pubescent; leaf blade papery, lanceolate or oblong-lanceolate, rarely oblong-elliptic, 7–10 × 2.5–3 cm; base cuneate to obtuse; apex acuminate to acute; abaxial surface scales 3–4 × their own diameter apart, pale yellow, sparsely pubescent, densely hispid along veins; adaxial surface deep green, sparsely pubescent. Inflorescence terminal, umbellate, 3–5-flowered. Pedicel 0.8–1.4 cm, densely scaly, sparsely glandular; calyx reduced to a rim or unequally lobed, 1–2 mm; corolla funnel-form-campanulate, pale green, 2.5–3 cm, outer surface sparsely scaly, inner surface glabrous; lobes elliptic, ca. 1.5 cm; stamens 10, unequal, 2–3 cm, longer than corolla; filaments pubescent below, anthers purple; ovary densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 16–18 mm.

- 1000–1500 m. Sichuan.

**50. *Rhododendron lutescens*** Franchet, Bull. Soc. Bot. France 33: 235. 1886.

黄花杜鹃 huang hua du juan

*Rhododendron blinii* H. Léveillé; *R. costulatum* Franchet; *R. lemeei* H. Léveillé.

Shrubs, 1–3 m tall; young shoots sparsely scaly. Petiole 5–9 mm, sparsely scaly; leaf blade papery, lanceolate, oblong-lanceolate or ovate-lanceolate, 4–9 × 1.5–2.5 cm; base broadly cuneate to rounded; apex acuminate, apiculate; abaxial surface scales 5.5–6 × their own diameter apart, yellow or brown; adaxial surface sparsely scaly; midrib and lateral veins slender; lateral veins 12-paired, inconspicuous on both surfaces. Inflorescence terminal or axillary, 1–3-flowered. Pedicel 0.4–1.5 cm, scaly; calyx undeveloped, undulate, 5-lobed or rimlike, 0.5–1 mm; corolla broadly funnelform-campanulate, 5-lobed to the middle, yellow, 2–2.5 cm, outer surface sparsely scaly and densely pubescent; lobes oblong; stamens 10, unequal, long ones longer than corolla, with fewer hairs, shorter stamens with filament base densely villous; ovary 5-locular, densely scaly; style glabrous. Capsule cylindrical, ca. 10 mm. Fl. Mar–Apr.

• Wet areas in mixed forests, thickets on limestone slopes; 1700–2000 m. Guizhou, W Sichuan, Yunnan.

**51. *Rhododendron wongii*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 117. 1910.

康南杜鹃 kang nan du juan

Shrubs, 0.6–2 m tall; young shoots densely scaly, otherwise glabrous. Petiole 3–5 mm, scaly, glabrous; leaf blade leathery, oblong, elliptic or oblong-elliptic, 1.5–3 × 1–2 cm; base rounded; apex acute or obtuse, apiculate; abaxial surface gray-white or pale green, scales nearly contiguous to 0.5 × their own diameter apart, pale brown or deep brown; adaxial surface deep or pale green, scaly. Inflorescence terminal, umbellate or shortly racemose, 3-flowered; rachis 0.5–1 mm. Pedicel 0.4–1 cm, scaly; calyx 5-lobed, 0.5–1 mm, scaly; corolla funnelform-campanulate, creamy yellow or yellow, 1.6–2.2 cm, outer surface not scaly, base pubescent or not; stamens unequal, 1.5–2 cm, longer than corolla; filaments pubescent below; ovary 5-locular, densely scaly; style longer than corolla, glabrous or pubescent at base. Capsule cylindrical, 8–10 mm. Fl. May–Jun.

• Forests, thickets; 3200–3700 m. W Sichuan.

**52. *Rhododendron ambiguum*** Hemsley, Bot. Mag. 137: t. 8400. 1911.

问客杜鹃 wen ke du juan

*Rhododendron chengshienianum* W. P. Fang.

Shrubs, 1–3 m tall; young shoots thin, densely glandular-scaly. Petiole 6–10 mm, densely glandular-scaly; leaf blade leathery, elliptic, ovate-lanceolate or oblong, 4–8 × 1.8–3 cm; base broadly cuneate to obtuse; apex acuminate, acute or obtuse, apiculate; abaxial surface gray-green, scales to 1 × their own diameter apart, unequal, yellowish brown or brown; adaxial surface scaly, young leaves with midrib hairy or not. Inflorescence terminal, rarely subterminal, umbellate or shortly racemose, 3–4(–7)-flowered; rachis 2–4 mm. Pedicel 0.5–1 cm, scaly; calyx rimlike or undulate, 0.5–1 mm, scaly; corolla broadly funnelform-campanulate, yellow or pale yellow, or pale

greenish yellow, inside with yellowish green markings and pubescent, 3–3.5 cm, outer surface scaly; stamens unequal, 1.8–4.5 cm; filaments densely pubescent below; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 6–15 mm. Fl. May–Jun, fr. Sep–Oct.

• Forests, thickets; 2300–3300(–4500) m. C and W Sichuan.

Geng et al. (in Acta Phytotax. Sin. 41: 493. 2003) proposed that *Rhododendron ambiguum* should be treated as a synonym of *R. wongii*. The holotype specimen of *R. wongii* is reputed to be very poor and may be depauperate. There is evidently little to separate these two species.

**53. *Rhododendron triflorum*** J. D. Hooker, Rhododend. Sikkim-Himalaya 2: t. 19. 1851.

三花杜鹃 san hua du juan

Shrubs or rarely small trees, often evergreen, sometimes semievergreen, 1–4 m tall; young shoots scaly. Petiole 4–9 mm, scaly; leaf blade ovate, oblong, ovate-lanceolate, or oblong-lanceolate, 2.5–6.5 × 1.5–2.5 cm; base rounded or cordate; apex acuminate, acute or obtuse, apiculate; abaxial surface gray white or pale green, scales to 1 × their own diameter apart, all similar, ± rimless; adaxial surface without scales. Inflorescence terminal, shortly racemose, 2–5(or more)-flowered; rachis 3–5 mm, scaly. Pedicel 0.6–1.6 cm, erect and ca. 1.2 cm in fruit, scaly; calyx lobes rounded, ovate or triangular, 0.5–1 mm, densely scaly; corolla broadly funnelform-campanulate, pale yellow, sometimes with lobes tinged pink, inside with brown spots, 2–3.3 cm, outer surface scaly, pubescent or without hairs; stamens unequal, 1.2–2.8 cm, longer than corolla; filaments villous; ovary 5-locular, densely scaly; style long, glabrous. Capsule cylindrical, 7–12 mm. Fl. May–Jun, fr. Jul–Aug.

Forests, thickets; 2500–3700 m. S Xizang, WC Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim].

1a. Inflorescence 2–3(–4)-flowered ..... 53a. subsp. *triflorum*

1b. Inflorescence 4–5- or more flowered ..... 53b. subsp. *multiflorum*

**53a. *Rhododendron triflorum* subsp. *triflorum***

三花杜鹃(原亚种) san hua du juan (yuan ya zhong)

Inflorescence 2–3(–4)-flowered. Fl. Apr–May.

*Abies*, *Picea*, *Pinus*, or *Quercus* forests, thickets; 2500–3700 m. S Xizang [Bhutan, India, Myanmar, Nepal, Sikkim].

**53b. *Rhododendron triflorum* subsp. *multiflorum*** R. C. Fang, Acta Bot. Yunnan. 4: 254. 1982.

云南三花杜鹃 yun nan san hua du juan

Inflorescence 4–5- or more flowered. Fl. Apr.

• *Rhododendron* forests, mixed forests, mossy forests, *Quercus* thickets; 2500–3000 m. WC Yunnan.

**54. *Rhododendron zaleucum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 163. 1917.

白面杜鹃 bai mian du juan

Shrubs or small trees, 1–3(–6) m tall; young shoots sparsely scaly. Petiole 7–13 mm, sparsely brown-scaly; leaf blade elliptic, ovate-lanceolate, or lanceolate, 4–7 × 1–2.5 cm; base

cuneate to rounded; apex acute to acuminate, apiculate; abaxial surface pinkish white, papillate, scales 1.5–4 × their own diameter apart, unequal, yellow, glabrous or pubescent, at least along midrib; adaxial surface without scales, sparsely pubescent along midrib when young. Inflorescence terminal, shortly racemose, 3–5-flowered; rachis 2–5 mm, scaly, otherwise glabrous, rarely pubescent. Pedicel 1–1.5 cm, sparsely scaly; calyx rimlike or 5-lobed; lobes ca. 1 mm, rounded or ovate-triangular, scaly, glandular; corolla broadly funnelform-campanulate, 5-lobed to the middle, white to pink, 3–4 cm, outer surface densely glandular scaly, tube sometimes pubescent; lobes rounded-ovate; stamens unequal, 1.3–3.3 cm, longer than corolla; filaments at base spreading-pubescent; ovary 5-locular, densely scaly; style long, glabrous or pubescent at base. Capsule cylindrical, 8–15 mm. Fl. Apr–Jul, fr. Jul–Aug.

Conifer-*Rhododendron* forests, thickets on slopes; 2800–3400 m. Yunnan [Myanmar].

- 1a. Abaxial leaf surface glabrous; style glabrous or pubescent at base ..... 54a. var. *zaleucum*
- 1b. Abaxial leaf surface pubescent, at least along midrib; style glabrous ..... 54b. var. *pubifolium*

**54a. *Rhododendron zaleucum* var. *zaleucum***

白面杜鹃(原变种) bai mian du juan (yuan bian zhong)

*Rhododendron erileucum* I. B. Balfour & Forrest.

Leaf blade abaxial surface with scales only. Style base glabrous or pubescent.

Conifer-*Rhododendron* forests in high mountains, *Rhododendron* thickets on rocky slopes, thickets on slopes; 2800–3400 m. Yunnan [Myanmar].

**54b. *Rhododendron zaleucum* var. *pubifolium* R. C. Fang, Acta Bot. Yunnan. 4: 255. 1982.**

毛叶白面杜鹃 mao ye bai mian du juan

Leaf blade abaxial surface pubescent, at least along midrib. Style glabrous.

*Abies-Picea-Rhododendron* forests; ca. 3100 m. N Yunnan [Myanmar].

**55. *Rhododendron davidsonianum* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 515. 1913.**

凹叶杜鹃 ao ye du juan

*Rhododendron charianthum* Hutchinson.

Shrubs, 1–3 m tall; young shoots sparsely or rarely densely scaly, otherwise glabrous or pubescent. Petiole 3–5 mm, scaly, pubescent; leaf blade lanceolate or oblong, 2.5–6 × 1–2 cm; base narrower or obtuse, V-shaped; apex acute, apiculate; abaxial surface scales 1–4 × their own diameter apart or contiguous, unequal, yellowish brown; adaxial surface deep or fresh green, sparsely scaly, glabrous or pubescent along midrib. Inflorescence terminal or subterminal, shortly racemose, 3–6-flowered; rachis 2–4 mm. Pedicel 1–1.5 cm, sparsely scaly, pubescent; calyx rimlike or 5-lobed, 0.5–1 mm, scaly; corolla broadly funnelform-campanulate, pale purplish white or rosy red, with red or yellow spots inside, 2.5–3 cm, outer surface

scaly or not; stamens unequal, long ones longer than corolla; filaments pubescent below; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 10–13 mm. Fl. Apr–May, fr. Sep–Oct.

• Coniferous forests, open areas in forests, thickets; 1500–2800(–3600) m. Sichuan.

**56. *Rhododendron rigidum* Franchet, Bull. Soc. Bot. France 33: 233. 1886.**

基毛杜鹃 ji mao du juan

*Rhododendron caeruleum* H. Léveillé; *R. eriandrum* H. Léveillé ex Hutchinson; *R. hesperium* I. B. Balfour & Forrest; *R. racemosum* Franchet var. *rigidum* (Franchet) Rehnelt; *R. rarosquamum* I. B. Balfour; *R. syncanthum* I. B. Balfour & W. W. Smith.

Shrubs, rarely small trees, 1–2(–10) m tall; old branches glabrous; young shoots with scales absent or sparse, sometimes also pubescent. Petiole 2–12 mm, scales sparse or absent, otherwise glabrous or rarely pubescent; leaf blade elliptic, oblong elliptic, oblong-lanceolate or oblanceolate, 2.5–6.8 × 1–3.2 cm; base narrow or rounded; apex obtuse, acute, or rounded, apiculate; abaxial surface gray green, scales (2–)4–8 × their own diameter apart, or contiguous, unequal; adaxial surface brownish green, sparsely scaly or absent, sometimes also pubescent along midrib. Inflorescence terminal or subterminal, shortly racemose, 2–6-flowered; rachis 2–4 mm. Pedicel 0.5–2 cm, not scaly or sparsely scaly and pubescent; calyx rimlike or 5-lobed, 0.5–1 mm, scales present or absent; corolla broadly funnelform-campanulate, pale purplish to white or deep reddish purple, with greenish brown or purple spots within, 1.8–3 cm, outer surface not scaly, rarely scaly; stamens unequal, long ones longer than corolla; filaments densely pubescent at base; ovary 5-locular, densely scaly, rarely pubescent on top; style longer than corolla, glabrous. Capsule cylindrical, 8–10 mm.

• Forest margins, thickets; 2000–3400 m. Sichuan, Yunnan.

*Rhododendron bodinieri* Franchet (J. Bot. (Morot) 12: 257. 1898), described from S Yunnan, is intermediate between, and may be a hybrid between, *R. rigidum* and *R. siderophyllum* (see Cullen, Notes Roy. Bot. Gard. Edinburgh 39: 69. 1980).

**57. *Rhododendron yunnanense* Franchet, Bull. Soc. Bot. France 33: 232. 1886.**

云南杜鹃 yun nan du juan

*Rhododendron aechmophyllum* I. B. Balfour & Forrest; *R. chartophyllum* Franchet; *R. chartophyllum* f. *praecox* Diels; *R. hormophorum* I. B. Balfour & Forrest; *R. shaanxiense* W. P. Fang & Z. J. Zhao; *R. suberosum* I. B. Balfour & Forrest.

Shrubs, rarely small trees, deciduous, semievergreen or evergreen, 1–2(–4) m tall; old branches glabrous; young shoots sparsely scaly, otherwise glabrous or pubescent. Petiole 3–7 mm, sparsely scaly, pubescent or sometimes hispid; leaf blade oblong, lanceolate, oblong-lanceolate or obovate, 2.5–7 × 0.8–3 cm; base narrow to cuneate; apex acuminate or acute, apiculate; abaxial surface green or gray green, scales 2–6 × their own diameter unequal; adaxial surface not or sparsely scaly, sometimes pubescent along midrib. Inflorescence terminal or subterminal,

shortly racemose or umbellate, 3–6-flowered; rachis 2–3 mm. Pedicel 0.5–2(–3) cm, not or sparsely scaly; calyx rimlike or 5-lobed, 0.5–1 mm, scaly or not; corolla broadly funnellform-campanulate, white, pale red or pale purplish, inside with red, brownish red, yellow or yellowish green spots, 1.8–3.5 cm, outer surface sparsely scaly or not; stamens unequal, long ones longer than corolla; filaments ± pubescent below; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 6–20 mm. Fl. Apr–Jun.

Mixed forests on slopes, *Abies-Picea* or *Pinus-Quercus* forest margins, thickets; (1600–)2200–3600(–4000) m. W Guizhou, S Shaanxi, W Sichuan, Xizang, Yunnan [Myanmar].

**58. *Rhododendron pleistanthum*** E. H. Wilding, *Rhododendrons Names Addresses*, 73. 1923.

极多花杜鹃 ji duo hua du juan

Shrubs, evergreen to deciduous, 0.6–4 m; young shoots scaly, puberulent. Petiole lacking bristles; leaf blade narrowly elliptic, 3.5–6(–7.3) × 1.3–2.3 cm; base cuneate; margin without ciliae or bristles; apex acute; abaxial surface scales 3–5 × their own diameter apart, yellow or brown; adaxial surface ± without scales. Inflorescence lax. Pedicel (8–)10–18 mm, scaly, sometimes puberulent; calyx minute, discoid or undulate, sometimes ciliate; corolla broadly funnel-campanulate, white, sometimes flushed pink, to lilac, often with red or yellow flecks, to 3 cm. Capsule 11–18 mm. Fl. Apr–May.

• Forests, forest margins, rarely meadows and cliffs; 2000–4500 m. Sichuan, Yunnan.

This species is close to *Rhododendron yunnanense*, and has been treated by recent Chinese authors (e.g., in FRPS 57(1): 73. 1999) as a synonym of it. However, *R. pleistanthum* can be distinguished by the puberulent young growth and by the lack of cilia or bristles on the young leaves and petioles.

**59. *Rhododendron gemmiferum*** M. N. Philipson & Philipson, *Notes Roy. Bot. Gard. Edinburgh* 33: 493. 1975.

大芽杜鹃 da ya du juan

Shrubs, ca. 0.6 m tall; many-branched; young shoots grooved, with yellow scales. Leaf blade elliptic to broadly elliptic, 1.6–2.6 × 0.5–1.2 cm; base cuneate; apex rounded to acute, apiculate; abaxial surface gray-brown or honey yellow, scales contiguous; adaxial surface deep green, sparsely scaly, midrib and lateral veins raised abaxially, concave adaxially. Inflorescence terminal, umbellate, 4-flowered. Pedicel ca. 1.2 cm, scaly; calyx 1–1.5 mm, scaly at base; corolla broadly funnellform-campanulate, deep reddish purple to pale purple, tube 4–5.5 mm; outer surface not scaly; lobes 0.9–1 cm; stamens 10, slightly longer than corolla; filaments puberulent at base; ovary densely scaly; style longer than stamens; base pubescent. Capsule cylindrical, ca. 6 mm. Fl. Jun.

• Thickets, rocky slopes; 3300–3700(–4300) m. NW Yunnan.

**60. *Rhododendron searsiae*** Rehder & E. H. Wilson in Sargent, *Pl. Wilson*. 1: 522. 1913.

绿点杜鹃 lü dian du juan

Shrubs, 1.5–5 m tall; young shoots densely scaly. Petiole

3–10 mm, densely scaly; leaf blade leathery, lanceolate, oblong-lanceolate or oblanceolate, 2.5–8 × 1.2–2.5 cm; base narrower or obtuse; apex acuminate to acute, apiculate; abaxial surface grayish green, scales 0.5–1 × their own diameter apart, unequal, yellowish brown; adaxial surface deep or pale green, sparsely scaly, sometimes pubescent along midrib. Inflorescence terminal, rarely subterminal, shortly racemose, 4–8-flowered; rachis 3–6 mm. Pedicel 0.5–1.6 cm, densely scaly; calyx unequally 5-lobed; lobes 0.5–5 mm, oblong or triangular, with 2 longer ones; corolla broadly funnellform-campanulate, white or pale reddish purple, inside with deep green spots, 2.5–3.4 cm, outer surface not scaly or scaly only on tube; stamens unequal, 1.1–3.4 cm, longer than corolla; filaments densely pubescent below; ovary 5-locular, densely scaly; style long, scales absent, glabrous or rarely pubescent at base. Capsule cylindrical, 10–14 mm. Fl. May–Jun, fr. Sep–Oct.

• Forests, thickets; 2300–3000 m. Sichuan.

**61. *Rhododendron concinnum*** Hemsley, *J. Linn. Soc., Bot.* 26: 21. 1889.

秀雅杜鹃 xiu ya du juan

*Rhododendron apiculatum* Rehder & E. H. Wilson; *R. benthamianum* Hemsley; *R. concinnum* var. *benthamianum* (Hemsley) Davidian; *R. concinnum* f. *laetevirens* Cowan; *R. concinnum* var. *lepidanthum* (Rehder & E. H. Wilson) Rehder; *R. concinnum* var. *pseudoyanthinum* (I. B. Balfour ex Hutchinson) Davidian; *R. coombense* Hemsley; *R. pseudoyanthinum* I. B. Balfour ex Hutchinson; *R. yanthinum* Bureau & Franchet; *R. yanthinum* var. *lepidanthum* Rehder & E. H. Wilson.

Shrubs, (0.4–)1.5–3 m tall; young shoots scaly. Petiole 5–13 mm, densely scaly; leaf blade oblong, elliptic, ovate, oblong-lanceolate or ovate-lanceolate, 2.5–7.5 × 1.5–3.5 cm; apex acuminate to acute, apiculate; abaxial surface pinkish green or brown, scales 0.5(–1) × their own diameter apart or contiguous, unequal, with obvious margin; adaxial surface ± scaly, sometimes pubescent along midrib. Inflorescence terminal or subterminal, umbellate, 2–5-flowered. Pedicel 0.4–1.8 cm, densely scaly; calyx 5-lobed; lobes 0.8–1.5(–6) mm, rounded, triangular or oblong, sometimes undeveloped and rim-like; corolla broadly funnellform-campanulate, pale or deep purplish red, inside with or without brownish red spots, 1.5–3.2 cm, outer surface ± scaly, glabrous or sparsely pubescent at base; stamens unequal, as long as corolla; filaments pubescent below; ovary 5-locular, densely scaly; style slightly longer than corolla, usually glabrous, rarely pubescent at base. Capsule cylindrical, 10–15 mm. Fl. Apr–Jun, fr. Sep–Oct.

• *Abies-Rhododendron* forests, thickets on slopes; 2300–3000(–3800) m. Guizhou, Henan, Hubei, Shaanxi, Sichuan, Yunnan.

It is believed that *Rhododendron hutchinsonianum* W. P. Fang (*Acta Phytotax. Sin.* 2: 83. 1953), described from Xizang, is a variant of *R. concinnum* (see Cullen, *Notes Roy. Bot. Gard. Edinburgh* 39: 76. 1980).

**62. *Rhododendron amesiae*** Rehder & E. H. Wilson in Sargent, *Pl. Wilson*. 1: 523. 1913.

紫花杜鹃 zi hua du juan

Shrubs, 2–4 m tall; young shoots densely glandular-scaly, hispid or not. Petiole 5–10 mm, scaly and hispid; leaf blade leathery, ovate, ovate-oblong or elliptic-oblong, 3–8 × 1.5–3.5 cm; base rounded to cuneate; apex acute, apiculate; abaxial surface pale green, scales 0.5–1 × their own diameter apart, unequal, yellowish brown or brown; adaxial surface deep green, sparsely scaly, pubescent along midrib. Inflorescence terminal, shortly racemose, 2–5-flowered; rachis 2–3 mm. Pedicel 1–1.5 cm, scaly, hispid or not; calyx lobes 0.5–1 mm, rounded or triangular, densely scaly; corolla broadly funnelform-campanulate, purple or deep purplish red, inside with deep red spots, 3–4 cm, outer surface sparsely scaly, glabrous or with tube pubescent; stamens unequal, 2–3.6 cm, longer than corolla; filaments pubescent below; ovary 5-locular, densely scaly; style long, glabrous. Capsule cylindrical, 12–18 mm. Fl. May–Jun, fr. Sep–Oct.

- Forests; 2200–3000 m. W Sichuan.

**63. *Rhododendron oreotrepes*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 201. 1914.

山育杜鹃 shan yu du juan

*Rhododendron artosquameum* I. B. Balfour & Forrest; *R. cardioeides* I. B. Balfour & Forrest; *R. depile* I. B. Balfour & Forrest; *R. exquisitum* Hutchinson (1932), not T. L. Ming (1981); *R. hypotrichotum* I. B. Balfour & Forrest; *R. phaeochlorum* I. B. Balfour & Forrest; *R. pubigerum* I. B. Balfour & Forrest; *R. siderophylloides* Hutchinson; *R. timetum* I. B. Balfour & Forrest; *R. trichopodium* I. B. Balfour & Forrest.

Shrubs, 1–4 m tall; young shoots deep purplish red, sparsely scaly, otherwise glabrous or pubescent. Petiole pinkish purple, 7–13 mm, sparsely scaly, sometimes pubescent; leaf blade elliptic, oblong or ovate, 1.8–6 × 1.4–3.5 cm; base rounded to cordate, rarely broadly cuneate; apex obtuse or rounded, apiculate; abaxial surface pinkish green or green, scales contiguous, or less than (rarely more than) their own diameter apart, all similar, yellowish brown or brown; adaxial surface without scales. Inflorescence terminal or subterminal, shortly racemose, 3–5(–10)-flowered; rachis 1–8 mm. Pedicel purplish red, 0.5–2 cm, sparsely scaly; calyx undulately 5-lobed or annular, ca. 1.5 mm; corolla broadly funnelform-campanulate, 5-lobed to the middle, pale purple or pale red or deep purplish red, 1.8–3 cm, outer surface glabrous, lobes ovate; stamens unequal, long ones as long as or slightly longer than corolla; filaments spreading-pubescent below; ovary 5-locular, densely scaly; style glabrous. Capsule cylindrical, 8–13 mm. Fl. May–Jul.

Evergreen-deciduous mixed forests, *Abies* or *Larix* forest margins, *Quercus-Rhododendron* thickets; (2100–)3000–3700 m. SW Sichuan, SE Xizang, N Yunnan [Myanmar].

**64. *Rhododendron tatsienense*** Franchet, J. Bot. (Morot) 9: 394. 1895.

硬叶杜鹃 ying ye du juan

Shrubs, 1–3 m tall; young shoots deep purplish red, densely or sparsely scaly, otherwise glabrous or rarely pubescent. Petiole 40–80 mm, sparsely scaly; leaf blade elliptic, oblong-ovate or elliptic-lanceolate, 2–7 × 1–3 cm; base rounded to cuneate; apex obtuse or acute, apiculate; abaxial surface scales

0.5–1(–2) × their own diameter apart, unequal, brown; adaxial surface densely or sparsely scaly. Inflorescence terminal or subterminal, shortly racemose, 2–4-flowered; rachis 2–3 mm. Pedicel 0.2–0.6(–1) cm, sparsely or densely scaly; calyx rimlike or undulate, 0.5–1 mm, scaly; corolla broadly funnelform-campanulate, pale red or rose-red, 1.2–2.5 cm, outer surface sparsely scaly; stamens unequal, long ones slightly longer than corolla; filaments densely pubescent at base; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 7–14 mm. Fl. Apr–Jun.

- Forests, thickets; 2300–3600 m. N and SW Sichuan, N Yunnan.

- 1a. Young shoots rarely pubescent; calyx and pedicels densely scaly ..... 64a. var. *tatsienense*
- 1b. Young shoots and calyx without hairs; pedicels very sparsely scaly ..... 64b. var. *nudatum*

**64a. *Rhododendron tatsienense* var. *tatsienense***

硬叶杜鹃(原变种) ying ye du juan (yuan bian zhong)

*Rhododendron heishuiense* W. P. Fang; *R. hypophaeum* I. B. Balfour & Forrest; *R. kangdingense* Z. J. Zhao; *R. leilungense* I. B. Balfour & Forrest; *R. stereophyllum* I. B. Balfour & W. W. Smith; *R. tapelouense* H. Léveillé.

Young shoots densely or sparsely scaly, rarely pubescent. Calyx and pedicels densely scaly. Fl. Apr–Jun.

- Coniferous forests, mixed forests, thickets in valleys; 2300–3600 m. N and SW Sichuan, N Yunnan.

**64b. *Rhododendron tatsienense* var. *nudatum*** R. C. Fang, Acta Bot. Yunnan. 4: 256. 1982.

丽江硬叶杜鹃 li jiang ying ye du juan

Young shoots, calyx, and pedicels very sparsely scaly, otherwise glabrous. Fl. Jun.

- *Picea* and *Populus* forests, *Pinus* forests on slopes, thickets; 2800–3600 m. NW Yunnan.

**65. *Rhododendron xichangense*** Z. J. Zhao, Bull. Bot. Res., Harbin 7(3): 60. 1987.

西昌杜鹃 xi chang du juan

Shrubs, 1–2 m tall. First-year shoots spreading, purple, densely scaly. Leaf blade leathery, ovate, 2.5–5 × 0.8–1.8 cm; base cuneate; apex acute; abaxial surface scales 0.5–1 × their own diameter apart, unequal, brown; adaxial surface deep green, sparsely scaly. Inflorescence terminal, umbellate, 2–5-flowered. Pedicel thin, purple, 1.8–2.5 cm, densely scaly; calyx rimlike, ca. 1.5 mm, scaly at base; corolla broadly funnelform-campanulate, white or pink, inside without spots, 1.5–1.8 cm; stamens 10, unequal, 2–2.5 cm, longer than corolla, filaments glabrous or pubescent below; ovary densely scaly; style 2.2–2.7 cm, longer than corolla, glabrous.

- About 2200 m. Sichuan.

Geng et al. (Acta Phytotax. Sin. 41: 492. 2003) proposed that *Rhododendron xichangense* should be treated as a synonym of *R. davidsonianum*. The key character separating these two species is the spacing of the scales on the abaxial surfaces of the leaves. However, the description of *R. davidsonianum* suggests that that species is very variable in

this character, encompassing the range of variation of *R. xichangense*.

**66. *Rhododendron polylepis*** Franchet, Bull. Soc. Bot. France 33: 232. 1886.

多鳞杜鹃 duo lin du juan

*Rhododendron harrovianum* Hemsley.

Shrubs or small trees, 1–6 m tall; young shoots long, densely scaly. Petiole 5–10 mm; leaf blade leathery, oblong, or oblong-lanceolate, 4.5–11 × 1.5–3 cm; base cuneate or broadly cuneate; apex acute or acuminate; abaxial surface scales contiguous or ca. 0.5 × their own diameter apart, unequal, the smaller pale brown, the larger brown, scattered; adaxial surface deep green, scales at first dense, later nearly absent. Inflorescence terminal or rarely subterminal, umbellate or shortly racemose, 3–5-flowered; rachis ca. 2 mm. Pedicel tinged with red, 1–2 cm, densely scaly; calyx lobes 1–2 mm, triangular or undulate; corolla funnelform-campanulate, pale or deep purplish red, inside without spots, or upper lobes with pale yellow spots, 2–3.5 cm, outer surface densely or sparsely scaly; stamens unequal, 1.8–3.8 cm, longer than corolla; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 8–17 mm. Fl. Apr–May, fr. Jun–Aug.

• Forests, thickets; 1500–3300 m. S Gansu, S Shaanxi, N to SW Sichuan.

**67. *Rhododendron siderophyllum*** Franchet, J. Bot. (Morot) 12: 262. 1898.

锈叶杜鹃 xiu ye du juan

*Rhododendron ioanthum* I. B. Balfour; *R. jahandiezii* H. Léveillé; *R. leucandrum* H. Léveillé; *R. obscurum* Franchet ex I. B. Balfour (1922); *R. rubropunctatum* H. Léveillé & Vaniot (1911), not Hayata (1913), nor T. L. Ming (1984).

Shrubs, 1–2(–4) m tall; young shoots brown, densely scaly. Petiole 5–15 mm, densely scaly; leaf blade elliptic or elliptic-lanceolate, 3–7(–11) × 1.2–3.5 cm; base cuneate or rounded; apex acuminate, acute or nearly obtuse; abaxial surface scales 0.5–2 × their own diameter apart, or contiguous small to mid-sized, all similar or slightly unequal, brown, concave; adaxial surface scales dense, concave, glabrous or rarely pubescent along midrib. Inflorescence terminal or subterminal, shortly racemose, 3–5-flowered; rachis 2–4 mm. Pedicel 0.3–1.3 cm, scaly; calyx rimlike or undulate and 5-lobed, densely scaly; corolla tubular funnelform-campanulate, white, pale red, pale purple or rosy red, inside with yellowish green, pale red or pinkish spots or without spots, 1.6–3 cm, outer surface not scaly or sparsely scaly on lobes; stamens unequal, long ones longer than corolla; filaments pubescent or nearly glabrous at base; ovary 5-locular, densely scaly; style longer than corolla, usually glabrous, rarely pubescent at base. Capsule cylindrical, 11–16 mm. Fl. Mar–Jun.

• Mixed forests, coniferous forests on slopes, thickets; (1200–) 1800–3000 m. Guizhou, Sichuan, Yunnan.

*Rhododendron seguinii* H. Léveillé (Repert. Spec. Nov. Regni Veg. 13: 148. 1914) was described from Guizhou. The identity of the type specimen, *J. Cavalerie 1254*, is in doubt as it totally lacks leaves. However, there is indirect evidence that it is related to, or synonymous with, *R. siderophyllum* (see Cullen, Notes Roy. Bot. Gard. Edinburgh 39: 65, 67. 1980).

**6. *Rhododendron* subsect. *Heliolepidia*** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 536. 1949.

亮鳞杜鹃亚组 liang lin du juan ya zu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* ser. *Heliolepidia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 320. 1930 [*“Heliolepis”*].

Shrubs or small trees, 0.9–5(–10) m tall; young shoots scaly, otherwise glabrous or pubescent. Leaves fragrant when crushed; leaf blade leathery; abaxial surface scales dense, yellow to brown, large or small, unequal or all similar; adaxial surface usually scaly, otherwise glabrous or pubescent along midrib. Inflorescence terminal, umbellate, 2–7(to many)-flowered. Calyx undeveloped, 1–2 mm, 5-lobed or undulate; corolla broadly funnelform-campanulate or campanulate, often lobed to the middle, pale red or deep purplish red, less often white, often with darker spots, outer surface scaly, otherwise glabrous or sometimes pubescent; stamens 10, unequal; ovary 5(or 6)-locular; style erect, not scaly, glabrous or pubescent at base. Capsule cylindrical, 7–18 mm; seed wingless or with finlike structures.

Five species: China, Myanmar; five species (three endemic) in China.

- 1a. Axillary bud bracts persistent; leaf blade 1.3–5 cm; corolla 1.3–2.5 cm ..... 68. *R. bracteatum*
- 1b. Axillary bud bracts soon deciduous; leaf blade 3.5–12.5 cm; corolla 2.2–3.5 cm.
  - 2a. Young shoots, petiole and midrib pubescent, or petioles hispid.
    - 3a. Young shoots pubescent; corolla puberulous outside along dorsal suture; leaf abaxial surface with scales ca. 1.5 × their own diameter apart ..... 69. *R. invictum*
    - 3b. Young shoots glabrous; corolla outside without hairs; leaf abaxial surface with scales less than their own diameter apart or contiguous ..... 70. *R. hirsutipetiolatum*
  - 2b. Young shoots, petiole and leaf blade glabrous.
    - 4a. Leaf blade 5–12.5 cm, abaxial surface with scales uniformly large, pale yellowish or grayish white, 0.5–2 × their own diameter apart ..... 71. *R. heliolepis*
    - 4b. Leaf blade 3.5–8 cm, abaxial surface with scales dimorphic, rust-red; small scales overlapping or half their own diameter apart, large scales along central veins ..... 72. *R. rubiginosum*

**68. *Rhododendron bracteatum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 519. 1913.

苞叶杜鹃 bao ye du juan

Shrubs, 0.9–3 m tall; young shoots thin, purple, scaly, pubescent. Petiole 3–12 mm, sparsely scaly; leaf blade thinly leathery, elliptic or oblong, ovate-oblong or ovate-lanceolate, 1.3–5 × 0.9–2.5 cm; base broadly cuneate or rounded; apex acute, apiculate; abaxial surface pale brown or pale yellow, scales 1–4 × their own diameter apart, large, dimorphic, golden, glabrous; adaxial surface deep green or olive-green, scaly, otherwise glabrous. Inflorescence terminal, umbellate, 3–6-flowered. Pedicel slender, 1.3–2.5 cm, sparsely scaly; calyx lobes 5, 1–2 mm, ovate or triangular, sparsely scaly; corolla broadly funnelform-campanulate or campanulate, white or pale red, inside with deep red spots, 1.5–2.5 cm, outer surface scaly, without hairs; stamens 10, unequal, 1.2–2.5 cm; filaments pubescent below; ovary 5-locular, densely scaly; style as long as or slightly shorter than corolla, scales absent, usually glabrous, rarely pubescent at base. Capsule cylindrical, 7–15 mm, densely scaly. Fl. May–Jun, fr. Sep–Oct.

- Forests, cliffs; 2600–3500 m. NW Sichuan.

**69. *Rhododendron invictum*** I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 10: 116. 1917.

绝伦杜鹃 jue lun du juan

Shrubs, evergreen, 1.2–2.2 m tall; young shoots scaly, sparsely pubescent. Petiole 8–10 mm, scaly, sparsely pubescent; leaf blade elliptic or oblong-elliptic, 4–5 × 2–2.5 cm; base cuneate to obtuse; apex obtuse or acute; abaxial surface scales ca. 1.5 × their own diameter apart, dimorphic, golden yellow; adaxial surface deep green, without scales, pubescent along midrib. Inflorescence terminal, umbellate, 2- to many-flowered; rachis 1–2 mm. Pedicel shorter than corolla, 0.6–0.8 cm, scaly, glabrous; calyx 5-lobed; lobes ca. 1 mm, ovate or triangular, scaly abaxially and on margin, pubescent; corolla funnelform-campanulate or campanulate, 5-lobed, purple, 2.2–2.6 × ca. 2.6 cm, outer surface scaly, puberulous along the adaxial suture, otherwise glabrous, inner surface densely pubescent at base; stamens 10, unequal, 1.2–2.5 cm, as long as or slightly longer than corolla; filaments densely villous below; ovary 5-locular, densely scaly, pubescent at apex; style erect, longer than corolla, scales absent, pubescent at base. Capsule ca. 12 × 4 mm, scaly.

- Thickets on high mountains; 2400–2800 m. S Gansu.

**70. *Rhododendron hirsutipetiolatum*** A. L. Chang & R. C. Fang, Notes Roy. Bot. Gard. Edinburgh 41: 162. 1983.

凸脉杜鹃 tu mai du juan

Shrubs, evergreen, to 5 m tall; old branches deep brown; young shoots brown, scaly, otherwise glabrous. Petiole shallowly grooved or flat, 8–12 mm, densely scaly, hispid or pubescent; leaf blade thickly leathery, oblong-elliptic, 6–8 × 2.5–3.2 cm; base cuneate to narrowly obtuse; apex acuminate; abaxial surface scales less than 1 × their own diameter apart, or contiguous small, yellowish brown, with wide margin; adaxial

surface scales dense when young, caducous, midrib pubescent, raised on both surfaces; lateral veins 9-paired, slightly raised above and inconspicuous below. Inflorescence terminal, umbellate, 2–4-flowered. Pedicel stout, 0.8–1.6 cm, densely scaly; calyx rimlike or undulate, small, scales present, dense; corolla long-funnelform-campanulate, lobed to the middle, pale purplish red, inside with purple spots, 2.5–3.5 cm, outer surface densely scaly, lobes broadly ovate; stamens 10, unequal, shorter than corolla; filaments sparsely pubescent or glabrous at base; ovary 5-locular, densely scaly; style as long as corolla or stamens. Capsule not known. Fl. Apr.

- *Abies-Rhododendron* forests; ca. 3400 m. Yunnan.

**71. *Rhododendron heliolepis*** Franchet, Bull. Soc. Bot. France 34: 283. 1887.

亮鳞杜鹃 liang lin du juan

Shrubs or sometimes small trees, evergreen, (1–)2–5(–6) m tall; young shoots stout, densely scaly. Petiole 5–15 mm; leaf blade with a strong oily fragrance, elliptic or elliptic-lanceolate, 5–12 × 1.7–4 cm; base narrow or sometimes rounded; apex acute or acuminate, apiculate; abaxial surface pale green, pale yellowish green or brown, scales 0.5–2 × their own diameter apart, sometimes contiguous, large, all ± similar, thin, flat or concave in center, pale yellowish green or gray-white; adaxial surface deep green or brown, scales dense when young, quickly deciduous. Inflorescence terminal, umbellate, 5–7(–10)-flowered. Pedicel thin, 1–3 cm, densely scaly; calyx undulate; lobes ca. 2 mm, sometimes oblong, densely scaly; corolla campanulate, pink, pale purplish red or rarely white, with purple or brown spots inside, 2.5–3.5 cm, outer surface sparsely or densely scaly sometimes also pubescent; stamens 10, unequal, shorter than corolla; filaments hispid below; ovary 5(or 6)-locular, densely scaly; style shorter than or as long as, rarely longer than stamens, glabrous or pubescent below. Capsule cylindrical, 10–13 mm. Fl. Jul–Aug, fr. Aug–Nov.

Coniferous-broad-leaved mixed forests, *Abies* forest margins, *Rhododendron* thickets, thickets on slopes, wet valleys; 3000–3700(–4000) m. Sichuan, Xizang, Yunnan [Myanmar].

- 1a. Corolla pubescent on outer surface ..... 71b. var. *oporinum*
- 1b. Corolla without hairs on outer surface.
  - 2a. Style glabrous; corolla purplish red, with reddish brown spots inside ..... 71a. var. *heliolepis*
  - 2b. Style pubescent below; corolla pink, pale purplish red or rarely white, with purplish spots inside ..... 71c. var. *fumidum*

**71a. *Rhododendron heliolepis* var. *heliolepis***

亮鳞杜鹃(原变种) liang lin du juan (yuan bian zhong)

*Rhododendron brevistylum* Franchet; *R. heliolepis* var. *brevistylum* (Franchet) Cullen; *R. pholidotum* I. B. Balfour & W. W. Smith; *R. plebeium* I. B. Balfour & W. W. Smith; *R. porrosquamatum* I. B. Balfour & Forrest.

Abaxial leaf surface pale green when dry; adaxial surface deep green. Corolla pink, pale purplish red or rarely white, with



purplish spots inside; outer surface not pubescent; style pubescent below.

Coniferous-broad-leaved mixed forests, *Abies* forest margins, *Rhododendron* thickets; 3000–3700(–4000) m. Sichuan, Xizang, Yunnan [Myanmar].

Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 90. 1980) recognized *Rhododendron heliolepis* var. *brevistylum* as a distinct taxon.

**71b. *Rhododendron heliolepis* var. *oporinum*** (I. B. Balfour & Kingdon Ward) A. L. Chang ex R. C. Fang, Acta Bot. Yunnan. 4: 253. 1982.

毛冠亮鳞杜鹃 mao guan liang lin du juan

*Rhododendron oporinum* I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 10: 129. 1917.

Corolla outer surface pubescent.

Thickets on slopes; ca. 3400 m. Yunnan [Myanmar].

**71c. *Rhododendron heliolepis* var. *fumidum*** (I. B. Balfour & W. W. Smith) R. C. Fang, Acta Bot. Yunnan. 4: 253. 1982.

灰褐亮鳞杜鹃 hui he liang lin du juan

*Rhododendron fumidum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 112. 1917.

Abaxial leaf surface brown when dry; adaxial surface deep brown. Corolla purplish red, with reddish brown spots inside; style glabrous.

• *Rhododendron* thickets, thickets on slopes, wet valleys; 3200–3500 m. NE Yunnan.

**72. *Rhododendron rubiginosum*** Franchet, Bull. Soc. Bot. France 34: 282. 1887.

红棕杜鹃 hong zong du juan

Shrubs or sometimes small trees, evergreen, 1–3(–10) m tall; young shoots stout, brown, scaly. Petiole 5–13 mm, densely scaly; leaf blade elliptic or elliptic-lanceolate or oblong-ovate, 3.5–8 × 1.3–3.5 cm; base cuneate, broadly cuneate to rounded; apex acuminate, sometimes acute; abaxial surface scales dense, unequal rust-brown, glandlike or thin; adaxial surface scales dense when young, caducous. Inflorescence terminal, umbellate, 5–7-flowered. Pedicel 1–2.5 cm, densely scaly; calyx undulate or 5-lobed, small, scales absent except sometimes a few along margin or present and dense; corolla broadly funnelform-campanulate, pale purple to rose-red or pale red, rarely white tinged with pale purple, inside with purplish red or red spots, 2.5–3.5 cm, outer surface sparsely scaly; stamens 10, unequal, slightly longer than corolla; filaments glabrous or pu-

bescent below; ovary 5-locular, densely scaly; style longer than stamens, glabrous or pubescent below. Capsule cylindric, up to 18 mm. Fl. Mar–Jun, fr. Jul–Aug.

*Rhododendron* forests, *Cunninghamia-Quercus* mixed forests, deciduous broad-leaved forests, *Abies-Larix-Picea* forest margins or openings, thickets on slopes; (2500–)2800–3600(–4200) m. Sichuan, Xizang, Yunnan [Myanmar].

- 1a. Filaments glabrous, calyx not scaly outside, or sparsely scaly along margin ..... 72c. var. *leclerei*
- 1b. Filaments pubescent below; calyx densely scaly outside.
  - 2a. Style glabrous ..... 72a. var. *rubiginosum*
  - 2b. Style pubescent below ..... 72b. var. *ptilostylum*

**72a. *Rhododendron rubiginosum* var. *rubiginosum***

红棕杜鹃(原变种) hong zong du juan (yuan bian zhong)

*Rhododendron catapastum* I. B. Balfour & Forrest; *R. desquamatum* I. B. Balfour & Forrest; *R. stenoplastum* I. B. Balfour & Forrest.

Calyx densely scaly; filaments pubescent below; style glabrous.

*Cunninghamia-Quercus* mixed forests, *Abies-Larix-Picea* forest margins or openings, often dominant; (2500–)2800–3500(–4200) m. Sichuan, Xizang, Yunnan [Myanmar].

**72b. *Rhododendron rubiginosum* var. *ptilostylum*** R. C. Fang, Acta Bot. Yunnan. 4: 253. 1982.

毛柱红棕杜鹃 mao zhu hong zong du juan

Calyx densely scaly; filaments pubescent below; style pubescent along lower part.

• *Rhododendron* forests, deciduous broad-leaved forests, *Abies* forest margins, thickets on slopes; 3200–3300 m. Yunnan.

Based on the type and matching specimens (from Haba and Yonning) the cited differences between var. *rubiginosum* and var. *ptilostylum* are not convincing.

**72c. *Rhododendron rubiginosum* var. *leclerei*** (H. Léveillé) R. C. Fang, Acta Bot. Yunnan. 4: 253. 1982.

洁净红棕杜鹃 jie jing hong zong du juan

*Rhododendron leclerei* H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 284. 1913.

Calyx scales absent abaxially, or sparse along margin; filaments glabrous; style glabrous.

• Thickets on slopes; 3200–3600 m. Yunnan.

**7. *Rhododendron* subsect. *Lapponica*** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 535. 1949.

高山杜鹃亚组 gao shan du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Lapponica* Hutchinson in J. B. Stevenson, Sp. Rhodod. 387. 1930 [*“Lapponicum”*].

Small shrubs, erect, cushion-forming, or prostrate, 0.15–1.6(–4) m tall; young shoots often densely brown-scaly. Leaves small. Leaf blade with abaxial surface usually papillose, scales contiguous or nearly so, yellow, brown or gray, sometimes 2-colored; adax-

ial surface densely scaly. Inflorescence 1–7(–15)-flowered; pedicels short; calyx (0.1–)0.5–8(–4.5) mm, 5-lobed, persistent in fruit, scales sometimes absent; corolla usually broadly funnellform, rarely tubular-funnelform, pale to deep lavender to purple, rarely whitish pink, occasionally yellow or blue, outer surface not scaly, sometimes pubescent; stamens (4–)5–10(–12), usually actinomorphic, often shorter than corolla; ovary 5( or 6)-celled; style straight or declinate, glabrous or pubescent at base. Capsule ovoid to cylindrical-ovoid, 2–7(–14) mm. Seed wingless, obscurely finned.

About 40 species: Bhutan, China, Myanmar, Nepal, Russia (Siberia), Sikkim; N Europe (Scandinavia), N North America (Alaska, Canada, Greenland); 40 species (34 endemic) in China.

- 1a. Scales on abaxial leaf surface all the same color.
  - 2a. Scales on abaxial leaf surface discontinuous, not overlapping.
    - 3a. Flowers yellow ..... 84. *R. flavidum*
    - 3b. Flowers purple, pinkish-purple, violet, rose-lavender, lavender to purple-blue, rarely white.
      - 4a. Erect shrubs; calyx lobes shorter than 2.5 mm ..... 87. *R. polycladum*
      - 4b. Tufted shrubs; calyx lobes longer than 2.5 mm.
        - 5a. Inflorescence 1- or 2-flowered; corolla 1.5–1.6 cm; petiole 3–5 mm ..... 112. *R. lungchiense*
        - 5b. Inflorescence (1–)3(–5)-flowered; corolla (0.7–)0.8–1.5(–1.8) cm.
          - 6a. Scales on abaxial leaf surface not opaque, fulvous or amber ..... 85. *R. impeditum*
          - 6b. Scales on abaxial leaf surface opaque, white, pinkish or fawn-brown ..... 86. *R. fastigiatum*
  - 2b. Scales on abaxial leaf surface contiguous or overlapping.
    - 7a. Scales on abaxial leaf surface dark.
      - 8a. Calyx ca. 1 mm.
        - 9a. Stamens and style usually included in corolla tube; corolla usually tubular-funnelform ..... 82. *R. complexum*
        - 9b. Stamens and style usually exerted from corolla tube; corolla usually broadly funnellform ..... 83. *R. tapetiforme*
      - 8b. Calyx (2–)3–4(–6) mm.
        - 10a. Adaxial leaf surface green, densely lepidote, scales amber ..... 79. *R. amundsenianum*
        - 10b. Adaxial leaf surface dark green, densely lepidote, scales pale.
          - 11a. Leaves spaced along shoots; inflorescence 3–4(–6)-flowered ..... 80. *R. yungningense*
          - 11b. Leaves mostly crowded at ends of shoots; inflorescence usually 2-flowered.
            - 12a. Corolla 12–15(–20) mm, puberulous; stamens 10 ..... 78. *R. dasypetalum*
            - 12b. Corolla ca. 10 mm, glabrous outside; stamens 8 ..... 81. *R. qinghaiense*
    - 7b. Scales on abaxial leaf surface pale.
      - 13a. Inflorescence usually 1–2-flowered.
        - 14a. Corolla 17–22 mm; calyx 5–7 mm ..... 74. *R. dawuense*
        - 14b. Corolla 12–17(–19) mm; calyx 0.5–3 mm.
          - 15a. Corolla 12–19 mm; calyx 2–3 mm.
            - 16a. Adaxial leaf surface pale green, matt, densely covered with overlapping scales; pedicels 1–5 mm; leaves usually narrowly elliptic to linear-lanceolate, 5–20 mm ..... 93. *R. websterianum*
            - 16b. Adaxial surface dark green, shiny, covered with contiguous or nearly contiguous scales; pedicels 1–2 mm; leaves ovate to elliptic, (5–)7–10(–12) mm ..... 94. *R. nitidulum*
          - 15b. Corolla 5–11 mm; calyx 0.5–1.2 mm.
            - 17a. Corolla 7–11 mm; stamens longer than corolla; adaxial leaf surface pale green, apex usually shortly mucronate ..... 105. *R. thymifolium*
            - 17b. Corolla 5–6 mm; stamens shorter than corolla; adaxial leaf surface dark green, apex not mucronate ..... 106. *R. yushuense*
      - 13b. Inflorescence usually 2–10-flowered.
        - 18a. Calyx usually 4–12 mm; corolla usually longer than 17 mm.
          - 19a. Plants robust, up to 1–2(–4) m tall; leaf blade 1–7 cm, apex mucronate; corolla usually pubescent outside; calyx usually reddish ..... 73. *R. cuneatum*
          - 19b. Plants small, 0.5–0.6 m tall; leaf blade 0.7–1.4(–1.6) cm, apex not mucronate; corolla glabrous outside; calyx not reddish ..... 74. *R. dawuense*
        - 18b. Calyx usually 1–2 mm; corolla usually shorter than 17 mm.
          - 20a. Leaf blade (8–)12–25(–40) mm; branchlets usually slender, fastigiate ..... 75. *R. hippophaeoides*
          - 20b. Leaf blade 5–12(–20) mm; branchlets not fastigiate.
            - 21a. Stamens usually 5, exerted from corolla tube, filaments glabrous ..... 76. *R. tsaii*
            - 21b. Stamens usually 10, not exerted from corolla tube, filaments pubescent towards base ..... 77. *R. intricatum*
- 1b. Scales on abaxial leaf surface with 2 different colors.
  - 22a. Scales on abaxial leaf surface usually golden to yellow-brown, with a few darker scales intermixed.
    - 23a. Calyx 4–7.5 mm ..... 95. *R. minyaense*
    - 23b. Calyx shorter than 4 mm.
      - 24a. Erect shrubs; calyx 0.5–1.5 mm ..... 107. *R. orthocladum*

- 24b. Straggling or prostrate shrubs; calyx 0.5–4 mm.  
 25a. Leaves 12–21 mm, apex usually emarginate ..... 108. *R. bulu*  
 25b. Leaves 3–12 mm, apex strongly mucronate ..... 109. *R. telmateium*
- 22b. Scales on abaxial leaf surface usually with pale and darker scales nearly equal in number and intermixed.
- 26a. Young shoots densely conspicuously loriform-setose ..... 88. *R. setosum*  
 26b. Young shoots never loriform-setose.
- 27a. Inflorescence usually 3–5(–15)-flowered; style long.  
 28a. Calyx 1–2 mm ..... 92. *R. lapponicum*  
 28b. Calyx 2.5–6 mm.  
 29a. Corolla scaly outside ..... 90. *R. rupicola*  
 29b. Corolla not scaly outside.  
 30a. Leaf blade 16–40(–65) mm, apex shortly mucronate; corolla tube 4–9 mm ..... 89. *R. russatum*  
 30b. Leaf blade 7–18(–24) mm, apex rounded, not mucronate; corolla tube 3–5 mm ..... 91. *R. capitatum*
- 27b. Inflorescence usually 1–4-flowered; style short.  
 31a. Inflorescence usually 2–4-flowered.  
 32a. Calyx 2.5–3.5 mm, lobes oblong; leaf blade 8–14 mm ..... 96. *R. labolengense*  
 32b. Calyx 0.8–1.5 mm, lobes orbicular or broadly triangular; leaf blade 10–20 mm.  
 33a. Small shrubs, 0.3–0.4 m tall; leaf apex mucronate; calyx not scaly outside; style ca. 8 mm ..... 102. *R. declivatum*  
 33b. Shrubs up to 1 m tall; leaf apex rounded, not mucronate; calyx scaly outside; style to 11 mm ..... 110. *R. joniense*
- 31b. Inflorescence 1–2(–3)-flowered.  
 34a. Inflorescence only 1-flowered.  
 35a. Corolla yellow; plants 2–4 m tall ..... 111. *R. maowenense*  
 35b. Corolla blue; plants 0.5–1(–1.5) m tall.  
 36a. Calyx ca. 4.5 mm, lobes oblong; leaf blade 5–12 mm; corolla ca. 12 mm ..... 98. *R. zheguense*  
 36b. Calyx ca. 0.5 mm, lobes triangular; leaf blade 4–6 mm; corolla 4–5 mm ..... 99. *R. bamaense*
- 34b. Inflorescence (1–)2(–3)-flowered.  
 37a. Low, prostrate shrubs, usually forming cushions.  
 38a. Leaf blade 10–25 mm, apex mucronate; scales on adaxial leaf surface rubbing off, ruby red, shiny; corolla glabrous outside ..... 103. *R. taibaiense*  
 38b. Leaf blade 3.5–9(–12) mm, apex usually not mucronate; scales on adaxial leaf surface pale to golden; corolla usually pubescent outside ..... 104. *R. nivale*
- 37b. Erect shrubs.  
 39a. Calyx 4–6 mm; scales on adaxial leaf surface pale; corolla ca. 15 mm ..... 97. *R. xiguense*  
 39b. Calyx 2–3 mm; scales on adaxial leaf surface yellowish to golden; corolla 10–13 mm.  
 40a. Leaves 15–20 mm; calyx ca. 3 mm, not scaly outside, lobe margin not ciliate ..... 101. *R. gologense*  
 40b. Leaves 8–15 mm; calyx ca. 2 mm, scaly outside, lobe margin ciliate ..... 100. *R. zekoense*

**73. *Rhododendron cuneatum*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 200. 1914.

楔叶杜鹃 xie ye du juan

*Rhododendron cheilanthum* I. B. Balfour & Forrest; *R. ravum* I. B. Balfour & W. W. Smith; *R. sclerocladum* I. B. Balfour & Forrest.

Shrubs, 1–2(–4) m tall; bud scales deciduous. Petiole 5–15 mm, scaly; leaf blade narrowly to broadly elliptic or oblong-lanceolate, 1–7 × 0.5–2.8 cm; base cuneate to rounded; apex acute or obtuse, strongly mucronate; abaxial surface scales contiguous or overlapping, uniformly brown to dark brown or fawn, rarely with darker spots; adaxial surface pale green, matt. Inflorescence 1–6-flowered. Pedicel 2–1.5 cm; calyx usually reddish, lobes (2–)5–8(–12) mm, oblong, persistent in fruit, scales present, pale, forming a central band, margin long-ciliate; corolla funnellform, deep purple to rose-lavender, rarely white, usually with darker markings, (1.2–)2–3(–3.4) cm, outer surface usually scaly, pubescent; stamens 10, filaments pubescent in lower part; ovary scaly; style declinate, often longer than stamens and corolla, pubescent towards base. Capsule cylindrical-ovoid, 6–14 mm, densely scaly. Fl. Apr–Jun, fr. Oct.

• *Pinus* and *Quercus* forests, thickets, rocky slopes; 2700–4200 m. SW Sichuan, NW Yunnan.

**74. *Rhododendron dawuense*** H. P. Yang, Bull. Bot. Res., Harbin 3(2): 98. 1983.

道孚杜鹃 dao fu du juan

Erect shrubs, 0.5–0.6 m tall. Leaf blade oblong-lanceolate, 0.7–1.4(–1.6) × 0.3–0.6 cm; base broadly cuneate to rounded; apex rounded or emarginate; abaxial surface pale green, scales contiguous or overlapping, uniformly silvery gray; adaxial surface dark green, scaly. Inflorescence 1(–4)-flowered. Pedicel ca. 0.5 cm; calyx lobes 5–7 mm, oblong, nearly equal, persistent in fruit, scales present, pale, forming a central band, margin ciliate; corolla broadly funnellform, pale rose-pink, 1.7–2.2 cm, tube ca. 10 mm, outer surface glabrous, inner surface pubescent; stamens 10, shorter than corolla, filaments pubescent towards base; ovary ca. 2 mm, scaly; style ca. 1.7 cm, longer than stamens, glabrous. Capsule ovoid, ca. 3 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

• *Rhododendron* thickets; ca. 4500 m. NW Sichuan.

**75. *Rhododendron hippophaeoides*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 236. 1916.

灰背杜鹃 hui bei du juan

Erect shrubs, 0.25–1(–1.5) m tall; branchlets virgate; bud scales deciduous. Petiole 2–5 mm, scaly; leaf blade oblong, elliptic, oblong-lanceolate to oblong-ovate, (0.8–)1.2–2.5(–4) × (0.4–)0.5–1(–1.7) cm; base broadly cuneate; apex rounded or obtuse; abaxial surface yellowish buff, scales overlapping, uniformly creamy yellow; adaxial surface pale green, scaly. Inflorescence 4–7(–8)-flowered. Pedicel 2.5–7 cm; calyx reddish, lobes 1–2 mm, rounded, unequal, persistent in fruit, scaly, margin ciliate; corolla broadly funnelform, bright rose or lavender-blue to bluish purple, rarely white, 1–1.3(–1.5) cm, tube ca. 4 mm, outer surface not scaly; inner surface pubescent; stamens (8–)10, shorter than corolla, filaments pubescent towards base; ovary 1–2.5 mm, scaly; style 0.4–1.6 cm, usually as long as stamens, glabrous or occasionally pubescent at base. Capsule narrowly ovoid, 5–6 mm, densely scaly. Fl. May–Jun, fr. Oct.

• *Picea* and *Pinus* forests, *Rhododendron* thickets, moist stony pastures, open grassy marshes, open stony slopes; 2400–4800 m. SW Sichuan, C, N, and W Yunnan.

- 1a. Style 4–10.5 mm; leaves broad and large; inflorescence few-flowered  
..... 75a. var. *hippophaeoides*
- 1b. Style 13–16 mm; leaves narrow and small; inflorescence many-flowered  
..... 75b. var. *occidentale*

**75a. *Rhododendron hippophaeoides* var. *hippophaeoides***

灰背杜鹃(原变种) hui bei du juan (yuan bian zhong)

*Rhododendron fimbriatum* Hutchinson.

Leaf blade broad and large. Inflorescence few-flowered. Style 4–10.5 mm. Fl. May–Jun, fr. Oct.

• *Picea* and *Pinus* forests, *Rhododendron* thickets, moist stony pastures, open grassy marshes; 2400–4800 m. SW Sichuan, C, N, and W Yunnan.

**75b. *Rhododendron hippophaeoides* var. *occidentale*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 20. 1975.

长柱灰背杜鹃 chang zhu hui bei du juan

Leaf blade narrow and small. Inflorescence many-flowered. Style 1.3–1.6 cm. Fl. Jun.

• Open stony slopes; 3500–4300 m. C and N Yunnan.

**76. *Rhododendron tsaii*** W. P. Fang, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 12: 66. 1939.

昭通杜鹃 zhao tong du juan

Small shrubs, ca. 0.3 m tall; branchlets long; bud scales deciduous. Petiole 1–1.5 mm, scaly; leaf blade narrowly elliptic, oblong or oblong-lanceolate, 0.6–1.2 × 0.25–0.5 cm; base cuneate; apex subacute or obtuse, slightly mucronate; abaxial surface uniform, buff, scales overlapping, pale fawn; adaxial surface pale green, matt, scales dense. Inflorescence 3–7-flowered. Pedicel 0.1–0.25 cm, densely scaly; calyx reddish, lobes

0.8–1 mm, ovate-rounded, scaly, margin with scales and a few cilia; corolla broadly funnelform, pale purplish, 4.5–6.8 cm, tube 2–2.8 mm, outer surface glabrous; inner surface slightly pubescent; stamens (4 or)5(–7), shorter than corolla, filaments glabrous; ovary ca. 1 mm, densely pale-scaly; style ca. 2 cm, slightly shorter than stamens, glabrous. Capsule 3–4 mm, densely scaly. Fl. May.

• Scrub, open moss lands; 2900–3400 m. E Yunnan.

**77. *Rhododendron intricatum*** Franchet, J. Bot. (Morot) 9: 395. 1895.

隐蕊杜鹃 yin rui du juan

*Rhododendron blepharocalyx* Franchet; *R. peramabile* Hutchinson.

Shrubs, 0.15–1(–1.5) m tall; branchlets compact and intricate; bud scales deciduous. Petiole 1–3 mm, scaly; leaf blade oblong-elliptic to ovate, 0.5–1.2(–2) × 0.3–0.7(–1) cm; base cuneate to rounded; apex rounded, usually mucronate; abaxial surface uniform, scales contiguous to overlapping, buff to straw colored; adaxial surface pale grayish green, matt, densely scaly. Inflorescence 2–5(–10)-flowered. Pedicel 1–2(–5) cm, scaly; calyx reddish, lobes 0.5–1(–2) mm, triangular to oblong, persistent in fruit, margin with pale golden scales and usually ciliate; corolla tubular-funnelform, pale lavender, purple-blue to dark blue, rarely yellowish, (0.7–)0.8–1.2(–1.3) cm, tube 4–6(–7) mm, outer surface glabrous; inner surface pubescent; stamens (7–)10(–11), shorter than corolla tube, filaments pubescent towards base; ovary 1.5–2 mm, densely pale-scaly; style shorter than stamens, glabrous. Capsule ovoid, ca. 5 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

• *Abies* forests, *Rhododendron* thickets, alpine meadows, moist ravines; (2800–)3500–4500(–5000) m. C and W Sichuan, N Yunnan.

**78. *Rhododendron dasypetalum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 45. 1919.

毛瓣杜鹃 mao ban du juan

Small shrubs, to 0.8 m tall; branchlets with dense flaky scales; bud scales deciduous. Petiole 1–2 mm, scaly; leaf blade elliptic or oblong-elliptic, 0.8–2 × 0.3–0.75 cm; base broadly cuneate to rounded; apex obtuse or rounded, mucronate; abaxial surface uniformly tawny brown, with scales contiguous to overlapping; adaxial surface dark green, shiny, sparsely scaly. Inflorescence usually 2-flowered. Pedicel 0.3–0.4(–0.8) cm, scaly; calyx crimson-purple, lobes 3–4 mm, oblong, persistent in fruit, scaly, pubescent, margin ciliate; corolla broadly funnelform, bright purplish rose, 1.2–1.5(–2) cm, tube 4–8(–10) mm, outer surface not scaly, puberulous, inner surface pubescent; stamens 10, 0.9–1.4 cm, filaments pubescent towards base; ovary 2–2.5 mm, densely pale-scaly; style ca. 1.5 cm, longer than stamens. Capsule ovoid, ca. 5 mm, densely scaly. Fl. Apr–May, fr. Jun–Jul.

• Open stony pastures; 3300–3500 m. NW Yunnan.

**79. *Rhododendron amundsenianum*** Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 58: 25. 1921.

暗叶杜鹃 an ye du juan

Small shrubs, to 0.5(–1) m tall; branchlets short, with dense flaky scales; bud scales deciduous. Petiole 1–2 mm, scaly; leaf blade oblong-ovate, broadly elliptic or orbicular, 0.9–1.5(–1.8) × 0.5–0.7(–0.9) cm; base truncate or broadly cuneate; apex rounded with a short reflexed mucro; abaxial surface uniformly rusty brown, scales irregularly contiguous; adaxial surface green, matt, scales contiguous or overlapping, amber. Inflorescence usually 3-flowered. Pedicel 0.2–0.3 cm, scaly; calyx lobes 4–5 mm, ovate, scaly, margin densely ciliate, persistent in fruit; corolla and stamens unknown; style ca. 1.5 cm, densely pilose towards base. Capsule ovoid, ca. 5 mm, densely scaly. Fl. Apr–May.

- Mountains; 3900–4300 m. SW Sichuan.

**80. *Rhododendron yungningense*** I. B. Balfour ex Hutchinson in J. B. Stevenson, Sp. Rhodod. 436. 1930.

永宁杜鹃 yong ning du juan

*Rhododendron glomerulatum* Hutchinson.

Erect shrubs, 1(–1.3) m tall; branchlets compact; bud scales deciduous. Petiole 1–3 mm, scaly; leaf blade elliptic, broadly elliptic, oblong or oblong-lanceolate, (0.6–)0.8–2 × (0.2–)0.4–0.8 cm; base cuneate; apex acute or obtuse, mucronate; abaxial surface fawn to ferruginous, sometimes with slightly darker spotting, scales almost contiguous; adaxial surface green, matt, scales dense. Inflorescence 3–4(–6)-flowered. Pedicel 0.2–0.3 cm, scaly; calyx pink or purple, lobes (0.5–)2–3 mm, ovate to rounded, irregular, persistent in fruit, usually scaly, glabrous, margin scaly, sometimes ciliate; corolla broadly funnelform, deep purplish blue, rose-lavender, rarely white, 1.1–1.5(–1.7) cm, tube 5–6 mm, outer surface usually glabrous, throat pubescent; stamens (8–)10(–12), 0.9–1.4 cm, filaments pubescent towards base; ovary 1.5–2.5 mm, scaly; style 0.35–0.6 cm or 1–1.5 cm, glabrous. Capsule ovoid, ca. 5 mm, densely scaly. Fl. May–Jun, fr. Jul–Sep.

- *Rhododendron* scrub, open alpine slopes, rocks; 3200–4300 m. SW Sichuan, N Yunnan.

**81. *Rhododendron qinghaiense*** Ching ex W. Y. Wang, Acta Phytotax. Sin. 20: 56. 1982.

青海杜鹃 qing hai du juan

Small, much-branched shrubs. Petiole 1–1.5 mm, scaly; leaf blade oblong, 0.6–0.8 cm; abaxial surface rusty brown, densely scaly, ferruginous; adaxial surface dark green, scales present, pale. Inflorescence usually 2-flowered. Calyx purplish rose, lobes 3–4 mm, scaly, golden, margin ciliate; corolla funnelform, ca. 1 cm, tube shorter than lobes, outer surface glabrous, throat villous; lobes oblong, ca. 0.6 cm; stamens 8, filaments villous towards base. Capsule cylindric, densely golden scaly. Fl. and fr. May–Jul.

- Shady slopes; ca. 4300 m. S Qinghai.

**82. *Rhododendron complexum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 222. 1916.

环绕杜鹃 huan rao du juan

Small shrubs, fastigiate or rounded, 0.08–0.6 m tall, much

branched. Petiole 0.5–2 mm, scaly; leaf blade oblong, lanceolate to ovate, 0.35–1.2 × 0.16–0.65 cm; base cuneate or truncate; apex obtuse or rounded, mucronate or absent; abaxial surface scales contiguous, uniformly ferruginous; adaxial surface green, scales dense. Inflorescence 3–4(–6)-flowered. Pedicel 0.5–7.5 cm, scaly; calyx usually obsolete, lobes less than 1 mm; lobes triangular to rounded, scaly, margin scaly or ciliate, persistent in fruit; corolla tubular-funnelform, pale lilac to rose-purple, (0.9–)1.1–1.3 cm, tube 4–6 mm, outer surface glabrous, rarely puberulous, inner surface pubescent; stamens 5 or 6(–8), included in corolla tube, filaments pubescent towards base; ovary 1.2–2 mm, densely pale-scaly; style shorter than stamens. Capsule ovoid, ca. 5 mm, densely scaly. Fl. May–Jul, fr. Jul–Sep.

- *Rhododendron* thickets, alpine grassy slopes, stony pastures, rocks; 3000–4600 m. W Sichuan, NW Yunnan.

**83. *Rhododendron tapetiforme*** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 9: 279. 1916.

狭萼杜鹃 xia e du juan

Small, matted or rounded shrubs, prostrate, or up to 0.7–0.8(–0.9) m tall. Petiole 0.5–2(–3) mm, scaly; leaf blade broadly elliptic to orbicular, 0.4–1.2(–1.7) × (0.2–)0.3–0.8(–1) cm; base broadly cuneate; apex obtuse or rounded, usually not mucronate; abaxial surface scales contiguous, uniformly rufous; adaxial surface dark green, scales dense. Inflorescence 1–3(or 4)-flowered. Pedicel 0.15–0.3 cm, scaly; calyx lobes to 1 mm, triangular to rounded, persistent in fruit, variably scaly or ciliate; corolla broadly funnelform, purple to purplish blue or rose, 1–1.6 cm, tube 3–5 mm, outer surface usually glabrous, inner surface pubescent; stamens (5–)10, long-exserted from corolla tube, filaments villous towards base; ovary 1.6–2.6 mm, densely scaly; style longer than stamens, usually glabrous. Capsule ovoid, 5–7 mm, densely scaly. Fl. Jun–Jul, fr. Jul–Sep.

- Rhododendron* thickets, open alpine slopes, bare screes; 3300–4800 m. SE Xizang, NW Yunnan [NE Myanmar].

*Rhododendron × chamaezelum* I. B. Balfour & Forrest (Notes Roy. Bot. Gard. Edinburgh 13: 241. 1922), described from Yunnan, was considered to be a natural hybrid between *R. tapetiforme* and *R. rupicola* var. *chryseum* by Philipson and Philipson (Notes Roy. Bot. Gard. Edinburgh 34: 28. 1975).

**84. *Rhododendron flavidum*** Franchet, J. Bot. (Morot) 9: 395. 1895.

淡黄杜鹃 dan huang du juan

Erect shrubs, 0.4–0.8(–2.5) m tall. Petiole 2–3(–4) mm, scaly; leaf blade ovate-elliptic, broadly elliptic to oblong, (0.7–)1–1.5(–2.5) × (0.3–)0.5–0.8 cm; base rounded to narrowly cuneate; apex rounded, shortly mucronate; abaxial surface pale gray-green, scales well-spaced, uniformly brown or dimorphic, some dark, the rest golden; adaxial surface dark green, scales dense. Inflorescence (1–)3–5-flowered. Pedicel 0.3–0.4(–0.7) cm, scaly; calyx lobes (2–)4–6(–7) mm, oblong-lanceolate to oblong, apex acute, persistent in fruit, usually scaly, ciliate; corolla broadly funnelform, yellow, 1.2–1.8 cm, tube 4–7 mm, outer surface usually sparsely scaly, pubescent, inner surface pubescent; stamens (8–)10, nearly as long as corolla, fila-

ments villous towards base; ovary 2–3.5 mm, densely scaly; style 1.2–2.2 cm, glabrous or puberulous at base. Capsule ovoid, ca. 6 mm, densely scaly. Fl. Mar–May, fr. Jun–Jul.

• Alpine forests and thickets, rocky slopes, rocks; 3000–4300 m. W Sichuan.

*Rhododendron ×verruculosum* Rehder & E. H. Wilson (in Sargent, Pl. Wilson. 1: 507. 1913), described from Sichuan, was considered to be a natural hybrid between *R. flavidum* and an unknown species by Philipson and Philipson (Notes Roy. Bot. Gard. Edinburgh 34: 40. 1975).

- 1a. Leaf blade narrower; abaxial surface with uniformly brown scales; calyx lobes 2–4(–7) mm; style puberulous ..... 84a. var. *flavidum*  
1b. Leaf blade wider; abaxial surface with some dark scales, the rest golden; calyx lobes ca. 2 mm; style glabrous ..... 84b. var. *psilostylum*

**84a. *Rhododendron flavidum* var. *flavidum***

淡黄杜鹃(原变种) dan huang du juan (yuan bian zhong)

*Rhododendron primulinum* Hemsley.

Leaf blade narrow; abaxial surface with scales uniformly brown. Calyx 2–4(–7) mm; style puberulous. Fl. Mar–May, fr. Jun–Jul.

• Alpine forests, rocks; 3000–4300 m. W Sichuan.

**84b. *Rhododendron flavidum* var. *psilostylum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 513. 1913.

光柱淡黄杜鹃 guang zhu dan huang du juan

*Rhododendron psilostylum* (Rehder & E. H. Wilson) I. B. Balfour.

Leaf blade wider; abaxial surface with scales dimorphic, some dark, the rest golden. Calyx ca. 2 mm; style glabrous. Fl. Jun.

• Alpine thickets, rocky slopes; ca. 3300 m. NW Sichuan.

**85. *Rhododendron impeditum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 239. 1916.

粉紫杜鹃 fen zi du juan

*Rhododendron litangense* I. B. Balfour ex Hutchinson.

Small, much-branched, compact shrubs, usually forming cushions, 0.8(–1.2) m tall. Petiole 1–3 mm, scaly; leaf blade ovate, elliptic or broadly elliptic to oblong, (0.4–)0.5–1.4(–1.6) × (0.25–)0.3–0.6(–0.8) cm; base broadly cuneate; apex acute or obtuse, mucronulate; abaxial surface pale gray-green, scales markedly to slightly spaced, usually uniformly rusty or amber; shiny; adaxial surface dark green, sparsely scaly, pale. Inflorescence (2–)3- or 4-flowered. Pedicel 1–3 cm, scaly; calyx lobes 2.5–4 mm, oblong, persistent in fruit, scales present, forming a sparse central band, ciliate; corolla broadly funnel-form, purple, violet or rose-lavender, rarely white, (0.7–)0.8–1.5 cm, tube (2–)3–6 mm, outer surface usually sparsely scaly, rarely also pubescent, inner surface pubescent; stamens (5–)10(or 11), filaments pubescent towards base; ovary 1.5–2.5 mm, scaly; style very variable, longer or shorter than stamens, gla-

brous or puberulous at base. Capsule ovoid, 4–6 mm, densely scaly. Fl. May–Jun, fr. Sep–Oct.

• Mixed thickets, *Rhododendron* thickets, alpine meadows, open slopes; 2500–4600 m. SW Sichuan, NW Yunnan.

**86. *Rhododendron fastigiatum*** Franchet, Bull. Soc. Bot. France 33: 234. 1886.

密枝杜鹃 mi zhi du juan

*Rhododendron nanum* H. Léveillé.

Small shrubs, usually forming dense cushions or mats, 0.8–1(–1.5) m tall. Petiole 1–2(–3) mm, scaly; leaf blade oblong, elliptic or ovate, (0.45–)0.7–1.4(–1.6) × (0.28–)0.3–0.6(–0.9) cm; base obtuse or cuneate; apex rounded or obtuse, mucronate; abaxial surface pale gray-green, scales not contiguous, usually uniformly pale fawn, opaque; adaxial surface dark green, scales dense. Inflorescence (1–)3(–5)-flowered. Pedicel 0.2–2 cm, scaly; calyx lobes (2.5–)3–4.5(–5.5) mm, oblong or broadly elliptic, persistent in fruit, scaly, ciliate; corolla broadly funnel-form, purple-blue to pinkish purple, 1–1.5(–1.8) cm, tube 3–6.5(–8) mm, outer surface usually sparsely scaly, inner surface pubescent; stamens (6–)10(–11), filaments pubescent towards base; ovary ca. 2 mm, scaly; style longer than stamens, glabrous or rarely puberulous at base. Capsule ovoid, 4–6 mm, densely scaly. Fl. May–Jun, fr. Aug–Sep.

• *Pinus* forests, *Rhododendron* thickets, alpine moorlands, rocky slopes, screes, cliffs; 3000–4500 m. C and NW Yunnan.

**87. *Rhododendron polycladum*** Franchet, Bull. Soc. Bot. France 33: 234. 1886.

多枝杜鹃 duo zhi du juan

*Rhododendron compactum* Hutchinson; *R. scintillans* I. B. Balfour & W. W. Smith.

Erect shrubs, ca. 1.2 m tall; branchlets short, densely scaly with flaky scales. Petiole 0.5–3 mm, scaly; leaf blade narrowly elliptic, elliptic, oblong or lanceolate, (0.4–)0.6–1.5(–2) × 0.2–0.4(–0.8) cm; base cuneate; apex acute or obtuse, shortly mucronate; abaxial surface gray-green, scales contiguous or not, usually uniformly reddish brown; adaxial surface usually dark green, shiny, scales dense. Inflorescence 2–5-flowered. Pedicel 0.5–3 cm, scaly; calyx lobes 0.5–1.5(–2.5) mm, broadly ovate to rounded, unequal, persistent in fruit, margin ciliate and rarely also scaly; corolla broadly funnel-form, lavender to purple-blue, rarely white, 0.8–1.3 cm, tube 2.5–5 mm, outer surface not scaly; inner surface pubescent; stamens (9 or)10, nearly as long as corolla, filaments pubescent towards base; ovary 2–3 mm, scaly; style longer than stamens, scales absent, rarely puberulous at base. Capsule cylindric, up to 6 mm, densely scaly. Fl. May–Jun, fr. Jul–Sep.

• *Pinus* forest margins, open alpine meadows, rocky slopes, cliffs; 3000–4300 m. C and NW Yunnan.

**88. *Rhododendron setosum*** D. Don, Mem. Wern. Nat. Hist. Soc. 3: 408. 1821.

刚毛杜鹃 gang mao du juan

Erect shrubs, 0.1–0.3(–1.2) m tall, usually intricately branched; young shoots densely scaly with flaky scales, densely setose. Petiole 1–3 mm, scaly, setose; leaf blade ovate, elliptic, oblong to obovate, 0.7–1.2(–1.5) × 0.4–0.6(–0.8) cm; base rounded; margin ciliate; apex usually rounded, mucronate; abaxial surface pale gray-green, densely setose, scales not contiguous, dimorphic, usually golden and dark brown, nearly equal in number and intermixed; adaxial surface usually dark green, densely scaly. Inflorescence 1–3(–8)-flowered. Pedicel 0.3–0.5(–1) cm, scaly, sometimes setose; calyx rose-purple; lobes 4–7(–8) mm, oblong, elliptic or ovate, persistent in fruit, scaly, margin usually ciliate; corolla broadly funnellform, purple-pink, (1–)1.2–1.6(–1.8) cm, tube 7–8 mm, outer surface glabrous, inner surface pubescent; stamens 8–10, exerted from corolla, filaments pubescent towards base; ovary ca. 2 mm, scaly; style longer than stamens, glabrous. Capsule cylindrical-ovoid, 5–6 mm, densely scaly. Fl. Apr–May, fr. Jul–Sep.

*Rhododendron* thickets, open scrub, alpine meadows; 3500–4800 m. S Xizang [Bhutan, India (W Bengal), Nepal, Sikkim].

**89. *Rhododendron russatum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 126. 1919.

紫兰杜鹃 *zi lan du juan*

*Rhododendron cantabile* I. B. Balfour ex Hutchinson.

Small shrubs, sometimes cushions or semiprostrate, 0.3–1.5 m tall, usually intricately branched; young shoots scaly. Petiole 1–6(–9) mm, scaly; leaf blade oblong-elliptic, oblong to ovate, 11.6–4(–6.5) × 0.6–1.7 cm; base cuneate; apex rounded or obtuse, mucronate; abaxial surface scales contiguous or overlapping, 2-colored, dark brown and yellow, or uniformly red-brown or brown; adaxial surface pale or dark green, densely scaly. Inflorescence (4–)6–10(–15)-flowered. Pedicel 1–2(–5) cm, scaly; calyx greenish or reddish purple; lobes 3–6 mm, oblong or ovate, persistent in fruit, scales sparse or absent, margin usually ciliate and sometimes also with a few scales; corolla broadly funnellform, deep blue, purple, pink or rose, (1–)1.3–2 cm, tube 4–9 mm, outer surface glabrous or puberulous, throat pubescent; stamens (5–)10, filaments pubescent towards base; ovary ca. 2 mm, scaly; style 1.4–2 cm, longer than stamens, pubescent for up to 1/2 its length. Capsule ovoid, 4–6 mm, densely scaly, usually with persistent apical hairs. Fl. May–Jun, fr. Jul–Sep.

Forest margins, *Rhododendron* scrub, alpine pastures, rocky slopes, cliffs; (2500–)3400–4300 m. SW Sichuan, N Yunnan [Myanmar].

**90. *Rhododendron rupicola*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 203. 1914.

多色杜鹃 *duo se du juan*

Small shrubs, 0.6–(1.2) m tall, much-branched, scaly. Petiole 1–3(–4.5) mm, scaly; leaf blade broadly elliptic, oblong or ovate, 0.65–2.1 × 0.3–1.3 cm; base broadly cuneate to truncate; apex rounded, mucronate; abaxial surface yellowish brown, scales overlapping to slightly spaced, 2-colored, dark brown or amber and pale golden, the darker scales usually predomi-

nating; adaxial surface densely scaly. Inflorescence 2–6(–8)-flowered. Pedicel 0.2–0.4 cm, scaly; calyx reddish purple; lobes (2.4–)4–5(–6) mm, oblong or broadly ovate, persistent in fruit, scales forming a broad central band, margin with or without scales, sometimes ciliate; corolla broadly funnellform, purple to crimson, or yellow, rarely white, (0.8–)1–1.6(–1.8) cm, tube 3–6(–8) mm, outer surface scaly, sometimes pubescent, throat pubescent; stamens 5–10, number variable even within one inflorescence, filaments pubescent towards base; ovary 2–3 mm, scaly, pubescent; style 1–1.9 cm, longer than stamens, pubescent or glabrous. Capsule broadly ovoid, 4–6 mm, scaly, pubescent. Fl. May–Jul, fr. Jul–Sep.

*Pinus* forests, forest margins, *Rhododendron* thickets, alpine meadows, open stony grasslands, open moorlands, rocky or stony slopes; 2800–4800(–4900) m. W Sichuan, SE Xizang, C and N Yunnan [NE Myanmar].

- 1a. Corolla purple to crimson, rarely white ..... 90a. var. *rupicola*
- 1b. Corolla yellow.
  - 2a. Calyx lobes fringed only with cilia ..... 90b. var. *chryseum*
  - 2b. Calyx lobes fringed with scales and cilia ..... 90c. var. *muliense*

**90a. *Rhododendron rupicola* var. *rupicola***

多色杜鹃(原变种) *duo se du juan* (*yuan bian zhong*)

*Rhododendron achroanthum* I. B. Balfour & W. W. Smith.

Calyx lobe margin sometimes without cilia; corolla purple to crimson, rarely white. Fl. May–Jul, fr. Jul–Sep.

Forest margins, *Rhododendron* thickets, rocky slopes; 2800–4300 m. W Sichuan, SE Xizang, C and N Yunnan [NE Myanmar].

**90b. *Rhododendron rupicola* var. *chryseum*** (I. B. Balfour & Kingdon Ward) M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 62. 1975.

金黄多色杜鹃 *jin huang duo se du juan*

*Rhododendron chryseum* I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 9: 219. 1916.

Calyx lobe margin ciliate; corolla yellow. Fl. Jun.

Forest margins, open moorlands, stony slopes; 3300–4800 m. W Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**90c. *Rhododendron rupicola* var. *muliense*** (I. B. Balfour & Forrest) M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 63. 1975.

木里多色杜鹃 *mu li duo se du juan*

*Rhododendron muliense* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 101. 1919.

Calyx lobe margin scaly and ciliate; corolla yellow. Fl. Jun.

• *Pinus* forests, alpine meadows, open stony grasslands; 3000–4500(–4900) m. SW Sichuan, NW Yunnan.

**91. *Rhododendron capitatum*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 351. 1877.

头花杜鹃 tou hua du juan

Small shrubs, 0.5–(1.5) m tall; bud scales deciduous. Petiole 2–3 mm, scaly; leaf blade elliptic or oblong-elliptic, (0.7–)1–1.8(–2.4) × (0.3–)0.5–1 cm; base broadly cuneate; apex rounded, not mucronate; abaxial surface pale brown, scales contiguous to slightly separated, 2-colored, pale yellow and dark brown or tan to dark amber, nearly equal in number and intermixed; adaxial surface pale or olive green, densely scaly. Inflorescence 2–5(–8)-flowered. Pedicel 1–3 cm, scaly; calyx yellowish, lobes 3–6 mm, oblong or ovate, unequal, persistent in fruit, pilose or scaly at base, margin ciliate; corolla broadly funnellform, pale purple to deep purple or bluish purple, (1–)1.3–1.5(–1.7) cm, tube 3–5 mm, outer surface not scaly; throat pubescent; stamens 10, exserted, filaments pubescent towards base; ovary ca. 2 mm, scaly, pubescent; style slightly longer than stamens, occasionally pubescent towards base. Capsule ovoid, 3.5–6 mm, scaly, pubescent. Fl. Apr–Jun, fr. Jul–Sep.

• Moist grasslands, alpine meadows, rocky slopes; 2500–4300 m. Gansu, Qinghai, Shaanxi, NW Sichuan.

**92. *Rhododendron lapponicum*** (Linnaeus) Wahlenberg, Fl. Lapp. 104. 1812.

高山杜鹃 gao shan du juan

*Azalea lapponica* Linnaeus, Sp. Pl. 1: 151. 1753; *A. ferruginosa* Pallas; *A. parvifolia* (Adams) Kuntze; *Rhododendron confertissimum* Nakai; *R. lapponicum* subsp. *parvifolium* (Adams) T. Yamazaki; *R. palustre* Turczaninow ex de Candolle (1839), not Kron & Judd (1990); *R. parvifolium* Adams; *R. parvifolium* subsp. *confertissimum* (Nakai) A. P. Khokhrjakov.

Small, much-branched prostrate or erect shrubs, 0.2–0.45(–1) m tall. Petiole 1.5–4 mm, scaly; leaf blade oblong-elliptic, ovate-elliptic to oblong-obovate, 0.4–1.5(–2.5) × 0.2–0.5(–0.9) cm; base broadly cuneate; apex obtuse or rounded, mucronate; abaxial surface fawn to reddish brown, scales contiguous or overlapping, 2-colored, pale brown or ferruginous, nearly equal in number and intermixed; adaxial surface pale green, matt, densely scaly. Inflorescence (2–)3–5(–6)-flowered. Pedicel 0.3–1.2 cm, scaly; calyx reddish or purple; lobes (0.5–)1–2 mm, deltoid or rounded, persistent in fruit, scaly, margin ciliate and rarely scaly; corolla broadly funnellform, violet rose to purple or rarely white, (0.65–)0.7–1.3(–1.6) cm, tube (1.5–)2–5(–6) mm, outer surface glabrous, throat pubescent; stamens 5–10, filaments pubescent towards base; ovary ca. 1.2 mm, densely scaly; style 1.1–1.5 cm, longer than stamens, glabrous. Capsule cylindric-ovate, 3–6 mm, densely scaly. Fl. May–Jul, fr. Sep–Oct.

Arctic regions, mountain tundra, bogs, peat or moss lands, clayey soils, other damp places; sea level to 1900 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Japan, N Korea, Mongolia, Russia (Siberia); N Europe (Scandinavia), N North America (Canada, Greenland, N United States)].

**93. *Rhododendron websterianum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 511. 1913.

毛蕊杜鹃 mao rui du juan

Small, much-branched erect shrubs, (0.2–)0.8–1(–1.5) m tall. Petiole 1–5 mm, scaly; leaf blade ovate, oblong, narrowly elliptic to linear-lanceolate, (0.5–)0.7–1.5(–2) × (0.2–)0.3–0.5(–0.9) cm; base cuneate; apex obtuse, rarely mucronate; abaxial surface scales contiguous to overlapping, uniformly fawn or golden-brown; adaxial surface pale green, matt, scales overlapping. Inflorescence 1(or 2)-flowered. Pedicel 1–3 cm, scaly; calyx lavender or yellowish red; lobes (2.8–)3–4(–5) mm, rounded to oblong, persistent in fruit, usually scaly, margin ciliate; corolla broadly funnellform, pale purple to blue-purple or yellow, (1–)1.3–1.7(–1.9) cm, tube 5–7 mm, outer surface not scaly, sometimes pubescent; throat pubescent; stamens 10, nearly as long as corolla, filaments pubescent towards base; ovary ca. 2 mm, densely scaly; style longer than stamens, with some scales near base, slightly pubescent. Capsule ovoid to cylindric, 4–5(–7) mm, densely scaly. Fl. May–Jul, fr. Sep–Oct.

• *Pinus* forests, scrub, moorlands, alpine meadows and grasslands; 3200–4900 m. NW Sichuan.

1a. Corolla pale purple to blue-purple

..... 93a. var. *websterianum*

1b. Corolla yellow ..... 93b. var. *yulongense*

**93a. *Rhododendron websterianum* var. *websterianum***

毛蕊杜鹃(原变种) mao rui du juan (yuan bian zhong)

Corolla pale purple to blue-purple. Fl. May–Jul, fr. Sep–Oct.

• *Pinus* forests, scrub, moorlands; 3200–4900 m. NW Sichuan.

**93b. *Rhododendron websterianum* var. *yulongense*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 23. 1975.

黄花毛蕊杜鹃 huang hua mao rui du juan

Corolla yellow. Fl. Jul.

• Alpine meadows and grasslands; 4300–4800 m. NW Sichuan.

**94. *Rhododendron nitidulum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 509. 1913.

光亮杜鹃 guang liang du juan

Small, erect or ascending shrubs, 0.2–1(–1.5) m tall; branchlets short, thick, scaly. Petiole 1–2 mm, scaly; leaf blade ovate to elliptic, (0.5–)0.7–1(–1.2) × (0.25–)0.3–0.6(–0.7) cm; base broadly cuneate to rounded; apex obtuse or rounded, mucro absent or obscure; abaxial surface scales contiguous to overlapping, fawn, sometimes with a few darker scales intermixed; adaxial surface dark green, shiny, scales contiguous. Inflorescence 1- or 2-flowered. Pedicel 0.5–1.5 cm, scaly; calyx pink; lobes (1.5–)2–3 mm, ovate to oblong-ovate, persistent in fruit, scaly, margin usually ciliate; corolla broadly funnellform, rosy lilac or violet-purple, 1.2–1.5 cm, tube 4–6 mm, outer surface not scaly; throat pubescent; stamens (8–)10, equaling or slightly longer than corolla, filaments villous towards base; ovary ca. 2 mm, densely scaly; style longer than stamens, scales and hairs absent. Capsule ovoid, 3–5 mm, densely scaly. Fl. May–Jul, fr. Oct–Nov.

• Alpine meadows, moorlands, rocky slopes, moist places by streams; 3200–4500(–5000) m. C and W Sichuan.



- 1a. Abaxial leaf surface uniformly fawn .... 94a. var. *nitidulum*  
1b. Abaxial leaf surface with a few darker  
scales intermixed with fawn scales ..... 94b. var. *omeiense*

**94a. *Rhododendron nitidulum* var. *nitidulum***

光亮杜鹃(原变种) guang liang du juan (yuan bian zhong)

*Rhododendron nitidulum* var. *nubigenum* Rehder & E. H. Wilson; ?*R. yulingense* W. P. Fang.

Abaxial leaf surface with uniformly fawn scales. Fl. May–Jun.

• Alpine meadows, moorlands, moist places by streams; 3200–4500(–5000) m. W Sichuan.

From the original description, it seems probable that *Rhododendron yulingense* (W. P. Fang, Acta Sci. Nat. Univ. Szechuan. 1957(2): 217. 1957), described from W Sichuan (Kangding), is a synonym of *R. nitidulum* var. *nitidulum*.

**94b. *Rhododendron nitidulum* var. *omeiense*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 24. 1975.

峨眉光亮杜鹃 e mei guang liang du juan

Abaxial leaf surface with 2-colored scales, mostly fawn with a few darker scales intermixed. Fl. Jun–Jul.

• Moorlands, rocky slopes; 3200–3500 m. C Sichuan.

**95. *Rhododendron minyaense*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 45. 1975.

黄褐杜鹃 huang he du juan

Small, erect shrubs, ca. 0.6 m tall; branchlets covered with dark brown scales. Petiole 1–3 mm, scaly; leaf blade broadly ovate or oblong-elliptic, (0.7–)0.9–1.7 × (0.4–)0.5–1 cm; base broadly cuneate to subcordate; apex obtuse or rounded, mucro obscure; abaxial surface tawny, scales contiguous, usually 2-colored, golden to yellow-brown, some with darker centers; adaxial surface dark green, scales contiguous to separate, pale. Inflorescence 2- or 3-flowered. Pedicel 1–2 cm, scaly; calyx lobes 4–7.5 mm, ovate or rounded, persistent in fruit, scales sometimes present, forming a central band, margin ciliate and rarely with a few scales; corolla funnelform, pale to deep purplish, 1.4–1.8 cm, tube 4–6 mm, outer surface rarely scaly, often pubescent, throat pubescent; stamens usually 10, 1.1–1.5 cm, slightly shorter than corolla, filaments villous towards base; ovary 2–2.5 mm, densely scaly; style 1.4–1.6 cm, longer than stamens, pubescent or glabrous towards base. Capsule ovoid, ca. 5 mm, densely scaly. Fl. and fr. May–Jun.

• Alpine meadows; ca. 4600 m. W Sichuan.

**96. *Rhododendron labolengense*** Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 94. 1983.

拉卜楞杜鹃 la bo leng du juan

Small, erect shrubs, ca. 0.5 m tall; branchlets virgate and intricately branched, with dense flaky dark brown scales. Petiole 1–2 mm, scaly; leaf blade broadly elliptic to ovate-oblong, 0.8–1.4 × 0.3–0.6 cm; base broadly cuneate or obtuse; apex ob-

tuse, not mucronulate; abaxial surface brown, scales contiguous, 2-colored, golden and brown intermixed; adaxial surface deep green, scales contiguous, pale. Inflorescence 2–4-flowered. Pedicel 1–3 cm, scaly; calyx lobes 2.5–3.5 mm, oblong, persistent in fruit, scales absent, glabrous except for ciliate margin; corolla broadly funnelform, purple, 1–1.4 cm, tube ca. 4.5 mm, throat villous; stamens 10, shorter than corolla, filaments pubescent towards base; ovary ca. 2 mm, densely scaly; style 1–1.2 cm, longer than stamens, pubescent towards base. Capsule ovoid, 3–4 mm, densely scaly. Fl. Jun–Jul, fr. Aug–Sep.

• Mountain slopes; 3500–3900 m. S Gansu.

**97. *Rhododendron xiguense*** Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 92. 1983.

西固杜鹃 xi gu du juan

Small, erect shrubs, ca. 1 m tall; branchlets densely covered with dark brown scales. Petiole 0.8–2 mm, scaly; leaf blade oblong-elliptic or ovate-oblong, sometimes orbicular, 0.6–1.5 × 0.3–0.6 cm; base broadly cuneate or obtuse; apex rounded, not mucronulate; abaxial surface pale yellow-brown, scales contiguous, 2-colored, yellow and dark brown intermixed; adaxial surface dark green, scales nearly contiguous, pale. Inflorescence ca. 3-flowered. Pedicel ca. 0.1 cm, scaly; calyx lobes 4–6 mm, oblong or ovate, unequal, persistent in fruit, scales forming a sparse central band, margin ciliate; corolla funnelform, rose-purple, ca. 1.5 cm, tube ca. 6 mm, throat villous; stamens 10, as long as corolla, filaments pubescent towards base; ovary ca. 2 mm, densely scaly; style to 1.3 cm, longer than stamens, pubescent. Capsule ovoid, ca. 3 mm, densely scaly. Fl. and fr. Jun–Aug.

• Alpine gullies; 3400–3800 m. Gansu.

**98. *Rhododendron zheguense*** Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 91. 1983.

鹧鸪杜鹃 zhe gu du juan

Small, erect shrubs, 0.5–1(–1.5) m tall; branchlets intricately branched and virgate, densely dark brown scaly. Petiole 0.5–2 mm, scaly; leaf blade ovate-elliptic or ovate, 0.5–1.2 × 0.3–0.6 cm; base obtuse; apex rounded, not mucronulate; abaxial surface pale yellow-brown, scales contiguous, 2-colored, yellow and dark brown; adaxial surface dark green, scales contiguous, orange. Inflorescence 1-flowered. Pedicel 0.5–2 cm, scaly; calyx lobes ca. 4.5 mm, oblong, usually equal, persistent in fruit, scales forming a dense central band, margin ciliate and/or scaly; corolla funnelform, pale blue, ca. 1.2 cm, tube ca. 5 mm, outer surface sparsely pubescent, throat villous; stamens 10, slightly shorter than corolla, filaments villous towards base; ovary ca. 3 mm, densely scaly; style ca. 7 mm, shorter than stamens, puberulous. Capsule ovoid, ca. 4 mm, densely scaly. Fl. Jul–Aug, fr. Sep–Oct.

• Forest margins, open slopes; 3800–4900 m. N Sichuan (Zhegu Shan).

**99. *Rhododendron bamaense*** Z. J. Zhao, Fl. Lign. Qinghaica, Add. 4. 1987.

斑玛杜鹃 ban ma du juan

Small, erect shrubs, ca. 0.6 m tall; branches of current year densely black-scaled. Petiole ca. 0.5 mm, scaly; leaf blade elliptic or ovate, 0.4–0.6 × 0.15–0.25 cm; base cuneate to rounded; apex rounded; abaxial surface yellow-green, scales overlapping, 2-colored, pale yellow and brown intermixed; adaxial surface dark green, scales slightly overlapping, yellow. Inflorescence 1-flowered. Calyx lobes ca. 0.5 mm, triangular, densely scaly, margin not ciliate; corolla broadly funnelform, deep blue, 0.4–0.5 cm, outer surface glabrous, throat pubescent; stamens 10, 0.4–0.8 cm, filaments pubescent towards base; ovary ca. 2 mm, densely scaly; style ca. 8 mm, longer than stamens. Fl. Jun.

- Forests; ca. 4300 m. SE Qinghai.

**100. *Rhododendron zekoense*** Y. D. Sun & Z. J. Zhao, Fl. Lign. Qinghaica, Add. 3. 1987.

泽库杜鹃 ze ku du juan

Small shrubs, ca. 1 m tall; branches of current year short, densely dark brown-scaled. Petiole ca. 3 mm, scaly; leaf blade long-elliptic, oblong or long-obovate, 0.8–1.5 × 0.3–0.5 cm; base broadly cuneate or rounded; apex rounded or obtuse, minutely mucronate or retuse; abaxial surface yellow-green or pale yellow brown, scales contiguous or nearly contiguous, 2-colored, pale yellow and pale brown intermixed; adaxial surface dark green, scales contiguous or nearly so, 2-colored, pale yellow and yellow intermixed. Inflorescence 2- or 3-flowered. Pedicel ca. 0.1 cm, scaly; calyx lobes ca. 2 mm, oblong, with a few scales at base, margin ciliate; corolla funnelform, bluish purple or purple with tube white, 1–1.3 cm, tube 4–6 mm, throat pubescent; stamens 10, shorter than corolla, filaments villous; ovary 1.5–2 mm, densely scaly; style 0.9–1.2 cm, longer than stamens. Capsule ca. 4 mm, scaly. Fl. and fr. Jun.

- Forests; 3200–3300 m. E Qinghai.

**101. *Rhododendron gologense*** C. J. Xu & Z. J. Zhao, Fl. Lign. Qinghaica, Add. 2. 1987.

果洛杜鹃 guo luo du juan

Small, erect shrubs, 0.5–1 m tall; branches of current year slender, densely brown scaly. Petiole 1.5–2 mm, scaly; leaf blade elliptic or oblong, 1.5–2 × 0.4–0.8 cm; base broadly cuneate or rounded; apex rounded; abaxial surface pale yellow-green, scales contiguous or nearly so, 2-colored, pale yellowish white and dark brown intermixed; adaxial surface dark green, scales slightly contiguous or contiguous, golden. Inflorescence 1- or 2-flowered. Pedicel 0.5–1 cm, scaly, pubescent; calyx lobes ca. 3 mm, oblong, scales absent, glabrous; corolla funnelform, purple, 1–1.2 cm, tube ca. 5 mm, throat pubescent; stamens 10, 0.9–1 cm, shorter than or equal to corolla, filaments villous; ovary ca. 2 mm, densely scaly; style ca. 1.1 cm, longer than stamens, sparsely pubescent. Fl. Aug.

- Forests; ca. 3800 m. SE Qinghai.

**102. *Rhododendron declivatum*** Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 89. 1983.

徒生杜鹃 tu sheng du juan

Small shrubs, 0.3–0.4 m tall; branchlets ferruginous to black scaly. Petiole ca. 1.5 mm, scaly; leaf blade broadly elliptic, 1–1.5 × 0.6–1 cm; base broadly cuneate or rounded; apex

rounded, mucronate; abaxial surface pale brown or fawn, scales contiguous, 2-colored, pale yellow and reddish brown, nearly equal in number and intermixed; adaxial surface dark green, scales slightly contiguous. Inflorescence 2–4-flowered. Pedicel ca. 0.2 cm, scaly; calyx salver-shaped; lobes 0.8–1.5 mm, broadly triangular or orbicular, scales absent, margin ciliate; corolla narrowly funnelform, purple, ca. 1.4 cm, tube ca. 4 mm, throat pubescent; stamens 10, shorter than corolla, filaments pubescent in lower part; ovary 1.5–1.8 mm, densely scaly; style ca. 8 mm, longer than stamens, sparsely pubescent at base. Capsule ovoid or globose, 3–4 mm, densely scaly. Fl. Jul–Aug, fr. Sep–Oct.

- Scrub on mountain slopes; 2600–3800 m. SW Shaanxi (Taibai Shan).

**103. *Rhododendron taibaiense*** Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 88. 1983.

陕西杜鹃 shan xi du juan

Small, much-branched prostrate shrubs, 0.2–0.3 m tall; branches with dense ferruginous-black flaky scales. Petiole 0.8–1 mm, scaly; leaf blade broadly elliptic or oblong, 1–2.5 × 0.5–1 cm; base obtuse; apex rounded, mucronate; abaxial surface grayish yellow-brown, scales slightly contiguous, 2-colored, pale yellow and russet brown, nearly equal in number and intermixed; adaxial surface dark green, scales nearly contiguous, ruby red, shiny. Inflorescence 2-flowered. Pedicel ca. 0.2 cm, scaly; calyx lobes 3.5–4 mm, oblong, scales forming a dense central band, margin long-ciliate; corolla funnelform, pale purple, ca. 1.6 cm, tube 4–5 mm, throat pubescent; stamens 10, shorter than corolla, varying, filaments villous in lower part; ovary 2–3 mm, sparsely scaly; style 1.4–2 cm, longer than corolla, glabrous. Capsule ovoid, 3–4 mm, scaly. Fl. Jul–Aug, fr. Aug–Sep.

- Forest margins, open alpine slopes; ca. 3000 m. C Shaanxi.

**104. *Rhododendron nivale*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 26(B). 1851.

雪层杜鹃 xue ceng du juan

Small, much-branched prostrate or erect shrubs, usually forming dense cushions, (0.3–)0.6–0.9(–1.2) m tall; branches densely dark ferruginous scaly. Petiole 0.5–2(–3) mm, scaly; leaf blade elliptic, ovate or rounded, 0.35–0.9(–1.2) × (0.15–)0.2–0.5(–0.6) cm; base broadly cuneate; apex acute or rounded, occasionally mucronulate; abaxial surface yellowish green to fawn, scales contiguous or nearly contiguous, 2-colored, pale golden and dark brown intermixed, usually either equal in number or paler scales predominating; adaxial surface dark green, densely scaly, gray-white or golden. Inflorescence 1–2(–3)-flowered. Pedicel 0.05–0.15 cm, scaly, occasionally pubescent; calyx lobes (0.1–)2–4(–4.5) mm, oblong or narrowly lanceolate, scaly, margin ciliate and/or scaly; corolla broadly funnelform, pink, or lilac to purple, (0.7–)0.9–1.4(–1.6) cm, tube (2.5–)3–4(–6) mm, outer surface rarely scaly, often pubescent, throat pubescent; stamens (8–)10, longer or shorter than corolla, filaments villous towards base; ovary 1–2 mm, scaly; style usually longer than stamens. Capsule ovoid to rounded, 3–5 mm, scaly. Fl. May–Aug, fr. Aug–Sep.

Forest margins, *Rhododendron* thickets, alpine meadows, moorlands, swampy grassland, open bogs, damp places, open mountainsides, dry rocky slopes, screes, cliffs, ice gorges; 3100–5800 m. S Qinghai, W Sichuan, E and S Xizang, C and W Yunnan [Bhutan, Nepal, Sikkim].

- 1a. Calyx ± obsolete ..... 104b. subsp. *boreale*
- 1b. Calyx lobes 2–4(–4.5) mm.
  - 2a. Leaf apex rounded; calyx lobe margin scaly ..... 104a. subsp. *nivale*
  - 2b. Leaf apex usually acute; calyx lobe margin ciliate ..... 104c. subsp. *australe*

**104a. *Rhododendron nivale* subsp. *nivale***

雪层杜鹃(原亚种) xue ceng du juan (yuan ya zhong)

*Rhododendron paludosum* Hutchinson & Kingdon Ward.

Leaf apex rounded. Calyx lobes 2–4(–4.5) mm, margin scaly. Fl. May–Jul, fr. Aug–Sep.

*Rhododendron* thickets, alpine meadows, open bogs, open mountainsides, screes, ice gorges; 3200–5800 m. S Qinghai, E and S Xizang [Bhutan, Nepal, Sikkim].

**104b. *Rhododendron nivale* subsp. *boreale*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 52. 1975.

北方雪层杜鹃 bei fang xue ceng du juan

*Rhododendron alpicola* Rehder & E. H. Wilson; *R. alpicola* var. *strictum* Rehder & E. H. Wilson; *R. batangense* I. B. Balfour & Forrest; *R. nigropunctatum* Bureau & Franchet; *R. oreinum* I. B. Balfour; *R. oresbium* I. B. Balfour & Kingdon Ward; *R. ramosissimum* Franchet; *R. stictophyllum* I. B. Balfour; *R. vicarium* I. B. Balfour; *R. violaceum* Rehder & E. H. Wilson; *R. yaragongense* I. B. Balfour.

Leaf apex rounded, mucronulate. Calyx small or obsolete. Fl. May–Jul, fr. Aug–Sep.

- Open moorlands, swampy grassland, dry rocky slopes; 3200–5400 m. S Qinghai, W Sichuan, E Xizang, W Yunnan.

*Rhododendron ×edgarianum* Rehder & E. H. Wilson (in Sargent, Pl. Wilson. 1: 508. 1913), described from Sichuan, was considered to be a natural hybrid between *R. nivale* subsp. *boreale* and an unknown species by Philipson and Philipson (Notes Roy. Bot. Gard. Edinburgh 34: 54. 1975).

**104c. *Rhododendron nivale* subsp. *australe*** M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 54. 1975.

南方雪层杜鹃 nan fang xue ceng du juan

Leaf apex usually acute. Calyx lobes 2–4(–4.5) mm, margin ciliate. Fl. Jul.

- Forest margins, alpine moorlands, damp places, cliffs; 3100–4500 m. SW Sichuan, C and NW Yunnan.

**105. *Rhododendron thymifolium*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 351. 1877.

千里香杜鹃 qian li xiang du juan

*Rhododendron polifolia* Franchet (1895), not *R. polifolia* (Linnaeus) Scopoli (1771); *R. spilantherum* Hutchinson.

Small, much-branched, fastigate erect shrubs, 0.3–1.3 m tall; branches densely dark brown scaly. Petiole 1–2 mm, scaly;

leaf blade elliptic, oblong, narrowly obovate or ovate-lanceolate, (0.3–)0.5–1.2(–1.8) × (0.18–)0.2–0.5(–0.7) cm; base narrowly cuneate; apex acute or obtuse, usually shortly mucronate; abaxial surface yellowish green, scales contiguous or overlapping, pale fawn, rarely intermixed with a few amber; adaxial surface pale green, densely scaly, silvery or pale yellow. Inflorescence 1(or 2)-flowered. Pedicel 0.05–0.15(–0.2) cm, scaly; calyx rimlike; lobes 0.5–1.2 mm, triangular, ovate to rounded, scaly, scales various, margin ciliate or not; corolla broadly funnelform, pale lavender-blue to deep purple, 0.6–1.2 cm, tube (2–)3–4 mm, outer surface usually scaly, throat pubescent; stamens 10, 1–1.4 cm, longer than corolla, filaments villous towards base or glabrous; ovary ca. 1 mm, scaly; style 3–6 mm or 9–16 mm, usually glabrous, rarely a few scales or hairs near base. Capsule ovoid, 2–3(–4.5) mm, scaly. Fl. May–Jul, fr. Sep–Oct.

- Forests, thickets, scrub, open alpine slopes, open moist slopes; 2400–4800 m. Gansu, Qinghai, N Sichuan.

**106. *Rhododendron yushuense*** Z. J. Zhao, Fl. Lign. Qinghai-ca, Add. 1. 1987.

玉树杜鹃 yu shu du juan

Small, erect shrubs, tufted; branches of current year densely covered with pale and dark scales. Petiole ca. 1 mm, scaly; leaf blade elliptic or oblong, 0.6–0.8 × 0.3–0.4 cm; base broadly cuneate or cuneate; apex rounded, not mucronulate; abaxial surface yellowish green, scales overlapping; uniformly pale yellow; adaxial surface dark green, scales contiguous or slightly overlapping, gray. Inflorescence usually 2-flowered. Pedicel 0.5–1 cm, scaly; calyx lobes ca. 1 mm, oblong, unequal, glabrous except for the scaly margin; corolla broadly funnelform, purple, 0.5–0.6 cm, tube ca. 2 mm, throat pubescent; stamens 10, 0.3–0.4 cm, shorter than corolla; ovary ca. 1.5 mm, scaly; style 3.5–4.5 mm, glabrous.

- About 4200 m. S Qinghai.

**107. *Rhododendron orthocladum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 104. 1919.

直枝杜鹃 zhi zhi du juan

Erect much-branched shrubs, (0.5–)1(–1.3) m tall; branchlets densely brown scaly. Petiole 0.8–2.5(–3) mm, scaly; leaf blade narrowly elliptic, lanceolate to linear-lanceolate, (0.5–)0.8–1.6(–2) × (0.1–)0.25–0.5(–0.6) cm; base cuneate or obtuse; apex obtuse, shortly or obscurely mucronate; abaxial surface yellowish brown to fawn, scales contiguous or almost so, golden to yellow brown, with few to many deeper brown scales intermixed; adaxial surface gray-green, scales dense, pale, translucent. Inflorescence (1–)2–4-flowered. Pedicel 0.15–0.2(–0.3) cm, scaly; calyx reddish, lobes usually unequal, 0.5–1.5 mm, triangular to rounded, scaly at base, margin occasionally with a few scales and cilia; corolla funnelform, pale to deep lavender-blue or deep purple, rarely whitish pink, 0.7–1.4 cm, tube 2–5 mm, outer surface not or only sparsely scaly, throat pubescent; stamens (8–)10(–11), shorter than to equaling corolla, filaments villous towards base; ovary (1–)2(–3) mm; style 0.35–0.5 cm or 1.5–1.6 cm, scales sparse or absent. Capsule ovoid, 2–5 mm, scaly. Fl. May–Jun, fr. Jul–Aug.

• Forest margins, thickets, alpine slopes, cliffs; 2500–4500 m. SW Sichuan, N Yunnan.

- 1a. Style 3.5–5 mm ..... 107a. var. *orthocladum*  
1b. Style 15–16 mm ..... 107b. var. *longistylum*

**107a. *Rhododendron orthocladum* var. *orthocladum***

直枝杜鹃(原变种) zhi zhi du juan (yuan bian zhong)

*Rhododendron microleucum* Hutchinson; *R. orthocladum* var. *microleucum* (Hutchinson) Philipson & M. N. Philipson.

Style 3.5–5 mm. Fl. May–Jun, fr. Jul–Aug.

• Forest margins, thickets, cliffs; 2500–4500 m. SW Sichuan, N Yunnan.

**107b. *Rhododendron orthocladum* var. *longistylum* M. N. Philipson & Philipson, Notes Roy. Bot. Gard. Edinburgh 34: 44. 1975.**

长柱直枝杜鹃 chang zhu zhi zhi du juan

Style 15–16 mm. Fl. Jul.

• Thickets, alpine slopes; ca. 3500 m. N Yunnan.

**108. *Rhododendron bulu* Hutchinson, *Rhododendron* Soc. Notes 3: 280. 1932.**

蜿蜒杜鹃 wan yan du juan

Erect and tufted or straggling shrubs, 0.3–1.6 m tall; branchlets densely scaly. Petiole 1–3(–4) mm, scaly; leaf blade elliptic, elliptic-ovate or oblong-elliptic, (0.8–)1.2–2.3 × 0.3–0.6(–0.8) cm; base broadly cuneate; apex rounded, obscurely mucronate; abaxial surface pale yellow, scales irregularly contiguous to overlapping, pale, tan, straw or brown, with some larger and darker scales among them; adaxial surface dark green, scales contiguous to overlapping. Inflorescence 1–3(–5)-flowered. Pedicel 1–2 cm, scaly; calyx reddish; lobes 1–2(–4) mm, triangular to slightly rounded, scaly, margin scaly and sparsely ciliate; corolla funnellform, pinkish purple to deep purple or occasionally white, (0.9–)1.1–1.2(–1.5) cm; tube 2.5–3(–5) mm; outer surface sparsely scaly, rarely pubescent; throat pubescent; stamens (8–)10; filaments pubescent towards base; ovary (1.5–)2–2.5 mm, scaly; style 1.2–1.7 cm, longer than stamens, base sparsely scaly and pubescent. Capsule ovoid, ca. 5 mm, densely scaly. Fl. May–Jun, fr. Jul–Sep.

• Mixed forests, thickets, wooded hillsides, scrub; 2900–3900 m. S Xizang.

**109. *Rhododendron telmateium* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 280. 1916.**

草原杜鹃 cao yuan du juan

*Rhododendron diacritum* I. B. Balfour & W. W. Smith; *R. drumonium* I. B. Balfour & Kingdon Ward; *R. idoneum* I. B. Balfour & W. W. Smith; *R. pycnocladum* I. B. Balfour & W. W. Smith.

Small densely branched, prostrate shrubs, usually forming cushions, (0.1–)1 m tall; branches scaly. Petiole 0.3–3 mm, scaly; leaf blade lanceolate, narrowly or broadly elliptic or orbicular, 0.3–1.2(–1.4) × 0.15–0.5(–0.65) cm; base cuneate; apex acute to rounded, strongly mucronate; abaxial surface

golden fawn, pale orange, brown to reddish brown, scales overlapping, mostly pale gold to reddish brown, with few to many darker scales among them; adaxial surface dark green, scales overlapping, pale golden. Inflorescence 1- or 2(–3)-flowered. Pedicel 0.05–0.15(–0.2) cm, scaly; calyx reddish purple or green; lobes 0.5–2(–3) mm, triangular, ovate to rounded, usually unequal, scaly, margin scaly and long-ciliate; corolla broadly funnellform, lavender, rose pink to deep purplish blue, (0.6–)0.7–1.1(–1.4) cm, tube 2–4 mm, outer surface scaly, often also pubescent, throat pubescent; stamens (8–)10(–11), as long as corolla, filaments pubescent towards base; ovary 1.5–2.5(–3) mm, scaly; style 0.3–1.7 cm, rarely pubescent and scaly at base. Capsule ovoid to cylindric, 3–4 mm, densely scaly. Fl. May–Jul, fr. Aug–Oct.

• Forest margins, *Rhododendron* thickets, rocky slopes, cliffs; (2700–)3200–3800(–5000) m. W Sichuan, C and N Yunnan.

**110. *Rhododendron joniense* Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 95. 1983.**

卓尼杜鹃 zhuo ni du juan

Small much-branched shrubs, up to 1 m tall; branches of current year densely ferruginous to dark brown scaly. Petiole ca. 1 mm, scaly; leaf blade narrowly oblong, 1–2 × 0.4–0.7 cm; base cuneate; apex rounded, not mucronate; abaxial surface deep brown, scales contiguous, 2-colored, pale yellow, with many brown scales among them; adaxial surface dark green, scales contiguous or nearly so. Inflorescence 3- or 4-flowered. Pedicel ca. 0.1 cm, scaly; calyx salver-shaped; lobes ca. 0.8 mm, rounded, usually unequal, scales forming a central band, margin ciliate; corolla narrowly funnellform, lavender, ca. 1.6 cm, tube ca. 4 mm, throat pubescent; stamens 10, slightly shorter than corolla, filaments usually pubescent to some extent; ovary ca. 1.5 mm, densely scaly; style to 1.1 cm, slightly longer than stamens, pubescent towards at base. Capsule ovoid, 3–4 mm, densely scaly. Fl. May, fr. Jun.

• Slopes, shady places; ca. 2500 m. S Gansu.

**111. *Rhododendron maowenense* Ching & H. P. Yang, Bull. Bot. Res., Harbin 3(2): 96. 1983.**

茂汶杜鹃 mao wen du juan

Erect much-branched virgate shrubs, 2–4 m tall; branches of current year densely ferruginous to dark scaly. Petiole ca. 1 mm, scaly; leaf blade elliptic, 0.6–1.2 × 0.3–0.5 cm; base broadly cuneate; apex rounded, strongly mucronate; abaxial surface yellow brown, scales contiguous, 2-colored, fuscous, with fawn-brown scales dispersed among them; adaxial surface dull green, scales nearly contiguous, yellow. Inflorescence 1-flowered. Pedicel 0.1–0.15 cm, scaly; calyx lobes ca. 2.2 mm, oblong or broadly ovate, usually unequal, scales present, forming a central band abaxially, margin ciliate or scaly; corolla broadly funnellform, yellow, 1–1.4 cm, tube ca. 5 mm, throat villous; stamens 8–10, slightly shorter than corolla, filaments villous towards base; ovary ca. 2 mm, densely scaly; style to 1.7 cm, longer than corolla and stamens, sparsely pubescent towards base. Capsule ovoid, ca. 3.5 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

• Alpine *Populus* and *Salix* forests; ca. 3000 m. N Sichuan.

**112. *Rhododendron lungchiense*** W. P. Fang, Acta Sci. Nat. Univ. Szechuan. 1957(2): 218. 1957.

龙溪杜鹃 long xi du juan

Shrubs small, much-branched, 0.6–1.2 m tall; branches sparsely scaly. Petiole 3–5 mm, densely scaly; leaf blade oblong to elliptic-oblong, 1.3–1.5 × 0.4–0.6 cm; base broadly cuneate; apex acute and mucronulate; abaxial surface scales ca. 1 × their own diameter apart, brown; adaxial surface densely brown scaly. Inflorescence 1- or 2-flowered; bud scales persis-

tent. Pedicel ca. 0.2 cm; calyx lobes 3–4 mm, ovate, margin ciliate; corolla funnelform, purple, 1.5–1.6 cm, tube 3–4 mm; stamens 8 or 9, long-exserted, filaments villous towards base; style ca. 1.7 cm, glabrous. Capsule not known. Fl. Jun.

- Forests, ridges; 3000–3500 m. NC Sichuan (Lixian).

The original author suggested an affinity with *Rhododendron nivale* subsp. *boreale* in *R.* subsect. *Lapponica*. The well-spaced scales on the abaxial surface of the leaf blade distinguish this species from the purple-flowered species of *R.* subsect. *Lapponica* from C and N Sichuan.

**8. *Rhododendron* subsect. *Saluenensia*** (Hutchinson) Sleumer, Bot. Jahrb. 74: 534. 1949.

怒江杜鹃亚组 nu jiang du juan ya zu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* ser. *Saluenensia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 587. 1930 [*“Saluenense”*].

Small shrubs, erect or creeping, 0.05–1.5 m tall; young shoots scaly, scales sessile or stalked, strap-shaped setae sometimes present. Leaf blade leathery; abaxial surface scales overlapping, often stalked, in 2 or more layers, brown or orange-pink; veins sometimes with strap-shaped setae; adaxial surface scaly or not. Inflorescence terminal, umbellate, 1–3(–5)-flowered; pedicels densely scaly, otherwise glabrous or hispid; calyx large, often tinged with red, 3–9 mm, 5-lobed to base, hairy on the margin; corolla broadly funnelform-campanulate to campanulate, purple, purplish red or deep red, often with darker spots inside, outer surface scaly or not, pubescent; stamens 10; ovary 5-locular, sometimes pubescent; style often longer than stamens, glabrous or pubescent at base. Capsule ovoid, 4–8 mm, surrounded by persistent calyx. Seed wingless.

Four species: China, India, Myanmar; four species (one endemic) in China.

- 1a. Young shoots, petioles, and pedicels densely hispid, with strap-shaped setae ..... 113. *R. saluenense*
- 1b. Young shoots, petioles, and pedicels not densely hispid, strap-shaped setae absent.
  - 2b. Leaf blade ovate, elliptic, or elliptic-lanceolate, 0.6–2 × 0.3–1 cm, base cuneate, apex acute, rarely obtuse, adaxial surface sparsely lepidote or not; pedicels 1.5–3.2 cm; creeping small shrubs ..... 116. *R. keleticum*
  - 2a. Leaf blade oblong-elliptic or ovate-elliptic, 1.5–3 × 0.8–1.8 cm, base obtuse, apex obtuse, adaxial surface densely lepidote; pedicels 0.8–1.5 cm; erect shrubs.
    - 3a. Leaf blade 0.5–2.5 cm, abaxial surface with scales not flattened, in 3–5 tiers ..... 114. *R. calostrotum*
    - 3b. Leaf blade (1.2–)1.8–3.8 cm, abaxial surface with scales flattened, in 2 or 3 tiers ..... 115. *R. riparioides*

**113. *Rhododendron saluenense*** Franchet, J. Bot. (Morot) 12: 263. 1898.

怒江杜鹃 nu jiang du juan

Erect or creeping shrubs, (0.05–)0.1–1.2(–1.5) m tall; young shoots densely scaly, hispid with brown strap-shaped setae. Petiole 2–4 mm, scaly, hispid; leaf blade elliptic or oblong-elliptic or ovate-elliptic, 0.7–3 × 0.8–1.4 cm; base often rounded, sometimes broadly cuneate; apex rounded, apiculate; abaxial surface scales overlapping, brown, pale brown or yellowish green, sometimes hispid with strap-shaped setae along veins; adaxial surface densely or sparsely scaly. Inflorescence terminal, 1–3-flowered. Pedicel red, 0.7–1.5 cm, scaly, sparsely or densely hispid; calyx reddish purple, lobes 5–9 mm, broadly ovate or ovate-elliptic, persistent in fruit, with or without abaxial scales, pubescent or sometimes hispid; corolla broadly funnelform-campanulate, purple, purplish red or deep red, inside with purple red spots, 1.4–3 cm, outer surface scaly or not, densely pubescent; stamens unequal, longer than tube but shorter than corolla; filaments densely pubescent at base; style red, longer than corolla, pubescent or not at base. Capsule ovoid, 5–9 mm. Fl. Jun–Aug, fr. after Aug.

*Rhododendron* thickets on rocky slopes, shrubby meadows on high mountains; 3000–4800 m. Sichuan, Xizang, Yunnan [Myanmar].

- 1a. Erect shrubs, to 150 cm; leaf blade (10–)15–30 mm; leaves and calyx sometimes with strap-shaped setae ..... 113a. var. *saluenense*
- 1b. Dwarf creeping shrubs, (5–)10–30(–60) cm; leaf blade 7–17 mm; strap-shaped setae absent ..... 113b. var. *prostratum*

**113a. *Rhododendron saluenense* var. *saluenense***

怒江杜鹃(原变种) nu jiang du juan (yuan bian zhong)

*Rhododendron amaurophyllum* I. B. Balfour & Forrest.

Erect shrubs, 0.3–1.2(–1.5) m tall. Leaf blade (1–)1.5–3 cm; adaxial surface dull, ± persistently scaly, usually hispid with strap-shaped setae. Calyx with abaxial scales, pubescent, sometimes hispid with strap-shaped setae; corolla 1.8–3 cm.

*Rhododendron* thickets on rocky slopes; 3000–4000 m. Sichuan, Xizang, Yunnan [Myanmar].

**113b. *Rhododendron saluenense* var. *prostratum*** (W. W. Smith) R. C. Fang, Acta Bot. Yunnan. 4: 256. 1982.

平卧怒江杜鹃 ping wo nu jiang du juan

*Rhododendron prostratum* W. W. Smith, Notes Roy. Bot.

Gard. Edinburgh 8: 202. 1914; *R. chameunum* I. B. Balfour & Forrest; *R. charidotis* I. B. Balfour & Farrer; *R. cosmetum* I. B. Balfour & Forrest; *R. saluenense* subsp. *chameunum* (I. B. Balfour & Forrest) Cullen.

Dwarf creeping shrubs, (0.05–)0.1–0.3(–0.6) m tall. Leaf blade 0.7–1.7 cm; adaxial surface shiny, scales absent when mature, lacking strap-shaped setae. Calyx with abaxial scales sparse or absent, pubescent or nearly glabrous; corolla 1.4–2.5 cm.

• *Rhododendron* thickets on rocky slopes, shrubby meadows on high mountains; (3300–)3800–4800 m. NW Yunnan.

Cubey (A cytological and morphological taxonomic study of *Rhododendron* L. subsection *Saluenensia*. PhD thesis, University of Liverpool. 2003) maintained the name *R. saluenense* subsp. *chameunum* for this taxon, implying that there is a geographical separation in the distributions of var. *saluenense* and var. *prostratum*. From the above descriptions it may be seen that var. *prostratum* generally occurs at higher altitudes than does var. *saluenense*.

**114. *Rhododendron calostrotum*** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 13: 35. 1920.

美被杜鹃 mei bei du juan

Small erect shrubs, 0.2–1 m tall; young shoots with dense stipitate or sessile scales, not hispid (strap-shaped setae absent). Petiole 2–6 mm, densely scaly, without strap-shaped setae; leaf blade ovate-elliptic to oblong-elliptic, or ovate, 0.5–2.5 × 0.3–1.4 cm, rounded or acuminate on both sides, apiculate; abaxial surface brown, scales dense, overlapping or arranged in 3–5 tiers, not flattened; adaxial surface dark, scales dense, 1 or more × their own diameter apart, veins of young leaves sometimes with strap-shaped setae. Inflorescence terminal, 1–2(–5)-flowered. Pedicel 0.8–1.5 cm, densely scaly, scales sometimes stipitate; calyx reddish purple or pale red, 5-lobed to the base; lobes 3–9 mm, elliptic, ovate or nearly rounded, ± pubescent or glabrous; corolla broadly funnel-form-campanulate, red or pale purple, 1–2.5 cm, outer surface scaly in the center or not scaly, densely pubescent; stamens unequal, longer than tube but shorter than corolla; filaments densely pubescent at base; ovary densely scaly, sometimes pubescent; style red, longer than stamens, glabrous or pubescent at base. Capsule ovoid, 6–8 mm. Fl. May–Jul, fr. Aug–Sep.

Rocky slopes in forests, thickets or rocky slopes in high mountains, often dominant; 3400–4600 m. Xizang, Yunnan [India, Myanmar].

- 1a. Calyx 4–9 mm; corolla 1.5–2.5 cm ..... 114a. var. *calostrotum*
- 1b. Calyx ca. 5 mm; corolla 1–1.8 cm ..... 114b. var. *calciphylum*

**114a. *Rhododendron calostrotum* var. *calostrotum***

美被杜鹃(原变种) mei bei du juan (yuan bian zhong)

*Rhododendron calostrotum* subsp. *riparium* (Kingdon Ward) Cullen; *R. kingdonii* Merrill; *R. riparium* Kingdon Ward (1930), not A. Wang & P. C. Tam (1978); *R. rivulare* Kingdon Ward (1929), not Handel-Mazzetti (1921).

Leaf blade ovate-elliptic or oblong-elliptic, 1.5–2.5 cm. Calyx 4–9 mm; corolla 1.5–2.5 cm.

Thickets or rocky slopes in high mountains, often dominant; 3400–4600 m. Xizang, Yunnan [India, Myanmar].

**114b. *Rhododendron calostrotum* var. *calciphilum*** (Hutchinson & Kingdon Ward) Davidian, *Rhododendron Camellia Year Book* 8: 87. 1954.

小叶美被杜鹃 xiao ye mei bei du juan

*Rhododendron calciphilum* Hutchinson & Kingdon Ward in J. B. Stevenson, Sp. Rhodod. 589. 1930.

Leaf blade ovate, 0.5–1.5 cm. Calyx ca. 5 mm; corolla 1–1.8 cm.

Rocky slopes in forests; 3700–3900 m. SE Xizang, NW Yunnan [Myanmar].

**115. *Rhododendron riparioides*** (Cullen) Cubey, *stat. nov.*

雪龙美被杜鹃 xue long mei bei du juan

Basionym: *Rhododendron calostrotum* I. B. Balfour & Kingdon Ward subsp. *riparioides* Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 123. 1978; *R. calostrotum* var. *riparioides* (Cullen) R. C. Fang.

Upright shrubs, to 1.5 m tall; young shoots with dense stipitate or sessile scales, strap-shaped setae absent. Petiole 2–6 mm, densely scaly, without strap-shaped setae; leaf blade elliptic to ovate-elliptic, (1.2–)1.8–3.8 × (0.6–)0.8–2 cm; margin lacking strap-shaped setae; apex generally acute; abaxial surface scales overlapping, arranged in 2–3 tiers, orange-pink; adaxial surface greenish blue-gray, matt. Inflorescence terminal, to 5-flowered. Pedicel 0.8–2 cm, lacking multicellular hairs; calyx reddish purple or pale red, 5-lobed to the base; lobes 4–7 mm, elliptic, ovate or nearly rounded, ± pubescent or glabrous; corolla openly funnel-campanulate, bright purple, with darker flecks; outer surface not scaly, pubescent; stamens 10, 1.2–1.8 cm; style longer than stamens, glabrous or pubescent at base. Capsule not known.

• Rocks above *Abies* forests; 3600–4800 m. NW Yunnan.

Janet C. Cubey (WSY) is acknowledged for her contribution to the account of this species. Recent research by Cubey (A cytological and morphological taxonomic study of *Rhododendron* L. subsection *Saluenensia*. PhD thesis, University of Liverpool. 2003) has shown that *R. calostrotum* var. (or subsp.) *riparioides* is consistently tetraploid ( $2n = 52^*$ ) and is therefore genetically isolated from the diploid *R. calostrotum* and its var. *calciphilum* ( $2n = 26$ ). This distinction is confirmed by the morphological differences mentioned above. For these reasons Cubey here proposes the name *R. riparioides*.

**116. *Rhododendron keleticum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 50. 1920.

独龙杜鹃 du long du juan

*Rhododendron calostrotum* I. B. Balfour & Kingdon Ward subsp. *keleticum* (I. B. Balfour & Forrest) Cullen; *R. radicans* I. B. Balfour & Forrest.

Creeping small shrubs, 0.05–0.3 m tall; young shoots with dense stipitate or sessile scales, lacking strap-shaped setae. Petiole 1–3 mm, densely scaly, glabrous; leaf blade leathery, elliptic-lanceolate, elliptic, or ovate, 0.6–2 × 0.3–1 cm; apex obtuse or rounded, apiculate; abaxial surface brown, scales dense, over-

lapping, arranged in 3–4 tiers, denticulate; adaxial surface scales usually absent, rarely present. Inflorescence terminal, 1(or 2)-flowered. Pedicel 1.5–3.2 cm, scaly, scales sometimes stipitate, glabrous or rarely with strap-shaped setae; calyx pale purplish red or green tinged with red, 5-lobed to the base; lobes 5–7 mm, ovate or ovate-lanceolate, persistent in fruit, abaxially ± scaly, sometimes also pubescent; corolla broadly campanulate, fresh purple or pale purplish red, inside with dark purple

spots, 1.5–2 cm, outer surface densely scaly or pubescent; stamens 10, slightly unequal, often half as long as corolla; filaments villous at base; ovary 5-locular, densely scaly; style red, longer than stamens, glabrous. Capsule ovoid, 4–7 mm. Fl. Jul–Sep, fr. Aug–Oct.

Bamboo forests and meadows in high mountains, thickets, slopes, rock faces; 3000–3900 m. SE Xizang, NW Yunnan [Myanmar].

**9. *Rhododendron* subsect. *Fragariiflora*** Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 122. 1978 [*“Fragariiflora”*].

草莓杜鹃亚组 cao mei du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Small shrublets, upright to prostrate, up to 0.3(–0.4) m tall. Leaves very small; leaf blade margin crenulate; abaxial surface scales vesicular, golden, veins prominent; adaxial surface scaly. Inflorescence terminal, 2–4(–6)-flowered. Pedicel scaly; calyx conspicuous, reddish to purple, 4–7 mm, 5-lobed, sparsely scaly. Corolla openly campanulate to almost rotate; tube short, lobes spreading, purple or pinkish purple, outer surface usually glabrous; stamens 10; ovary 5-locular; style longer than stamens, declinate, glabrous. Capsule ovoid, 4–7 mm. Seed wingless, not finned.

One species: Bhutan, China.

**117. *Rhododendron fragariiflorum*** Kingdon Ward, Gard. Chron., ser. 3, 86: 504. 1929 [*“fragariiflorum”*].

草莓花杜鹃 cao mei hua du juan

Shrubs dwarf, erect-spreading, usually straggling, prostrate, or forming a compact cushion, 0.05–0.3(–0.4) m tall; bud scales deciduous. Petiole 1–2 mm; leaf blade oblong-elliptic or oblong-ovate, 0.7–1.6 × 0.4–0.6 cm; base rounded; margin crenulate; apex rounded or obtuse; abaxial surface pale green, scales 0.5–6 × their own diameter apart; adaxial surface dark

green, shiny, scales golden, vesicular. Inflorescence 2–4(–6)-flowered. Pedicel 0.5–0.8(–1.2) cm, scaly, pubescent; calyx reddish or purple, 5-lobed to base; lobes 4–7 mm, oblong, ovate or elliptic, sparsely scaly; corolla purple or pinkish purple, 1–1.7(–1.9) cm, tube 3–6(–7) mm, outer surface usually glabrous, inner surface pubescent; stamens 10, filaments pubescent towards base; ovary densely scaly; style glabrous. Capsule ovoid, 4–7 mm, scaly. Fl. Jul, fr. Aug–Sep.

Open mountain slopes, turf slopes, swampy pastures; 3600–4600(–5000) m. SE Xizang [Bhutan].

**10. *Rhododendron* subsect. *Uniflora*** Sleumer, Bot. Jahrb. Syst. 74: 532. 1949.

单花杜鹃亚组 dan hua du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Dwarf shrubs, often prostrate and mat forming, to 0.5(–1) m tall. Leaves small; leaf blade margin revolute, crenate; abaxial surface scales not overlapping, golden or brown, often darkening with age; adaxial surface usually scaly. Inflorescence terminal, 1–3-flowered. Pedicel rigid, accrescent in fruit; calyx 1–7 mm, deeply 5-lobed, scaly, ciliate on margin; corolla broadly funnelform-campanulate or tubular-funnelform, purple to pinkish purple, pink, purplish mauve or yellow with spots within tube, outer surface mostly densely pubescent and sparsely scaly; stamens 10, shorter than corolla; ovary 5-locular; style straight, mostly glabrous, sometimes sparsely scaly at base. Capsule rounded or ovoid, to cylindrical, 4–13 mm. Seeds wingless, obscurely finned.

About four species: Bhutan, China, India, Myanmar, Nepal, Sikkim; four species in China.

- 1a. Calyx 5–7 mm; corolla yellow; leaf blade crenate ..... 118. *R. ludlowii*
- 1b. Calyx 1–3 mm; corolla pink, rose or purple; leaf blade entire.
  - 2a. Corolla campanulate, 8–21 mm; style shorter than stamens; leaf blade elliptic to obovate-elliptic ..... 119. *R. pumilum*
  - 2b. Corolla funnelform, 20–32 mm; style longer than stamens; leaf blade lanceolate, oblanceolate or oblong-obovate.
    - 3a. Abaxial leaf surface sparsely scaly, the scales 3–6 × their own diameter apart ..... 120. *R. uniflorum*
    - 3b. Abaxial leaf surface densely scaly, the scales 0.5–1.5 × their own diameter apart ..... 121. *R. pemakoense*

**118. *Rhododendron ludlowii*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 243. 1937.

广口杜鹃 guang kou du juan

Dwarf shrubs, often prostrate, evergreen, ca. 0.3 m tall. Petiole 1–2 mm, scaly; leaf blade leathery, obovate or obovate-elliptic, 0.9–1.7 × 0.5–1 cm; base rounded; margin crenulate-undulate; apex rounded, mucronulate; abaxial surface pale

green, scales 2–3 × their own diameter apart, large, brown; adaxial surface dark green, scaly. Inflorescence 1- or 2-flowered. Pedicel 1.5–2.5 cm, densely scaly; calyx deeply 5-lobed; lobes 5–7 mm, broadly ovate, persisting to enclose mature capsule, densely scaly, margin ciliate; corolla broadly campanulate, yellow with reddish brown spots inside tube, 1.5–3 × ca. 4 cm, tube ca. 14 mm, outer surface densely pubescent and scaly; stamens 10, shorter than corolla, filaments densely pubescent

towards base; ovary ovoid, densely scaly; style slender, straight, longer than stamens, shorter than corolla, glabrous. Capsule rounded, 4–5 mm, scaly. Fl. Apr–Jun, fr. Jul–Oct.

Rocky hillsides; 3900–4200 m. S Xizang [NE India].

**119. *Rhododendron pumilum*** J. D. Hooker, *Rhododendr. Sikkim-Himalaya* 2: t. 14. 1851.

矮小杜鹃 ai xiao du juan

Dwarf shrubs, evergreen, (0.05–)0.1(–0.25) m tall; branches long, prostrate, creeping or spreading, scaly. Petiole 1–2 mm, scaly; leaf blade leathery, ovate, elliptic, orbicular or obovate-elliptic, 0.8–1.9 × 0.4–1.2 cm; base rounded; apex rounded, mucronulate; abaxial surface pale grayish green, scales 2–3 (or more) × their own diameter apart, small, golden, brown, or dark brown; adaxial surface dark green, usually scaly. Inflorescence 1–3-flowered. Pedicel 1–2.6 cm, densely scaly, in fruit to 6 cm, rigid and erect; calyx reddish to purplish red, deeply 5-lobed; lobes 1–3 mm, ovate or oblong-ovate, persisting to enclose mature capsule, scaly, sparsely ciliate; corolla campanulate, pinkish purple to purple, 0.8–2.1 cm, outer surface sparsely scaly, pubescent; stamens 10, filaments densely pubescent towards base; ovary ovoid, densely scaly; style straight, shorter than stamens, ca. 1/2 as long as corolla, glabrous. Capsule ovoid or cylindrical-ovoid, 6–13 mm, densely scaly. Fl. Apr–Jun, fr. Jul–Sep.

Alpine turf slopes, open hillsides, banks, rocks; 3300–4300 m. SE Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

**120. *Rhododendron uniflorum*** Hutchinson & Kingdon Ward in J. B. Stevenson, *Sp. Rhodod.* 446. 1930.

单花杜鹃 dan hua du juan

Dwarf shrubs, evergreen, 0.1–0.5(–1) m tall; branches usually prostrate, creeping, scaly, sparsely puberulous. Petiole 1–4 mm, scaly; leaf blade leathery, oblong-ovate, oblong-ovate, or oblong-elliptic, 1.3–2.5 × 0.5–1.2 cm; base broadly cuneate; apex acute or rounded; abaxial surface pale green, scales 3–6 × their own diameter apart, small, at first golden; rapidly becoming dark brown; adaxial surface dark green or bright green, usually scaly. Inflorescence 1- or 2-flowered. Pedicel 1–2 cm, scaly, in fruit to 3.5 cm; calyx lobes 1–2.5 mm, ovate or oblong, persisting to enclose mature capsule, scaly, margin sparsely ciliate; corolla broadly funnelform, purple, 2.1–2.8 cm, tube 12–14 mm, outer surface densely pubescent and sparsely scaly; stamens 10, shorter than corolla, filaments pubescent towards base; ovary ovoid, 2–3 mm, densely scaly; style slender, straight, shorter than corolla, longer than stamens, glabrous.

**11. *Rhododendron* subsect. *Cinnabarina*** (Hutchinson) Sleumer, *Bot. Jahrb. Syst.* 74: 534. 1949.

朱砂杜鹃亚组 zhu sha du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Cinnabarina* Hutchinson in J. B. Stevenson, *Sp. Rhodod.* 221. 1930 [“*Cinnabarinum*”].

Shrubs, mostly evergreen, 1–7.5 m tall, rarely epiphytic; young shoots scaly. Leaf blade papery or leathery, variable in shape; abaxial surface scales small, usually unequal, close but not contiguous, broadly or narrowly rimmed; adaxial surface usually scaly.

Capsule cylindrical-ovoid or cylindrical, 6–10 mm, densely scaly. Fl. Apr–May.

Alpine grassy slopes or steeps; 3300–4000 m. SE Xizang [NE Myanmar].

- 1a. Leaf apex rounded ..... 120a. var. *uniflorum*
- 1b. Leaf apex acute ..... 120b. var. *imperator*

**120a. *Rhododendron uniflorum* var. *uniflorum***

单花杜鹃(原变种) dan hua du juan (yuan bian zhong)

Leaf apex rounded. Fl. Apr–May.

- Alpine grassy slopes or steeps; 3300–4000 m. SE Xizang.

**120b. *Rhododendron uniflorum* var. *imperator*** (Kingdon Ward) Cullen, *Notes Roy. Bot. Gard. Edinburgh* 36: 113, 1978.

尖叶单花杜鹃 jian ye dan hua du juan

*Rhododendron imperator* Hutchinson & Kingdon Ward in J. B. Stevenson, *Sp. Rhodod.* 440. 1930.

Leaf apex acute.

SE Xizang [NE Myanmar].

*Rhododendron uniflorum* var. *imperator* has been found around the Doshong La in S Xizang, and is reported to be much commoner there than the type variety.

**121. *Rhododendron pemakoense*** Kingdon Ward, *Gard. Chron.*, ser. 3, 88: 298. 1930.

假单花杜鹃 jia dan hua du juan

Dwarf shrubs, erect to prostrate, evergreen, 0.3–0.6(–0.8) m tall, scaly, pubescent. Petiole 1–3 mm, sparsely scaly; leaf blade leathery, obovate, oblong-ovate or obovate-elliptic, 1–2(–3) × 0.5–1(–1.5) cm; base cuneate; apex acute or rounded; abaxial surface pale green, scales 0.5–1.5 × their own diameter apart, small, unequal, golden when young, often becoming dark brown; adaxial surface grayish green, usually scaly. Inflorescence 1- or 2-flowered. Pedicel slender, 0.5–1.5 cm, scaly, in fruit to 3.8 cm; calyx reddish purple; lobes 1–2(–4) mm, ovate-lanceolate or oblong, densely scaly, margin long-ciliate; corolla tubular-campanulate or tubular-funnelform, pink to pale purple, purplish mauve, 2.4–3.5 cm, tube slightly longer than corolla lobes; outer surface densely pubescent and sparsely scaly; stamens 10, shorter than corolla, filaments densely pubescent towards base; ovary ovoid, 2–3 mm, densely scaly; style slender, straight, as long as or longer than corolla, base glabrous or sparsely scaly. Capsule cylindrical, 6–10 mm, densely scaly. Fl. Apr–Jun, fr. Sep–Oct.

Cliffs, ledges, ravine sides; 2900–3600 m. SE Xizang [NE India].



Inflorescence terminal or axillary, 2–6(–8)-flowered. Pedicel scaly. Flowers usually pendulous, nectar copious. Calyx small, 1–2 mm, discoid or undulate, scaly, sometimes ciliate on margin; corolla tubular to narrowly or shortly campanulate, fleshy, waxy, lobes short, cinnabar red, crimson, purple to bright pinkish mauve, or yellow to bicolored, yellow and orange, creamy yellow, or salmon pink, often pruinose outside; stamens 10(–12), shorter or slightly longer than corolla; ovary 5-locular; style longer than stamens, declinate, glabrous or pubescent at base. Capsule cylindric, 8–15 mm, scaly. Seeds wingless, obscurely finned.

About eight species: Bhutan, China, India, Myanmar, Nepal, Sikkim; six species (three endemic) in China.

- 1a. Abaxial leaf surface puberulous, with scales uniform in size ..... 127. *R. lateriflorum*
- 1b. Abaxial leaf surface not puberulous, with scales unequal in size.
  - 2a. Inflorescences terminal, umbellate; corolla lobes 1/3–1/2 as long as corolla, spreading.
    - 3a. Leaves generally more than 2.2 × as long as broad; corolla tubular to narrowly campanulate, variable in color: yellow to cinnabar red (sometimes 2-colored), deep plum crimson, or rarely plum purple ..... 122. *R. cinnabarinum*
    - 3b. Leaves generally less than 2.2 × as long as broad; corolla campanulate, creamy yellow or purple .... 123. *R. xanthocodon*
  - 2b. Inflorescences terminal and axillary, shortly racemose; corolla lobes ca. 1/4 as long as corolla, erect.
    - 4a. Leaf blade elliptic to obovate; inflorescence usually 2- or 3-flowered; stamens 10–12; calyx deeply 5-lobed, lobes ca. 1.5 mm ..... 126. *R. igneum*
    - 4b. Leaf blade lanceolate, lanceolate-oblong, oblanceolate-ovate to long-ovate; inflorescence usually 4–6-flowered; stamens 10; calyx shallowly 5-lobed, lobes ca. 1 mm.
      - 5a. Leaf blade leathery, (3–)4–8(–15) cm, scales on abaxial surface dense, ca. their own diameter apart; style usually pubescent towards base ..... 124. *R. keysii*
      - 5b. Leaf blade papery, 8–19 cm, scales on abaxial surface sparse, 1–2 × their own diameter apart; style glabrous ..... 125. *R. tenuifolium*

**122. *Rhododendron cinnabarinum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 1: t. 8. 1849.

朱砂杜鹃 zhu sha du juan

Shrubs, often straggling, usually evergreen, rarely semideciduous, 1–3(–7) m tall. Petiole 5–20 mm, scaly; leaf blade leathery, narrowly to broadly elliptic, oblong-elliptic to oblong-lanceolate or ovate, 3–6(–11) × 1.5–2.5(–5) cm, more than 2.2 × as long as broad; base usually rounded; apex obtuse, mucronate; abaxial surface pale glaucous-green, scales 0.5–1 × their own diameter apart, or nearly contiguous, usually unequal, brown or brown-red, rather fleshy; adaxial surface grayish green, usually scaly. Inflorescence terminal, umbellate, 2–4(–7)-flowered. Pedicel 0.5–1(–1.6) cm; calyx discoid or undulate, 1–2 mm, usually scaly; corolla tubular to narrowly campanulate, variable in color: yellow to cinnabar red (sometimes 2-colored), deep plum crimson, or rarely plum purple, 2.5–3.8 cm, fleshy; lobes spreading, ca. 1/3 as long as corolla, without or rarely with scales abaxially; stamens 10, slightly shorter than corolla, filaments pubescent towards base, rarely glabrous; ovary scaly, apex sometimes puberulous; style sparsely pubescent towards base or glabrous. Capsule cylindric or cylindric-ovoid, ca. 10 mm, densely scaly. Fl. May, fr. Sep.

Forests, open woodlands, forest margins, *Rhododendron* thickets, among shrubs, hillsides; 1900–4000 m. S Xizang, NW Yunnan [Bhutan, NE India, NE Myanmar, Nepal, Sikkim].

- 1a. Corolla plum purple, lobes with scales abaxially ..... 122b. subsp. *tamaense*
- 1b. Corolla yellow to cinnabar red (sometimes 2-colored) or deep plum crimson, lobes without scales abaxially ..... 122a. subsp. *cinnabarinum*

**122a. *Rhododendron cinnabarinum*** subsp. *cinnabarinum*

朱砂杜鹃(原亚种) zhu sha du juan (yuan ya zhong)

Leaf blade oblong-elliptic to oblong-lanceolate, or ovate to

elliptic. Corolla tubular to narrowly campanulate, yellow to cinnabar red (sometimes 2-colored) or deep plum crimson; lobes without scales abaxially.

Forests, open woodlands, among shrubs, hillsides; 1900–4000 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].

Two varieties have been recorded from China: var. *cinnabarinum* and var. *roylei* (J. D. Hooker) Hutchinson in J. B. Stevenson, Sp. Rhodod. 222. 1930; *R. roylei* J. D. Hooker, Rhododendr. Sikkim-Himalaya 1: t. 7. 1849 [“*roylii*”]. The latter taxon is distinguished by its deep plum crimson corolla. The populations of var. *cinnabarinum* in W Bengal, India, exhibit a range of corolla colors, from yellow or orange, through 2-colored forms, to deep cinnabar.

*Rhododendron cinnabarinum* var. *purpurellum* Cowan (Notes Roy. Bot. Gard. Edinburgh 21: 147. 1951) has also been recorded from China and was accepted by Yang in FRPS (57(1): 136. 1999). However, Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 124. 1980) treated it as a purple-flowered variant in the synonymy of *R. cinnabarinum* subsp. *xanthocodon* (*R. xanthocodon* in the present account).

**122b. *Rhododendron cinnabarinum*** subsp. *tamaense* (Davidian) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 113. 1978.

龙江朱砂杜鹃 long jiang zhu sha du juan

*Rhododendron tamaense* Davidian, Rhododendron Magnolias Camellias 1972: 54. 1972.

Leaves semideciduous; leaf blade more than 2.2 × as long as broad. Corolla narrowly campanulate, plum purple; lobes with scales abaxially.

Forest margins, *Rhododendron* thickets; 3300–3500 m. NW Yunnan (Dulongjiang) [NE Myanmar].

**123. *Rhododendron xanthocodon*** Hutchinson, Gard. Chron., ser. 3, 95: 409. 1934.

黄铃杜鹃 huang ling du juan

*Rhododendron cinnabarinum* J. D. Hooker var. *purpureolum* Cowan; *R. cinnabarinum* subsp. *xanthocodon* (Hutchinson) Cullen; *R. concatenans* Hutchinson.

Erect shrubs or small trees, evergreen, 1.5–7.5 m tall. Petiole 8–15 mm, scaly; leaf blade leathery, elliptic or oblong-elliptic, 3–7.5 × 1.5–4.5 cm, less than 2.2 × as long as broad; base usually rounded; apex obtuse, mucronate; abaxial surface pale green, scales less than 1 × their own diameter apart, unequal, dark brown, brown or golden; adaxial surface olive green, shiny, scales dense. Inflorescence terminal, shortly racemose or nearly umbellate, 2–6(–8)-flowered. Pedicel usually 1.5–2.5 cm, sparsely scaly; calyx lobes 1–2 mm, shortly triangular or ovate, densely scaly abaxially and on margin; corolla tubular-campanulate, creamy yellow, 2.5–3.2 cm; lobes slightly spreading, rounded to oblong, 1/3 as long as corolla; stamens 10, shorter than corolla, filaments pubescent towards base; ovary densely scaly; style longer than stamens, glabrous. Capsule cylindrical, ca. 13 mm, densely scaly. Fl. May–Jul.

*Abies* forests, mixed forests; 2900–4100 m. Xizang [Bhutan, NE India].

The pedicels are sometimes short in material that is otherwise typical *Rhododendron xanthocodon*. Both this species and its synonym, *R. concatenans*, were described from cultivated material, so the length of the pedicels and the number of flowers per inflorescence could well have been atypical. In distinguishing *R. xanthocodon* from *R. cinnabarinum*, the ratio between the leaf length and width is reasonably, though not exclusively, diagnostic.

**124. *Rhododendron keysii*** Nuttall, Hooker's J. Bot. Kew Gard. Misc. 5: 353. 1853.

管花杜鹃 guan hua du juan

*Rhododendron keysii* var. *unicolor* Hutchinson.

Erect shrubs, evergreen, rarely epiphytic, 1–4(–6) m tall; branches slender, straggling. Petiole 5–16 mm, scaly; leaf blade leathery, lanceolate-elliptic or lanceolate-oblong, (3–)4–8(–15) × 1–3(–4) cm; base cuneate; apex acute; abaxial surface pale green, scales less than 1 × their own diameter apart, unequal, dark brown to brown, broadly rimmed; adaxial surface dark green, shiny, scales dense, brown, 1–3 × their own diameter apart. Inflorescence usually axillary, shortly racemose, (2–)4–6-flowered; flowers pendulous. Pedicel slender, 0.4–0.8 cm, sparsely scaly; calyx lobes ca. 1 mm, shortly ovate, scaly, margin ciliate; corolla tubular, slightly ventricose, orange or salmon pink to deep red, (1.4–)1.8–2.5 cm; lobes erect, oblong, small; stamens 10, filaments densely pubescent proximally; style usually pubescent proximally. Capsule cylindrical, 8–10 mm, densely scaly. Fl. Jun–Jul, fr. Oct.

Forests, thickets; 2400–4300 m. S Xizang [Bhutan, NE India, Sikkim].

**125. *Rhododendron tenuifolium*** R. C. Fang & S. H. Huang, Fl. Xizangica 3: 647. 1986.

薄叶管花杜鹃 bao ye guan hua du juan

Erect shrubs, ca. 3 m tall; young branches brown, densely scaly. Leaf blade papery, lanceolate, or oblanceolate-ovate to

long-ovate, 8–19 × 1.6–4.3 cm; base tapering; apex acute or rounded; abaxial surface scales 1–2 × their own diameter apart, unequal, the larger scales dark brown, smaller pale brown, broadly rimmed; adaxial surface sparsely scaly, scales of two colors, dark brown or pale brown. Inflorescence axillary, shortly racemose, 5- or 6-flowered; flowers pendulous. Pedicel slender, 0.4–0.8 cm, scaly; calyx undulate, small, densely scaly, margin ciliate; corolla tubular, salmon pink, ca. 2 cm; lobes erect, oblong; stamens 10, slightly longer than corolla, filaments sparsely pubescent proximally; ovary densely scaly; style glabrous.

• *Tsuga* forests; ca. 3000 m. S Xizang.

**126. *Rhododendron igneum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 235. 1937.

肉红杜鹃 rou hong du juan

Shrubs, (2.5–)3–4 m tall; branches slender, scaly. Petiole 5–6 mm, densely scaly; leaf blade papery, broadly elliptic, or elliptic, sometimes nearly obovate, 3–7 × 2–3 cm; base obtuse or tapering; apex acute or obtuse, mucronate; abaxial surface pale yellowish green, scales ca. 2 × their own diameter apart; adaxial surface green, sparsely yellowish scaly. Inflorescence terminal or axillary, 2- or 3-flowered. Pedicel ca. 1 cm, densely scaly; calyx lobes distinct, ca. 1.5 mm, scaly, margin scaly and ciliate; corolla tubular, scarlet, ca. 2 cm; lobes 5–6, triangular or nearly ovate, ca. 0.4 cm; stamens 10–12, slightly longer than corolla, filaments sparsely pubescent towards base; ovary densely scaly; style longer than corolla, pubescent toward base. Fl. Jul.

• Dense mixed forests; ca. 2800 m. SE Xizang.

*Rhododendron igneum* is very close to *R. keysii*, but differs in the broader leaves, fewer flowers in the inflorescence, and in the slightly longer calyx lobes. It has been treated as a synonym of the latter species by some authors.

**127. *Rhododendron lateriflorum*** R. C. Fang & A. L. Chang, Notes Roy. Bot. Gard. Edinburgh 41: 160. 1983.

侧花杜鹃 ce hua du juan

Shrubs, evergreen, ca. 5 m tall; juvenile branchlets grayish brown, with dense small caducous scales. Petiole 8–14 mm, scaly; leaf blade leathery, narrowly oblong or lanceolate, 4.5–8 × 0.9–1.9 cm; base cuneate; apex acute, mucronate; abaxial surface glaucescent, scales 1–2 × their own diameter apart, puberulous; adaxial surface scales dense. Flowers not seen, infructescence shortly racemose, 2–3-fruited. Fruiting pedicels curved ca. 2–3 cm, densely scaly; fruiting calyx lobes ca. 1 mm, triangular, scaly, persistent; style slender, persistent, densely pubescent towards base. Capsule shortly cylindrical, 10–15 × 4–5 mm, densely scaly. Fr. May–Nov.

• Forests, valleys; 2700–3400 m. NW Yunnan.

The flowers of this distinctive species are not known. It is possible that *Rhododendron lateriflorum* should be placed in some other subsection, as the puberulous abaxial leaf surfaces are quite unlike those of the remaining species in *R.* subsect. *Cinnabarina*.

12. *Rhododendron* subsect. *Tephropepla* Sleumer, Bot. Jahrb. Syst. 74: 532. 1949.

灰背杜鹃亚组 hui bei du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Small to moderately sized shrubs, 0.3–3(–5) m tall sometimes epiphytic; young shoots scaly, sometimes puberulous. Leaf blade leathery, mostly relatively narrow; abaxial surface often pale glaucous green, papillose, scales usually deeply sunk in pits, sometimes of 2 forms, golden, brown or dark brown to black; adaxial surface usually scaly, occasionally glabrous or puberulous. Inflorescence usually terminal, rarely axillary, umbellate or racemose-umbellate, (1–)3–9-flowered. Pedicels scaly; calyx large, (2–)3–8 mm, deeply 5-lobed, scaly, margin sometimes ciliate; corolla tubular-campanulate to funnel-campanulate, pink, white, or yellow; outer surface usually scaly, sometimes glabrous; stamens 10, declinate; ovary 5-locular; style straight, glabrous or scaly at base. Capsule cylindrical, 5–10 mm, scaly. Seeds wingless, obscurely finned.

Six species: China, India, Myanmar; six species (four endemic) in China.

- 1a. Scales on abaxial leaf surface very distant, usually 2–4 × their own diameter apart; inflorescence racemose; calyx lobes oblong to lanceolate.
  - 2a. Corolla purplish, 2.5–2.8 cm ..... 133. *R. tsinlingense*
  - 2b. Corolla white to pink, 1.3–2.5 mm.
    - 3a. Leaf blade 5–13 cm, with conspicuous acuminate drip tip; corolla ca. 2.5 cm, white; calyx ca. 8 mm ..... 131. *R. hanceanum*
    - 3b. Leaf blade 1.6–6 cm, acute, without a conspicuous drip tip; corolla 1.3–2 cm, white to pink; calyx 2–3.5 mm ..... 132. *R. longistylum*
- 1b. Scales on abaxial leaf surface contiguous or up to their own diameter apart; inflorescence umbellate or racemose-umbellate; calyx lobes usually rounded.
  - 4a. Corolla pink to deep purplish rose, outside often not scaly; calyx 5–8 mm, lobes spreading ..... 130. *R. tephropeplum*
  - 4b. Corolla cream to yellow, outside often scaly; calyx 3–5 mm, lobes erect or reflexed.
    - 5a. Stem and branches with rough bark; calyx lobes erect; scales on abaxial leaf surface not contiguous or overlapping ..... 128. *R. xanthostephanum*
    - 5b. Stem and branches with smooth bark; calyx lobes reflexed; scales on abaxial leaf surface contiguous or overlapping ..... 129. *R. auritum*

128. *Rhododendron xanthostephanum* Merrill, Brittonia 4: 148. 1941.

鲜黄杜鹃 xian huang du juan

*Rhododendron aureum* Franchet, J. Bot. (Morot) 9: 394. 1895, not Georgi (1775).

Shrubs, evergreen, 1–3(–5) m tall; mature bark smooth, reddish brown, somewhat pruinose; branchlets densely scaly. Petiole 5–13 mm, scaly; leaf blade leathery, oblong-lanceolate, (3–)5–8(–10) × (1–)2–2.5(–3) cm; base usually cuneate; apex acute or rounded, mucronate; abaxial surface silvery brown, scales ca. 0.5 × their own diameter apart, small, unequal, most sunk in pits; adaxial surface brownish green, scaly. Inflorescence usually terminal, racemose-umbellate, 3–5-flowered. Pedicel (0.3–)0.5–0.7(–1.8) cm, densely scaly; calyx lobes (2–)3–5(–7) mm, rounded, ovate or oblong, erect or spreading, scaly, not ciliate; corolla tubular-campanulate, bright to deep yellow, (1.8–)2–2.5(–2.8) cm, outer surface scaly, lobes shorter than tube; stamens 10, ca. as long as corolla, filaments pubescent towards base; ovary densely scaly; style slender, straight, longer than corolla, scaly at base. Capsule cylindrical, (5–)8–10(–11) mm, scaly.

*Abies* and *Pinus* forests, woods, scrub, cliffs; 1500–3500(–4000) m. SE Xizang, NW Yunnan [NE India, N Myanmar].

129. *Rhododendron auritum* Tagg, *Rhododendron* Soc. Notes 3: 278. 1932.

折萼杜鹃 zhe e du juan

Shrubs, evergreen, 1–3 m tall; stem and branches coppery red, with brown, smooth, flaking bark. Petiole 5–8 mm, scaly; leaf blade leathery, oblong, lanceolate or oblong-lanceolate, 2.5–6.6 × 1–2.7 cm; base obtuse or cuneate; apex acute or obtuse, mucronate; abaxial surface pale glaucous-green, scales overlapping to 0.5 × their own diameter apart, unequal, smaller scales more numerous, brown or dark brown, larger scales scattered; adaxial surface green, shiny, scaly. Inflorescence terminal or axillary, umbellate, 4–7-flowered. Pedicel 0.5–1.3 cm, densely scaly; calyx lobes 3–5 mm, rounded, ovate or oblong, reflexed, persistent in fruit, scaly abaxially, margin not ciliate; corolla tubular-campanulate, pale yellow to cream, sometimes with a slight tinge of pink on lobes, (1.8–)2–2.5 cm, outer surface scaly; stamens 10, ca. as long as corolla, filaments pubescent towards base; ovary densely scaly; style slender, as long as or longer than corolla, basal 1/3–1/2 scaly, otherwise glabrous. Capsule cylindrical-ovate, 8–10 mm, densely scaly. Fl. Apr–Jun, fr. Jul–Sep.

• Valleys, open stony banks, sheltered cliffs; 2100–2600 m. SE Xizang.

130. *Rhododendron tephropeplum* I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 13: 302. 1922.

灰被杜鹃 hui bei du juan

Shrubs, evergreen, 0.3–1.5 m tall; bark brown, peeling. Petiole 3–10 mm, scaly; leaf blade leathery, oblong-obovate, narrowly oblanceolate, to narrowly elliptic, (2–)5–7(–10) × (1–)1.5–2.5(–4) cm; base cuneate; apex obtuse, mucronate; abaxial

surface pale glaucous-green, papillose, scales ca. 0.5 × their own diameter apart, sometimes in 2 sizes, the smaller black or brown, with or without widely scattered larger scales; adaxial surface dark green, shiny, scaly. Inflorescence terminal or axillary, umbellate, 3–9-flowered. Pedicel 1–3 cm, densely scaly; calyx lobes 5–8 mm, oblong to rounded, erect or spreading, persistent in fruit, sparsely scaly, margin ciliate or not; corolla tubular-campanulate, pale or dark rose, pink, or purple, 1.5–3.2 cm; tube 11–20 mm, outer surface usually sparsely scaly; stamens 10, shorter than corolla, filaments pubescent towards base; ovary densely scaly; style slender, nearly as long as corolla, longer than stamens, scaly at base or along lower 1/2, otherwise glabrous. Capsule cylindrical-ovate, 5–10 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

Alpine meadows, rocky slopes, open stony banks, screes, cliffs; 2400–4600 m. SE Xizang, NW Yunnan [NE India, NE Myanmar].

**131. *Rhododendron hanceanum*** Hemsley, J. Linn. Soc., Bot. 26: 24. 1889.

疏叶杜鹃 *shu ye du juan*

Shrubs, evergreen, 1–2 m tall; branchlets scaly. Petiole 4–9 mm, densely scaly; leaf blade leathery, ovate-lanceolate to obovate, 5–13 × 2–6 cm; base tapering to broadly cuneate or rounded; apex acuminate with a conspicuous drip tip; abaxial surface pale green, scales 2–3 × their own diameter apart, small, golden brown; adaxial surface bright green, glabrous. Inflorescence terminal, racemose, 7–9-flowered; rachis to 15 mm. Pedicel ca. 1 cm, scaly; calyx lobes ca. 8 mm, ovate-oblong to lanceolate, persistent in fruit, densely scaly abaxially, margin ciliate; corolla funnel-campanulate, white, ca. 2.5 cm, tube ca. 13 mm, outer surface sparsely scaly, inner surface sparsely pilose at base; stamens 10, filaments pilose towards base; ovary densely scaly; style slender, longer than stamens and shorter than corolla, glabrous. Capsule long-cylindrical, ca. 10 mm, densely scaly. Fl. Apr–May, fr. Oct.

• Cliffs; 1200–2500 m. C Sichuan.

**132. *Rhododendron longistylum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 514. 1913.

长柱杜鹃 *chang zhu du juan*

Shrubs, evergreen, 0.5–2 m tall; branchlets slender, sparsely scaly, usually puberulous. Petiole 2–6 mm, scaly, sometimes also puberulous; leaf blade oblong-obovate, to oblanceolate, 1.6–6 × 0.6–1.5 cm; base tapering; apex acute, mucronate; abaxial surface pale green, scales 2–4 × their own diameter apart, unequal, golden and brown, with broad rims; adaxial surface dark green, sparsely persistently scaly, puberulous along main vein. Inflorescence terminal, (1–)3-flowered. Pedicel 1–

1.5 cm; calyx lobes to 4 mm, triangular, obtuse, persistent in fruit, scaly, slightly puberulous, margin fringed with scales; corolla narrowly funnel-form or funnel-campanulate, white, ca. 2 cm, tube ca. 12 mm, outer surface glabrous; stamens 10, filaments pilose at base; style slender, much longer than corolla, not scaly. Capsule broadly cylindrical, 5–8 mm, scaly. Fl. Apr–May, fr. Jul–Oct.

• Thickets, slopes, cliffs; 1000–2300 m. C Sichuan, NE Yunnan.

- 1a. Branchlets, petioles and pedicels puberulous ..... 132a. subsp. *longistylum*
- 1b. Branchlets, petioles and pedicels without hairs ..... 132b. subsp. *decumbens*

**132a. *Rhododendron longistylum*** subsp. *longistylum*

长柱杜鹃(原亚种) *chang zhu du juan* (*yuan ya zhong*)

Branchlets, petiole, and pedicel puberulous. Fl. Apr–May, fr. Jul–Oct.

• Thickets, scrub-covered rocky slopes, cliffs; 1000–2300 m. C Sichuan.

**132b. *Rhododendron longistylum*** subsp. *decumbens* R. C. Fang, Acta Bot. Yunnan. 4: 249. 1982.

平卧长柱杜鹃 *ping wo chang zhu du juan*

Branchlets, petiole, and pedicel without hairs.

• Slopes; ca. 1700 m. NE Yunnan.

**133. *Rhododendron tsinlingense*** W. P. Fang ex J. Q. Fu in K. T. Fu & J. Q. Fu, Fl. Tsinling. 1(4): 393. 1983.

秦岭杜鹃 *qin ling du juan*

Shrubs; young shoots sparsely scaly. Petiole 0.6–0.8 cm, sparsely scaly, puberulent or glabrescent; leaf blade stiffly papery, oblong to narrowly oblong, 7–9 × 2.5–3.5 cm; base cuneate; apex attenuate to shortly acuminate, mucronate; abaxial surface grayish, scales sparse, yellow; adaxial surface green, puberulent. Inflorescence an umbel, 3–5-flowered. Calyx cupular; lobes 1.5–2 mm, ciliate, apex acute; corolla funnel-form, purplish, 2.5–2.8 cm, lobes ca. 1.5 cm; stamens 10, 1.5–3 cm, exerted, filaments densely white-villous at base; ovary cylindrical-ovoid, 3–5 mm; style ca. 3.5 cm, glabrous. Capsule not known. Fl. May.

• About 1400 m. SW Shaanxi (Lüeyang).

The present authors have seen no material of this species. The original authors considered it to be allied to *Rhododendron longistylum*, but described it as differing in its larger, papery leaf blade and larger, purplish corolla.

**13. *Rhododendron*** subsect. *Micrantha* (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 533. 1949.

照山白亚组 *zhao shan bai ya zu*

Yang Hanbi (杨汉碧 *Yang Han-pi*); David F. Chamberlain

*Rhododendron* ser. *Micrantha* Hutchinson in J. B. Stevenson, Sp. Rhodod. 500. 1930 [*“Micranthum”*].

Shrubs, 2–3 m tall; young shoots scaly, puberulous. Leaf blade usually lanceolate; abaxial surface scales contiguous or nearly so, broadly rimmed, brownish; adaxial surface sparsely scaly. Inflorescence terminal, racemose, 10–28-flowered; rachis 6–26 mm;

pedicels scaly, sometimes puberulous. Flowers very small. Calyx 1–3 mm, 5-lobed, scaly, ciliate on margin; corolla campanulate or tubular-campanulate, 0.5–1.2 cm, sometimes deeply lobed, white, or yellow; outer surface scaly; stamens 10, about as long as corolla; ovary 5-locular; style straight, glabrous. Capsule cylindrical, 4–11 mm, scaly. Seed prominently winged and finned.

Three species: China, Korea; three species (two endemic) in China.

1a. Corolla yellow ..... 136. *R. liaoxigense*  
1b. Corolla white.

2a. Leaf blade (1.5–)3–5 cm, abaxial surface glabrous; corolla 4–8 mm ..... 135. *R. micranthum*

2b. Leaf blade 9–12.5 cm, abaxial surface inconspicuously arachnoid-puberulous; corolla ca. 12 mm ..... 134. *R. brevicaudatum*

**134. *Rhododendron brevicaudatum*** R. C. Fang & S. S. Chang, Acta Bot. Yunnan. 10: 369. 1988.

短尾杜鹃 duan wei du juan

Shrubs, evergreen, 2–3 m tall; branchlets densely scaly, puberulous. Petiole 8–14 mm; leaf blade leathery, lanceolate-oblong, 9–12.5 × 2.5–3.3 cm; base rounded; apex shortly caudate-acuminate; abaxial surface inconspicuously arachnoid puberulous, scales contiguous or nearly 1 × their own diameter apart, small; adaxial surface sparsely scaly. Inflorescence racemose, many-flowered; rachis 6–8(–20) mm, densely scaly. Pedicel 0.5–0.8 cm, densely scaly; calyx lobes 1.5–3 mm, ovate or triangular-ovate, densely scaly abaxially; margin ciliate; corolla tubular-campanulate, white, ca. 1.2 cm, tube more than 2 × as long as lobes, outer surface densely scaly, inner surface puberulous; lobes oblong; stamens 10, often as long as corolla, filaments pubescent; ovary densely scaly; style shorter than stamens, glabrous. Capsule 6–11 mm, densely scaly. Fl. Apr–Jun, fr. Sep–Oct.

• Forests, valleys; 1400–2000 m. E Guizhou.

This taxon is only distantly related to the other two species in *Rhododendron* subsect. *Micrantha* and may have closer affinities with some other subsection.

**135. *Rhododendron micranthum*** Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 10(7): 155. 1837.

照山白 zhao shan bai

*Rhododendron pritzelianum* Diels; *R. rosthornii* Diels.

Shrubs, evergreen, up to 2.5 m tall; branchlets slender, scaly, puberulous. Petiole 3–8 mm, scaly; leaf blade almost lea-

thy, oblanceolate, oblong-elliptic, to lanceolate, (1.5–)3–4(–6) × (0.4–)9–12(–2.5) cm; base narrowly cuneate; apex obtuse or acute, mucronate; abaxial surface scales contiguous or ca. 0.5 × their own diameter apart, brownish, broadly rimmed; adaxial surface dark green, shiny, usually sparsely scaly. Inflorescence racemose, 10–28-flowered; rachis 10–26 mm. Pedicel 0.8–2 cm, densely scaly; calyx lobes 1–3 mm, linear or triangular-lanceolate, scaly, margin ciliate; corolla campanulate, white, (0.4–)0.5–0.8(–1) cm, tube slightly shorter than lobes; outer surface scaly; inner surface glabrous; stamens 10, nearly as long as corolla; filaments glabrous; ovary densely scaly; style nearly as long as stamens, glabrous. Capsule cylindrical, (4–)5–6(–8) mm, scaly. Fl. May–Jun, fr. Aug–Nov.

Thickets, scrub, slopes, dry gorges, cliffs, rocks; 1000–3000 m. N China, also Henan, Hubei, Hunan, Sichuan [Korea].

**136. *Rhododendron liaoxigense*** S. L. Tung & Z. Lu, Bull. Bot. Res., Harbin 8(2): 155. 1988 [*“liaoxigensis”*].

辽西杜鹃 liao xi du juan

Shrubs, up to 2 m tall; branchlets densely puberulous. Petiole 2–8 mm; leaf blade almost leathery, obovate-elliptic, 2.5–5.5 × 1.1–1.8 cm; base cuneate; apex obtuse or acute; abaxial surface yellowish white, scales dense, yellowish brown; adaxial surface green, sparsely scaly, glandlike, yellowish brown. Inflorescence racemose, more than 13-flowered. Pedicel 1.6–1.8 cm, puberulous; calyx lobes 5, lanceolate; corolla yellow, lobes 5, obovate; stamens 10, slightly longer than corolla; style longer than corolla. Capsule cylindrical, 4–5 mm, scaly. Fl. Jun, fr. Jul–Aug.

• Upland areas; ca. 500 m. W Liaoning.

**14. *Rhododendron*** subsect. ***Boothia*** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 530. 1949.

黄花杜鹃亚组 huang hua du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Boothia* Hutchinson in J. B. Stevenson, Sp. Rhodod. 155. 1930 [*“Boothii”*].

Shrubs, (0.05–)0.3–2.5(–3) m tall, often epiphytic; young shoots scaly, mostly setose, sometimes otherwise glabrous. Leaves large; leaf blade leathery; abaxial surface whitish papillose or glaucous, scales 0.5–2 × their own diameter apart or sometimes contiguous, saucer-shaped or vesicular, deeply sunk in pits, golden yellow to brown or dark brown; adaxial surface glabrous or scaly, sometimes setose on midrib and veins. Inflorescence terminal, 1–11-flowered; pedicels scaly, usually setose; calyx (1–)2–15 mm, usually 5-lobed, sometimes reduced to undulate rim, scaly, margin mostly ciliate or setose; corolla broadly campanulate or rotate to saucer-shaped, usually yellow, rarely greenish, white or reddish, sometimes spotted, outer surface scaly, sometimes sparsely pubescent; stamens 10; ovary 5(or 6)-celled; style short, thick, sharply bent, usually scaly at base. Capsule ovoid to cylindrical-ovoid, 8–17 mm, scaly. Seed prominently winged and finned.

Seven species: Bhutan, China, India, Myanmar, Sikkim; seven species (two endemic) in China.

1a. Inflorescence 1–2(–3)-flowered; scales on abaxial leaf surface vesicular, with narrow rim.

- 2a. Corolla yellow, broadly campanulate; adaxial leaf surface with only a few setae at base of midrib ..... 137. *R. megeratum*
- 2b. Corolla white, sometimes tinged pink, rotate; adaxial leaf surface setose ..... 138. *R. leucaspis*
- 1b. Inflorescence usually 3–11-flowered; scales on abaxial leaf surface usually saucer-shaped, with broad rim.
- 3a. Pedicels 20–50 mm, thin, flexuous; corolla 0.9–1.4 cm; calyx lobes usually reflexed ..... 139. *R. leptocarpum*
- 3b. Pedicels up to 20 mm, stout, rigid; corolla 1.5–3(–4) cm; calyx lobes usually not reflexed.
- 4a. Calyx saucerlike, lobes reduced to an undulate rim, 1–2 mm ..... 140. *R. chrysodoron*
- 4b. Calyx lobes rounded, ovate to oblong, 3–15 mm.
- 5a. Pedicels setose; calyx lobes (7–)10–15 mm; leaf apex acuminate; midrib and lateral veins adaxially setose ..... 141. *R. boothii*
- 5b. Pedicels not setose; calyx lobes 3–8 mm; leaf apex rounded or obtuse; midrib and main veins adaxially glabrous.
- 6a. Inflorescence 4–8-flowered; calyx 3–6 mm; corolla 13–20 mm; scales on abaxial leaf surface usually uniform, small, 0.5–1 × their own diameter apart ..... 142. *R. sulfureum*
- 6b. Inflorescence 2–3-flowered; calyx 6–8 mm; corolla 20–26 mm; scales on abaxial leaf surface dimorphic, larger, contiguous ..... 143. *R. dekatanum*

**137. *Rhododendron megeratum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 140. 1920.

招展杜鹃 zhao zhan du juan

Dwarf shrubs, evergreen, sometimes epiphytic, (0.05–) 0.3–0.6(–0.8) m tall; branchlets setose. Petiole 3–6 mm, scaly, setose; leaf blade leathery, elliptic, elliptic-obovate to broadly elliptic, (1.5–)3–4 × (1–)1.5–2 cm; base rounded; margin revolute, usually setose; apex obtuse, mucronate; abaxial surface whitish papillose, scales 0.5–1 × their own diameter apart, varying in size, brown, bladderlike, sunk in pits; adaxial surface dark green, shiny, glabrous except for a few bristles at base of midrib, Inflorescence 1–2(–3)-flowered. Pedicel ca. 1 cm, scaly, setose; calyx lobes 6–10 mm, obovate to rounded, persisting to enclose mature capsule, scaly, ciliate; corolla broadly campanulate, yellow or rarely white, rarely with purple spots, (1.6–)2–2.5 cm, tube (8–)10–12 mm, scaly; stamens 10, shorter than corolla, filaments pubescent towards base or to 2/3 of their length; ovary scaly; style stout, sharply bent, short, sparsely scaly at base. Capsule ovoid to cylindric-ovoid, 8–11 mm, scaly. Fl. Apr–Jun, fr. Jul–Sep.

Forests, rocky slopes, cliff ledges, boulders, sometimes epiphytic; 2500–4200 m. S Xizang, NW Yunnan [NE India, NE Myanmar].

**138. *Rhododendron leucaspis*** Tagg, Gard. Chron. 85: 308. 1929.

白背杜鹃 bai bei du juan

Dwarf shrubs, erect, straggly, evergreen, sometimes epiphytic, 0.3–0.6(–1) m tall; branchlets scaly, setose. Petiole 4–9 mm, scaly, setose; leaf blade leathery, broadly elliptic to obovate, 3–6 × 1.5–3 cm; base cuneate; apex obtuse, mucronate; abaxial surface glaucous, scales 0.5–1 × their own diameter apart, varying in size, brown, bladderlike, sunk in pits; adaxial surface and margin sparsely setose. Inflorescence 1–2(–3)-flowered. Pedicel 0.6–1 cm, scaly, usually not setose; calyx greenish often also reddish; lobes (6–)7–8 mm, obovate to rounded, persisting to enclose mature capsule, scaly, ciliate; corolla rotate or saucer-shaped, white, often tinged pinkish, 2.5–3.2 cm, tube 8–12 mm, outer surface scaly, inner surface pilose; stamens 10, filaments pubescent towards base or for 3/4 of their length; ovary densely scaly; style stout, sharply bent, short, scaly at base. Capsule ovoid to cylindric-ovoid, 8–10 mm, scaly. Fl. Apr–Jun, fr. Jun–Aug.

• Thickets, scrub, slopes, grassy places, cliffs; 2100–3300 m. S Xizang.

**139. *Rhododendron leptocarpum*** Nuttall, Hooker's J. Bot. Kew Gard. Misc. 6: 256. 1854.

异鳞杜鹃 yi lin du juan

*Rhododendron micromeres* Tagg.

Shrubs, evergreen, usually epiphytic, 0.9–2(–3) m tall; branchlets scaly, otherwise glabrous. Petiole 5–10 mm, densely scaly; leaf blade leathery, narrowly elliptic to oblong-lanceolate, oblong-obovate, 3–8 × 1.5–3.6 cm; base cuneate or obtuse; apex obtuse or rounded, mucronate; abaxial surface pale, glaucous, scales dense, 0.5–1.5 × their own diameter apart, unequal, small to large, brown, sunk in pits; adaxial surface bright green, scaly or glabrous. Inflorescence (3–)5–10(–11)-flowered. Pedicel thin, flexuous, 2–4 cm, in fruit to 5 cm, scaly; calyx lobes 2–5 mm, ovate to rounded, reflexed in fruit, persisting to enclose mature capsule, scaly; corolla broadly campanulate or rotate-campanulate, yellow, 0.9–1.4 cm, tube 4–7 mm, outer surface scaly, inner surface pilose; stamens 10, filaments pubescent near base or ± apex; ovary densely scaly; style stout, sharply bent, short, scales at base or absent. Capsule narrowly cylindric or sickle-shaped, 12–16 mm, scaly. Fl. Apr–Jun, fr. Jul–Aug.

Mixed forests, cliff ledges, rocks, sometimes epiphytic; 2400–3400 m. S Xizang, NW Yunnan [Bhutan, NE India, NE Myanmar, Sikkim].

**140. *Rhododendron chrysodoron*** Tagg ex Hutchinson, Gard. Chron. 95: 276. 1934.

纯黄杜鹃 chun huang du juan

Shrubs, evergreen, usually epiphytic, 0.2–1.7 m tall; branchlets scaly, setose. Petiole 6–16 mm, setose; leaf blade leathery, broadly elliptic or obovate to oblong-elliptic, 4–9 × 2–5 cm; base rounded or obtuse; apex obtuse or rounded, mucronate; abaxial surface pale, glaucous, scales 1–2 × their own diameter apart, unequal, golden yellow to brown, slightly sunk in pits; adaxial surface green, shiny, usually sparsely scaly. Inflorescence 3–6-flowered. Pedicel 0.7–1(–2) cm, densely scaly; calyx saucerlike, reduced to an undulate rim; lobes 1–2 mm, broadly ovate, persisting to enclose mature capsule, scaly, margin setose; corolla broadly campanulate or rotate-campanulate, bright yellow, 1.5–3(–4) cm, tube ca. 15 mm, outer surface

scaly, pubescent at base, inner surface pilose; stamens 10, filaments pubescent towards base or for 1/3–2/3 of their length; ovary densely scaly; style stout, sharply bent, short, scaly at base. Capsule cylindrical or cylindrical-ovoid, 10–12 mm, scaly. Fl. Apr–May, fr. Jun–Aug.

Mixed forests, rocks, sometimes epiphytic; 2000–2800 m. SE Xizang, NW Yunnan [NE Myanmar].

**141. *Rhododendron boothii*** Nuttall, Hooker's J. Bot. Kew Gard. Misc. 5: 356. 1853.

柠檬杜鹃 ning meng du juan

Shrubs, evergreen, usually epiphytic, 1.5–2.5(–3) m tall; branchlets scaly, densely setose. Petiole 6–10 mm, scaly, setose; leaf blade thick and leathery, ovate, narrowly ovate to ovate-elliptic, 7–13 × 3–7 cm; base rounded or obtuse; margin ciliate; apex acuminate or acute; abaxial surface pale glaucous-green, scales ca. 1 × their own diameter apart, unequal, dark brown; adaxial surface green, somewhat shiny, without scales, setose on midrib and veins. Inflorescence (3–)7–10-flowered. Pedicel 1.3–2 cm, setose; calyx green; lobes (7–)10–15 mm, rounded, ovate to oblong, persisting to enclose mature capsule, scaly, margin ciliate; corolla broadly campanulate, bright yellow, sometimes spotted, ca. 3 cm, tube 15–17 mm, outer surface scaly, inner surface pilose, lobes spreading, rounded; stamens 10, filaments pubescent towards base for 1/3–1/2 of their length; ovary densely scaly; style stout, sharply bent, short, scaly at base. Capsule ovoid or ovoid-cylindrical, 10–17 mm, scaly. Fl. Apr–May, fr. Jun–Jul.

Forests, scrub, rocks, sometimes epiphytic; 2000–2500 m. SE Xizang [NE India].

**142. *Rhododendron sulfureum*** Franchet, Bull. Soc. Bot. France 34: 283. 1887.

硫磺杜鹃 liu huang du juan

*Rhododendron cerinum* I. B. Balfour & Forrest; *R. commodum* I. B. Balfour & Forrest; *R. theiochromum* I. B. Balfour & W. W. Smith.

Shrubs, evergreen, usually epiphytic, 0.3–1.6 m tall;

**15. *Rhododendron* subsect. *Camelliiflora*** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 533. 1949 [*“Camelliæflora”*].

茶花杜鹃亚组 cha hua du juan ya zu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* ser. *Camelliiflora* Hutchinson in J. B. Stevenson, Sp. Rhodod. 171. 1930 [*“Camelliæflorum”*].

Shrubs, 1–2 m tall, often epiphytic; young shoots densely scaly. Leaf blade leathery; abaxial surface scales overlapping or nearly so, rust-colored; adaxial surface glabrous or sparsely scaly. Inflorescence terminal, (1–)2-flowered; pedicels scaly; calyx ca. 6 mm, 5-lobed, sparsely scaly at base; corolla broadly campanulate; tube short and broad; lobes spreading, white tinged with pale red, outer surface sparsely scaly; stamens 12–16; filaments pubescent towards base; ovary 5–10-locular, densely scaly; style shorter than stamens, stout, sharply deflexed, not scaly. Capsule ovoid or oblong, ca. 13 mm, densely scaly. Seed winged.

One species: Bhutan, China, India, Nepal, Sikkim.

**144. *Rhododendron camelliiflorum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 28. 1851 [*“camelliæflorum”*].

茶花杜鹃 cha hua du juan

Shrubs, 1–2 m tall; young shoots densely scaly. Leaf blade

branchlets scaly, usually setose. Petiole 4–12 mm, densely scaly, often setose; leaf blade leathery, obovate, ovate, oblong-obovate, or elliptic to oblanceolate, 2.6–8.6 × 1.5–4.5 cm; base obtuse or tapering; margin often ciliate when young; apex rounded or subacute, mucronate; abaxial surface glaucous green, scales ca. 0.5 × their own diameter apart, unequal, dark brown or brown, sunk in pits, with crenulate edges, rims up-turned; adaxial surface green, somewhat shiny, scaly or glabrous. Inflorescence 4–8-flowered. Pedicel 0.8–2 cm, scaly, sometimes setose; calyx lobes 3–6 mm, ovate to oblong, persisting to enclose mature capsule, scaly, margin usually ciliate; corolla broadly campanulate, bright yellow, rarely greenish, not spotted, 1.3–2 cm, tube 8–11 mm, outer surface scaly, sometimes sparsely pubescent, inner surface pilose, lobes rounded; stamens 10, filaments pubescent towards base or in lower 1/2; ovary densely scaly; style stout, sharply bent, short, scaly at base. Capsule cylindrical-ovoid, 8–11 mm, densely scaly. Fl. Apr–Jun, fr. Jul–Aug.

Forests, scrub, cliffs, rocks, sometimes epiphytic; 2500–4000 m. SE Xizang, W Yunnan [NE Myanmar].

**143. *Rhododendron dekatanum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 226. 1937.

隆子杜鹃 long zi du juan

Shrubs, evergreen, ca. 1.5 m tall; branchlets scaly, not setose. Petiole 5–6 mm, densely scaly, not setose; leaf blade leathery, ovate, obovate, broadly obovate-oblong to oblong, 3–6 × 2–3.5 cm; base obtuse; margin often ciliate when young; apex rounded, mucronate; abaxial surface pale glaucous, scales contiguous, unequal, dark brown and brown; adaxial surface olive green, matt, without scales. Inflorescence 2- or 3-flowered. Pedicel 0.6–0.8 cm, scaly, not setose; calyx lobes 6–8 mm, ovate to rounded, scaly, margin usually glabrous; corolla broadly campanulate, bright yellow, 2–2.6 cm, outer surface scaly; stamens 10, slightly shorter than corolla, filaments densely villous in lower 1/2–2/3 of their length; ovary densely scaly; style stout, sharply bent, short, scaly at base. Fl. Apr–May.

• *Rhododendron* forests, bamboo forests; 3400–3500 m. S Xizang.

leathery, oblong or oblong-lanceolate, 8–10 × 2.5–3.5 cm; base cuneate; apex obtuse or acute, apiculate; abaxial surface scales contiguous, overlapping or ca. 0.5 × their own diameter apart, rust-colored; adaxial surface glabrous or sparsely scaly. Inflo-

rescence terminal, 2-flowered. Pedicel stout, densely scaly; calyx lobes ca. 6 mm, broadly ovate, persistent in fruit, sparsely scaly at base; corolla thick, white tinged with pale red, 1.5–2.5 × ca. 3 cm, tube short and broad, outer surface sparsely scaly,

inner surface with a circle of hairs; lobes spreading; ovary scaly; style stout, strongly deflexed, glabrous. Capsule cylindrical, ca. 13 mm.

Broad-leaved forests, rocks. S Xizang [Bhutan, India, Nepal, Sikkim].

**16. Rhododendron** subsect. **Glauca** (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 530. 1949.

苍白杜鹃亚组 *cang bai du juan ya zu*

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Glauca* Hutchinson in J. B. Stevenson, Sp. Rhodod. 293. 1930 [*"Glaucum"*].

Shrubs, 0.25–2 m tall; bark often coppery, smooth and flaking; young shoots scaly. Leaves small; leaf blade leathery, aromatic, usually lanceolate to obovate; abaxial surface white or pale glaucous, scales sparse to almost contiguous, dimorphic, the smaller golden, more numerous than the dark brown larger; adaxial surface usually sparsely scaly. Inflorescence terminal, umbellate or racemose, 3–10-flowered; pedicels slender, scaly; calyx 3–10 mm, deeply 5-lobed, scaly, margin usually ciliate; corolla ± campanulate, lobes spreading, white, pink, purple, or yellow, sometimes spotted; stamens 10, nearly as long as corolla; filaments pubescent; ovary 5-locular, mostly densely scaly; style short, stout, usually sharply deflexed, sometimes scaly and/or puberulous at base. Capsule ovoid to cylindrical-ovoid, 4–10 mm, scaly. Seeds wingless, with obscure appendages.

Six species: Bhutan, China, India, Myanmar, Nepal, Sikkim; five species (one endemic) in China.

- 1a. Corolla pale yellow or greenish yellow; scales on abaxial leaf surface 2–10 × their own diameter apart ..... 145. *R. brachyanthum*
- 1b. Corolla white, pink, rose to purple; scales on abaxial leaf surface nearly contiguous to 2 × their own diameter apart.
  - 2a. Corolla 1–1.3 cm; scales on abaxial leaf surface very close, nearly contiguous ..... 149. *R. pruniflorum*
  - 2b. Corolla 1.3–2.6(–3.8) cm; scales on abaxial leaf surface at least 1/2 their own diameter apart.
    - 3a. Calyx lobes ovate-lanceolate to lanceolate, apex markedly acute; corolla tubular-campanulate ..... 146. *R. tubiforme*
    - 3b. Calyx lobes rounded, ovate to ovate-oblong, apex rounded or obtuse; corolla campanulate or broadly campanulate.
      - 4a. Calyx lobes 4–7 mm; style usually puberulous over its whole length; capsule ca. 5 mm ..... 147. *R. shweliense*
      - 4b. Calyx lobes 6–10 mm; style glabrous; capsule 8–10 mm ..... 148. *R. charitopes*

**145. Rhododendron brachyanthum** Franchet, Bull. Soc. Bot. France 33: 234. 1886.

短花杜鹃 *duan hua du juan*

Shrubs, evergreen, 0.3–1.5(–2) m tall; bark smooth, brown, flaking. Petiole 4–10 mm, scaly; leaf blade leathery, aromatic, oblong-lanceolate or oblong-elliptic to narrowly ovate, 2–6.5 × 1–2.6 cm; base obtuse or tapering; apex obtuse or acute, mucronate; abaxial surface glaucous, scales sparse, (1–) 2–10 × their own diameter apart, unequal, the smaller pale yellow, the larger brown, widely separated; adaxial surface green, shiny, usually sparsely scaly. Inflorescence 3–10-flowered. Pedicel slender, 1.5–4 cm, scaly; calyx lobes 3–8 mm, rounded, ovate or broadly elliptic, persisting to enclose mature capsule, scaly; corolla campanulate, pale or greenish yellow, 1–1.5(–2) cm, tube 6–11 mm; outer surface usually sparsely scaly; stamens 10, nearly as long as corolla, filaments pubescent in lower 1/2 or nearly to apex; ovary scaly; style stout, usually sharply deflexed, short. Capsule cylindrical-ovate, 4–8 mm, scaly. Fl. Apr–Jul, fr. Jul–Sep.

Open places in forests, thickets, scrub, rocky places; 3000–3700 (–4000) m. SE Xizang, C and W Yunnan [NE Myanmar].

- 1a. Scales on abaxial leaf surface very sparse, 4–10 × their own diameter apart ..... 145a. subsp. *brachyanthum*
- 1b. Scales on abaxial leaf surface

much denser, usually (1–)2–3 × their own diameter apart ..... 145b. subsp. *hypolepidotum*

**145a. Rhododendron brachyanthum** subsp. *brachyanthum*

短花杜鹃(原亚种) *duan hua du juan (yuan ya zhong)*

Abaxial leaf surface with scales very sparse, 4–10 × their own diameter apart. Fl. Apr–Jul, fr. Jun–Sep.

• *Rhododendron* thickets, scrub, rocky places; 3000–3700 m. C and W Yunnan.

**145b. Rhododendron brachyanthum** subsp. *hypolepidotum* (Franchet) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 114. 1978.

绿柱短花杜鹃 *lü zhu duan hua du juan*

*Rhododendron brachyanthum* var. *hypolepidotum* Franchet, J. Bot. (Morot) 12: 262. 1898; *R. hypolepidotum* (Franchet) I. B. Balfour & Forrest.

Abaxial leaf surface with scales usually (1–)2–3 × their own diameter apart. Fl. May–Jul, fr. Jul–Aug.

Open places in forests, thickets, scrub, rocky places; 3000–3600(–4000) m. SE Xizang, C and W Yunnan [NE Myanmar].

**146. Rhododendron tubiforme** (Cowan & Davidian) Davidian, J. Amer. Rhododendron Soc. 36: 15. 1982.

苍白杜鹃 *cang bai du juan*



*Rhododendron glaucophyllum* Rehder var. *tubiforme* Cowan & Davidian, *Rhododendron* Year Book 3: 86. 1948; *R. glaucophyllum* subsp. *tubiforme* (Cowan & Davidian) D. G. Long.

Shrubs, evergreen, 0.3–2 m tall; stem and branches with smooth brown flaking bark. Petiole 4–13 mm, scaly; leaf blade leathery, aromatic, obovate, oblong-obovate, lanceolate to oblanceolate, 3.8–8 × 1–2.6 cm; base obtuse or tapering; apex obtuse or acute, mucronate; abaxial surface glaucous, scales 0.5–2(–3) × their own diameter apart, unequal, smaller pale yellow, larger brown, widely separated; adaxial surface dark green, shiny, scaly. Inflorescence 3–5(–10)-flowered. Pedicel 1–2 cm, scaly; calyx lobes 6–8(–10) mm, ovate-lanceolate or lanceolate, persisting to enclose mature capsule, scaly; corolla tubular-campanulate, pink to rose, with or without darker spots, 2–3(–3.8) cm, tube 6–11 mm; outer surface usually densely scaly; stamens 10, nearly as long as corolla, filaments densely pubescent in lower 1/2; ovary densely scaly; style slender, straight, nearly as long as corolla, glabrous. Capsule ovate, 5–8 mm, scaly. Fl. Apr–May, fr. Jun–Sep.

Mixed *Rhododendron* forests, bamboo forests, *Rhododendron* thickets, scrub, rocks; 3000–3600 m. SE Xizang [Bhutan, India].

**147. *Rhododendron shweliense*** I. B. Balfour & Forrest, *Notes Roy. Bot. Gard. Edinburgh* 13: 293. 1922.

瑞丽杜鹃 rui li du juan

Shrubs, evergreen, 0.3–0.75 m tall; stem and branches with smooth brown flaking bark. Petiole 3–10 mm, scaly; leaf blade leathery, aromatic, obovate, obovate-oblong, to narrowly elliptic, 1.3–4.7 × 0.6–1.8 cm; base obtuse or tapering; apex obtuse or rounded, mucronate; abaxial surface glaucous, scales 0.5–4 × their own diameter apart, unequal, the smaller pale yellow, the larger brown, widely separated; adaxial surface green, matt, usually scaly. Inflorescence 2–4-flowered. Pedicel 1.5–2.3 cm, scaly; calyx lobes 4–7 mm, oblong, oblong-ovate to ovate, persisting to enclose mature capsule, scaly, margin usually sparsely ciliate; corolla campanulate, pale pink tinged yellow, upper three lobes spotted pink, (1.1–)1.3–1.5 cm, scaly; stamens 10, nearly as long as corolla, filaments pubescent in lower 1/2 or over whole of their length; ovary densely scaly; style stout, sharply bent or deflexed, short, usually scaly at base, puberulous. Capsule ovoid, 4–5 mm, scaly. Fl. May–Jun, fr. Jul–Sep.

- Grassy slopes, rocky slopes, cliffs; 3000–3400 m. W Yunnan.

**148. *Rhododendron charitopes*** I. B. Balfour & Farrer, *Notes Roy. Bot. Gard. Edinburgh* 13: 243. 1922.

雅容杜鹃 ya rong du juan

Shrubs, evergreen, 0.25–0.9(–1.5) m tall; branchlets scaly. Petiole 4–6 mm, scaly; leaf blade leathery, aromatic, obovate to obovate-elliptic, 2.6–7 × 1.3–4.5 cm; base tapering; apex obtuse, mucronate; abaxial surface glaucous, scales 0.5–2(–5) × their own diameter apart, unequal, the smaller pale yellow, larger brown, widely separated; adaxial surface dark green, usually sparsely scaly. Inflorescence (2–)3–4(–6)-flowered. Pedicel 1.8–3 cm, scaly; calyx lobes (3–)5–10 mm, ovate, apex

rounded, persisting to enclose mature capsule, scaly, margin usually sparsely ciliate; corolla campanulate or broadly campanulate, white, pink to rose or purple, sometimes spotted, 1.5–2.6 cm, tube (8–)9–13 mm, not or only sparsely scaly; stamens 10, shorter than corolla, filaments pubescent in lower 1/2 or nearly to apex; ovary densely scaly; style stout, sharply bent or deflexed, short, usually without scales at base, otherwise glabrous. Capsule cylindrical-ovate, 6–10 mm, scaly. Fl. May–Jun, fr. Jul–Aug.

Valleys, grassy slopes, rocky slopes, cliffs, rocks, among boulders; 2500–4300 m. S Xizang, NW Yunnan [NE Myanmar].

- 1a. Scales on abaxial leaf surface much denser, 0.5–3 × their own diameter apart; calyx lobes 6–10 mm; capsule 8–10 mm ..... 148a. subsp. *charitopes*
- 1b. Scales on abaxial leaf surface very sparse, 1–6 × their own diameter apart; calyx lobes (3–)5–6 mm; capsule ca. 6 mm ..... 148b. subsp. *tsangpoense*

**148a. *Rhododendron charitopes*** subsp. *charitopes*

雅容杜鹃(原亚种) ya rong du juan (yuan ya zhong)

Abaxial leaf surface with scales 0.5–3 × their own diameter apart. Calyx 6–10 mm; corolla pink. Capsule 8–10 mm. Fl. May–Jun, fr. Jul–Aug.

Valleys, rocky slopes, cliffs, among boulders; 3000–4300 m. NW Yunnan [NE Myanmar].

**148b. *Rhododendron charitopes*** subsp. *tsangpoense* (Kingdon Ward) Cullen, *Notes Roy. Bot. Gard. Edinburgh* 36: 114. 1978.

藏布雅容杜鹃 zang bu ya rong du juan

*Rhododendron tsangpoense* Kingdon Ward, *Gard. Chron.*, ser. 3, 86: 504. 1929; *R. tsangpoense* var. *curvistylum* Kingdon Ward ex Cowan & Davidian.

Abaxial leaf surface with scales 1–6 × their own diameter apart. Calyx (3–)5–6 mm; corolla pink or purple. Capsule ca. 6 mm. Fl. Jun, fr. Jul–Aug.

- Valleys, grassy slopes, rocks, among boulders; 2500–4100 m. S Xizang.

**149. *Rhododendron pruniflorum*** Hutchinson & Kingdon Ward in J. B. Stevenson, *Sp. Rhodod.* 302. 1930.

桃花杜鹃 tao hua du juan

*Rhododendron tsangpoense* Kingdon Ward var. *pruniflorum* (Hutchinson & Kingdon Ward) Cowan & Davidian.

Shrubs, evergreen, 0.3–1.2 m tall; stem and branches with brown smooth flaking bark. Petiole 2–8 mm, scaly; leaf blade leathery, aromatic, obovate to oblong, 2–4(–5) × 1–2(–2.5) cm; base obtuse or tapering; apex obtuse or rounded, mucronate; abaxial surface glaucous, scales almost contiguous, unequal, the smaller pale yellow, larger brown, widely separated; adaxial surface dark green, shiny, usually scaly. Inflorescence 3–5(–7)-flowered. Pedicel slender, 1.3–3.5 cm, scaly; calyx lobes 3–5

mm, oblong-ovate, persisting to enclose mature capsule, scaly, margin usually sparsely ciliate; corolla campanulate, dull crimson to plum purple, or rarely pink, 1–1.3 cm, tube 5–8 mm; outer surface not or only sparsely scaly; stamens 10, nearly as long as corolla, filaments densely pubescent in lower 1/2 or

nearly to apex; ovary densely scaly; style stout, sharply bent or deflexed, short, usually scaly at base, otherwise glabrous. Capsule ovoid, 4–6 mm, densely scaly. Fl. May–Jul, fr. Jul–Aug.

*Abies* forests, *Rhododendron* thickets, rocky slopes; 3000–4000 m. SE Xizang [NE India, NE Myanmar].

**17. *Rhododendron* subsect. *Campylogyna* (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 531. 1949.**

弯柱杜鹃亚组 wan zhu du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Campylogyna* Hutchinson in J. B. Stevenson, Sp. Rhodod. 182. 1930 [*“Campylogynum”*].

Small shrubs, usually prostrate, rarely ascending, 2.5–10 cm (rarely to 1.8 m) tall; young shoots scaly, glabrous or sparsely pubescent. Leaves small; leaf blade leathery, margin crenulate; abaxial surface often whitish, scales sparse, small, deciduous; adaxial surface usually without scales. Inflorescence terminal, umbellate, 1–4(–5)-flowered; pedicels long, rigid, accrescent to 7 cm in fruit; calyx 1–6 mm, 5-lobed or undulate, usually glabrous; corolla broadly campanulate, fleshy, pruinose, pink to purple; stamens (8–)10, shorter than corolla; filaments pubescent towards base; ovary scaly; style thick, bent or sharply deflexed, glabrous. Capsule ovoid, 5–9 mm, scaly. Seeds wingless, obscurely finned.

One species: China, India, Myanmar.

**150. *Rhododendron campylogynum* Franchet, Bull. Soc. Bot. France 32: 10. 1885.**

弯柱杜鹃 wan zhu du juan

*Rhododendron caeruleoglaucum* I. B. Balfour & Forrest; *R. campylogynum* var. *celsum* Davidian; *R. campylogynum* var. *cremastum* (I. B. Balfour & Forrest) Davidian; *R. campylogynum* var. *myrtilloides* (I. B. Balfour & Kingdon Ward) Davidian; *R. cremastum* I. B. Balfour & Forrest; *R. damascenum* I. B. Balfour & Forrest; *R. glaucoareum* I. B. Balfour & Forrest; *R. myrtilloides* I. B. Balfour & Kingdon Ward.

Small shrubs, usually prostrate, creeping or decumbent, evergreen, 0.025–0.1(–1.8) m tall; branchlets short, sparsely scaly, otherwise glabrous or pubescent. Petiole 2–4 mm, scaly; leaf blade leathery, obovate to obovate-lanceolate, 0.7–2.5(–3)

× 0.3–1.2(–1.8) cm; base tapering; margin crenulate; apex rounded, mucronate; abaxial surface often whitish or silvery, scales 1–6 × their own diameter apart, small, deciduous; adaxial surface dark green, usually shiny, scales rarely present. Inflorescence umbellate, 1–4(–5)-flowered. Pedicel ca. 5 cm, erect, up to 7 cm in fruit; calyx lobes 1–6 mm, rounded to ovate-oblong, persistent, scales usually absent; corolla broadly campanulate, fleshy, pruinose, pink to purple, 1–2(–2.3) cm; tube 7–12 mm, glabrous, inner surface sparsely pubescent; stamens (8–)10, shorter than corolla, filaments puberulous in lower 1/2 their length; ovary scaly; style thick, bent or sharply deflexed, glabrous. Capsule ovoid, 5–9 mm, scaly.

*Rhododendron* thicket margins, scrub, moist stony moorlands, cliffs, ledges; (2700–)3500–4500(–5100) m. S Xizang, C and W Yunnan [NE India, NE Myanmar].

**18. *Rhododendron* subsect. *Genestieriana* Sleumer, Bot. Jahrb. Syst. 74: 531. 1949.**

灰白杜鹃亚组 hui bai du juan ya zu

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Shrubs, 1.2–3(–5) m tall, sometimes epiphytic; branchlets reddish brown; young shoots scaly. Leaf blade leathery; abaxial surface conspicuously pale and glaucous, scales sparse, small, golden yellow to brown; adaxial surface usually sparsely scaly. Inflorescence terminal, racemose, (4–)10–15-flowered, rachis 3–50 mm; pedicels pruinose; calyx rimlike, 1–2 mm, pruinose; corolla campanulate, reddish purple, outer surface glabrous; stamens (8–)10; filaments glabrous; ovary 5-celled, scaly; style short, stout, sharply deflexed, glabrous. Capsule ovoid-cylindric, 6–9 mm, scaly. Seeds wingless, obscurely finned.

One species: China, Myanmar.

**151. *Rhododendron genestierianum* Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 122. 1920 [*“jenestierianum”*].**

灰白杜鹃 hui bai du juan

Shrubs, evergreen, 1.2–3(–5) m tall; branchlets reddish brown, smooth; young shoots scaly, otherwise glabrous. Petiole 5–25 mm, scaly; leaf blade leathery, lanceolate, oblong-lanceolate or narrowly elliptic to oblanceolate, (3–)5–15 × (1.2–)1.4–3.5(–4.5) cm; base tapering; apex acuminate; abaxial surface conspicuously pale and glaucous, scales 4–6(–10) × their own diameter apart small, golden yellow to brown; adaxial surface

dark green, usually sparsely scaly. Inflorescence (4–)10–15-flowered; rachis 3–50 mm. Pedicel pruinose, 1.6–3 cm; calyx pruinose, rimlike, sometimes slightly lobed, 1–2 mm, persistent; corolla campanulate, fleshy, pruinose, reddish purple, 1.3–1.8 cm, tube 12–17 mm, glabrous; stamens (8–)10, filaments glabrous; ovary scaly; style stout, sharply deflexed, short, glabrous. Capsule ovate-cylindric, 6–9 mm, scaly. Fl. Apr–May, fr. Jun–Aug.

Forest margins, thickets, scrub, rocky slopes; 2000–4500 m. SE Xizang, W Yunnan [NE Myanmar].

**19. *Rhododendron* subsect. *Lepidota* (Hutchinson) Sleumer, Bot. Jahrb. Syst. 74: 531. 1949.**

鳞腺杜鹃亚组 *lin xian du juan ya zu*

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

*Rhododendron* ser. *Lepidota* Hutchinson in J. B. Stevenson, Sp. Rhodod. 437. 1930 [*"Lepidotum"*].

Small shrubs, evergreen (or deciduous), 0.5–1.5(–2) m tall. Leaf blade ± leathery; abaxial surface pale grayish green, scales overlapping or nearly so, with broad, translucent rims, yellow-green or brown; adaxial surface densely scaly. Inflorescence terminal, 1–3(–5)-flowered. Pedicel scaly; calyx developed, 2–4 mm, deeply 5-lobed; corolla broadly campanulate, white, pink, red to purple or yellow, often with darker spots; outer surface scaly; stamens (8–)10; filaments pubescent towards base; ovary 5-celled, scaly; style short, sharply deflexed, glabrous. Capsule small, 4–8 mm, densely scaly. Seeds wingless, obscurely finned.

Three species: Bhutan, China, India, Myanmar, Nepal, Sikkim; one species in China.

**152. *Rhododendron lepidotum*** Wallich ex G. Don, Gen. Hist. 3: 845. 1834.

鳞腺杜鹃 *lin xian du juan*

*Rhododendron sinolepidotum* I. B. Balfour.

Small shrubs, evergreen, 0.5–1.5(–2) m tall. Petiole 2–4 mm, scaly; leaf blade ± leathery, obovate, obovate-elliptic, or oblong-lanceolate to lanceolate, (0.4–)1.2–2.4(–3.8) × (0.2–)0.4–1.4(–1.8) cm; apex mucronate; abaxial surface pale grayish green, scales overlapping to 0.5 × their own diameter apart, yellow-green or brown, rims broad and translucent; adaxial surface

dark green, scales dense. Inflorescence 1–3(–4)-flowered. Pedicel (0.1–)0.2–2.5(–3.8) cm, scaly; calyx reddish; lobes 2–4 mm, variable in shape, ovate, oblong to rounded, persistent, scaly, ciliate; corolla broadly campanulate, white, pink, red to purple or yellow, often with darker spots, 0.9–1.7 cm, scaly; stamens (8–)10, longer than corolla, filaments densely pubescent towards base or for up to 2/3 of their length; ovary densely scaly; style sharply deflexed, short, glabrous. Capsule 4–8 mm, densely scaly. Fl. May–Jul, fr. Jul–Sep.

Forests, scrub, grassy slopes, moorlands, rocks; (1700–)3000–3600(–4200) m. W Sichuan, S Xizang, NW Yunnan [Bhutan, N India, NE Myanmar, Nepal, Sikkim].

**20. *Rhododendron*** subsect. **Baileya** Sleumer, Bot. Jahrb. Syst. 74: 531. 1949.

辐花杜鹃亚组 *fu hua du juan ya zu*

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Small shrubs, 0.5–1(–2) m tall; young shoots scaly. Leaf blade leathery; abaxial surface scales overlapping and flaky, crenulate; adaxial surface densely scaly, quickly glabrescent. Inflorescence terminal, racemose, 5–10(–18)-flowered; rachis 5–25 mm; pedicels longer than corolla; calyx (1.5–)2–4 mm, 5-lobed; corolla rotate, red-purple, often with darker spots, outer surface densely scaly; stamens 10; filaments hairy towards base; ovary densely scaly; style short, sharply deflexed, glabrous. Capsule ovoid-cylindric, 5–8 mm, densely scaly. Seeds wingless, obscurely finned.

One species: Bhutan, China, Sikkim.

**153. *Rhododendron baileyi*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 11: 23. 1919.

辐花杜鹃 *fu hua du juan*

Small shrubs, evergreen, 0.5–1(–2) m tall; branchlets scaly. Petiole 3–15 mm, densely scaly; leaf blade leathery, narrowly oblong, obovate, elliptic to oblong-ovate, 2–4(–7) × 0.8–2(–3.3) cm; base cuneate to rounded; apex obtuse, mucronate; abaxial surface usually dark brown, scales overlapping and flaky, crenulate; adaxial surface green, usually shiny, densely scaly when young, soon lost. Inflorescence 5–10(–18)-flower-

ed; rachis 5–25 mm, pubescent. Pedicel 1.2–3.5 cm, scaly; calyx reddish; lobes unequal, (1.5–)2–4 mm, ovate, oblong to deltoid, persistent in fruit, scaly, usually ciliate; corolla rotate, red-purple, often with darker spots, 0.8–1.6 cm; tube 5–9 mm, densely scaly; stamens 10, longer than tube, filaments densely hairy towards base or for 2/3 of length; ovary densely scaly; style sharply deflexed, short, glabrous. Capsule cylindric-ovate, 5–8 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

*Picea* and *Tsuga* forests, hillsides, screes, mossy rocks; 3000–4000 m. S Xizang [Bhutan, Sikkim].

**2. *Rhododendron*** sect. **Pogonanthum** G. Don, Gen. Hist. 3: 845. 1834.

髯花杜鹃组 *ran hua du juan zu*

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Small shrubs, evergreen, (0.3–)0.6–1.5(–2.8) m tall. Leaf bud scales deciduous or persistent, often fringed with branched dendroid hairs; leaves aromatic, variable, small. Leaf blade with abaxial surface scales stalked, lacerate, with or without a domed center, usually arranged in several tiers due to different lengths of stalk. Inflorescence a terminal, capitate, racemose umbel. Calyx 5-lobed; corolla salver-shaped or narrowly tubular, lobes spreading, white, pink, red, purple or yellow, always with a prominent ring of hairs inside throat; stamens 5–10, included in corolla tube; ovary (4 or)5-celled; style short, clavate, included in corolla tube. Capsule small, scaly. Seeds wingless, fins obscure.

About 22 species: Afghanistan, Bhutan, China, India, Kashmir, Mongolia, Myanmar, Nepal, Russia, Sikkim; 20 species (15 endemic) in China.

1a. Leaves setose ..... 171. *R. radendum*

- 1b. Leaves not setose.
- 2a. Calyx lobes 1–2.5 mm.
- 3a. Leaf blade linear, linear-lanceolate or narrowly oblanceolate; corolla tube not hairy outside ..... 172. *R. trichostomum*
- 3b. Leaf blade oblong or elliptic; corolla tube usually densely hairy outside.
- 4a. Leaf blade 0.8–2 cm; adaxial surface densely scaly; corolla narrowly tubular ..... 169. *R. nyingchiense*
- 4b. Leaf blade 1–1.2 cm; adaxial surface glabrous; corolla funnellform or salver-shaped.
- 5a. Corolla funnellform; calyx lobes 1–2 mm ..... 170. *R. tubulosum*
- 5b. Corolla salver-shaped; calyx lobes 2–2.5 mm ..... 159. *R. luhuoense*
- 2b. Calyx lobes 2–7 mm.
- 6a. Leaf blade smaller, 7–20 mm (some forms of *R. cephalanthum* may key out here).
- 7a. Adaxial leaf surface usually pale green, scaly; abaxial surface of leaves with pale yellow-brown or brown scales.
- 8a. Corolla rose, 5.5–7.5 mm; stems ca. 1.5 m ..... 160. *R. bellissimum*
- 8b. Corolla white or (rarely) rose, 9–19 mm; stems 0.3–1(–2.5) m.
- 9a. Corolla salver-shaped ..... 159. *R. luhuoense*
- 9b. Corolla narrowly tubular or narrowly funnellform.
- 10a. Corolla ca. 10 mm, outer surface of tube pilose ..... 158. *R. mainlingense*
- 10b. Corolla 12–19 mm, outer surface of tube glabrous or pilose ..... 167. *R. primuliflorum*
- 7b. Adaxial leaf surface dark green, with deciduous scales; abaxial surface with dark brown or ferruginous scales.
- 11a. Calyx lobe margins densely scaly, not ciliate; abaxial leaf surface with dark ferruginous scales ..... 157. *R. atropunicum*
- 11b. Calyx lobe margins long-ciliate, not scaly; abaxial leaf surface with dark brown scales.
- 12a. Leaf bud scales deciduous; corolla tube glabrous outside.
- 13a. Stamens 5; leaf blade 5–9 mm wide, abaxial surface dark chocolate-brown ..... 156. *R. rufescens*
- 13b. Stamens (5–)6–8(–10); leaf blade 10–16(–25) mm wide, abaxial surface dark reddish or yellow-brown ..... 164. *R. anthropogon*
- 12b. Leaf bud scales persistent; corolla tube pilose outside.
- 14a. Scales on abaxial leaf surface with lower tiers lighter than the upper tiers ..... 155. *R. sargentianum*
- 14b. Scales on abaxial leaf surface with lower tiers as dark as or darker than the upper tiers.
- 15a. Corolla tube densely pilose outside ..... 154. *R. laudandum*
- 15b. Corolla tube glabrous outside ..... 163. *R. hypenanthum*
- 6b. Leaf blade 20–50 mm.
- 16a. Corolla tube usually hairy or scaly outside.
- 17a. Corolla 8–11 mm; calyx ca. 1/2 as long as corolla tube; leaf blade shorter than 2.8 cm ..... 166. *R. kongboense*
- 17b. Corolla 12–19 mm; calyx ca. 1/3 as long as corolla tube; leaves up to 3.5 cm.
- 18a. Calyx lobes scaly outside, margins usually ciliate; corolla narrowly tubular ..... 167. *R. primuliflorum*
- 18b. Calyx lobes not scaly outside, margins fimbriate-lepidote; corolla hypocateriform ..... 168. *R. heteroclitum*
- 16b. Corolla tube glabrous outside.
- 19a. Leaf apex acute ..... 173. *R. hoi*
- 19b. Leaf blade apex obtuse or rounded, rarely emarginate.
- 20a. Leaf bud scales deciduous.
- 21a. Stamens (5–)6–8(–10); inflorescence 5–9-flowered; calyx scaly outside ..... 164. *R. anthropogon*
- 21b. Stamens 5; inflorescence 10–20-flowered; calyx not scaly outside ..... 165. *R. anthropogonoides*
- 20b. Leaf bud scales persistent.
- 22a. Leaf blade 3–5 cm; leaf bud scales large, broadly ovate, obovate to rounded, leafy ..... 161. *R. platyphyllum*
- 22b. Leaf blade 2–3.5 cm; leaf bud scales small, linear to lanceolate.
- 23a. Corolla white, pink to rose; calyx 4–7 mm ..... 162. *R. cephalanthum*
- 23b. Corolla pale yellow to yellow-green; calyx 2–4 mm ..... 163. *R. hypenanthum*

**154. *Rhododendron laudandum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 222. 1937.

毛冠杜鹃 mao guan du juan

Small shrubs, (0.15–)0.3–0.6(–1.2) m tall; bud scales deciduous or persistent. Petiole 2–4 mm; leaf blade leathery, aro-

matic, oblong-ovate, elliptic, ovate to orbicular, 0.9–1.8 × 0.4–1 cm; base rounded or broadly cuneate; apex rounded or obtuse, mucronate; abaxial surface scales overlapping, lacerate, dark reddish brown and dark brown, arranged in 2–3 tiers, lowermost tier usually darker than others; adaxial surface dark green or brownish, sparsely scaly when young, glabrescent. Inflores-

cence 5–10-flowered, bud scales persistent. Pedicel 0.3–0.6 cm; calyx lobes 4–6 mm, oblong to obovate, unequal, persisting to enclose mature capsule, densely scaly, margin ciliate; corolla narrowly tubular, pink, white, rarely yellow, 0.8–1.8 cm, tube 4.5–11.5 mm, outer surface not scaly, laxly to densely pilose, inner surface densely pilose; stamens 5(or 6), included in corolla tube, filaments glabrous; ovary 1–2 mm, scaly or not, sometimes densely hairy; style thick, shorter than ovary. Capsule ovoid, 2–4 mm. Fl. and fr. May–Jul.

Scrub, alpine meadows, steep alpine slopes, hillsides, moraines; 2900–5100 m. SE Xizang [Bhutan].

- 1a. Corolla usually pink; corolla tube densely pilose outside; leaf bud scales deciduous; ovary usually not scaly, but densely pubescent at least in lower 1/2; leaves 2 or more × longer than broad ..... 154a. var. *laudandum*
- 1b. Corolla usually white; corolla tube laxly pilose outside; leaf bud scales persistent; ovary densely scaly; leaves less than 2 × longer than broad ..... 154b. var. *temoense*

**154a. *Rhododendron laudandum* var. *laudandum***

毛冠杜鹃(原变种) mao guan du juan (yuan bian zhong)

Bud scales deciduous. Leaf blade 2 or more × longer than broad. Corolla usually pink; tube outer surface densely pilose; ovary usually without scales, densely pubescent all over or in lower 1/2. Fl. and fr. May–Jul.

Scrub, alpine meadows, rocky hillsides; 4000–5100 m. SE Xizang [Bhutan].

**154b. *Rhododendron laudandum* var. *temoense*** Kingdon Ward ex Cowan & Davidian, *Rhododendron Year Book* 2: 73. 1947.

疏毛冠杜鹃 shu mao guan du juan

Bud scales persistent. Leaf blade less than 2 × longer than broad. Corolla usually white; tube outer surface laxly pilose; ovary densely scaly, otherwise glabrous. Fl. and fr. Jun–Jul.

• Steep alpine slopes, hillsides, moraines; 2900–4800 m. SE Xizang.

**155. *Rhododendron sargentianum*** Rehder & E. H. Wilson in Sargent, *Pl. Wilson*. 1: 504. 1913.

水仙杜鹃 shui xian du juan

Small shrubs, usually prostrate, 0.3–0.6 m tall; branchlets short, twiggy; young shoots densely scaly; bud scales persistent. Petiole 2–4 mm; leaf blade aromatic, elliptic, broadly elliptic, or ovate, 0.8–1.6(–2) × 0.3–0.8(–1.1) cm; base rounded or broadly cuneate; apex rounded, mucronate; abaxial surface pale brown, scales overlapping, long-stalked, lacerate, arranged in 2–3 tiers, those of lowermost tier golden, paler than the rest; adaxial surface dark green, shiny, scaly when young, glabrescent. Inflorescence 5–7(–12)-flowered. Pedicel 0.2–0.8 cm; calyx lobes (2–) 3–4(–6) mm, oblong to obovate, persisting to enclose mature capsule, scaly, margin strap-shaped-ciliate; corolla narrowly tubular, whitish yellow, 1–1.6 cm, tube 6–9 mm; outer surface scaly on tube and at bases of lobes, inner surface densely pilose;

stamens 5, included in corolla tube, filaments glabrous; ovary 1–1.5 mm, scaly; style thick, straight, nearly as long as ovary, glabrous. Capsule ovoid, ca. 4 mm, scaly. Fl. May–Jul, fr. Oct.

• Cliffs, exposed rocks; 3000–4300 m. C and W Sichuan.

*Rhododendron praeclarum* I. B. Balfour & Farrer (*Notes Roy. Bot. Gard. Edinburgh* 9: 261. 1916), from Gansu (Min Shan), is described as having bright yellow (“flava”) flowers. It differs from *R. sargentianum*, the yellow-flowered species to which it is most closely allied, as the calyx lobes are fringed with scales, not loriform ciliae. Cullen (*Notes Roy. Bot. Gard. Edinburgh* 38: 167. 1980) considered that *R. praeclarum* was almost indistinguishable from *R. primuliflorum*, but noted that the type locality is disjunct. If the flower color is correct then this affinity seems unlikely.

**156. *Rhododendron rufescens*** Franchet, *J. Bot. (Morot)* 9: 397. 1895.

红背杜鹃 hong bei du juan

*Rhododendron daphniflorum* Diels.

Small shrubs, (0.2–)0.3–0.5(–1) m tall; branchlets usually twiggy and intricate, scaly; bud scales deciduous. Petiole 2–5 mm; leaf blade aromatic, elliptic, ovate-oblong, rarely ovate, 1–2(–2.5) × (0.5–)0.6–0.9(–1.2) cm; base rounded or tapering; apex usually rounded, mucronate; abaxial surface scales overlapping, cinnamon or dark brown, arranged in 2–3 tiers, the lowermost tier usually darker than rest; adaxial surface dark green, shiny, glabrous. Inflorescence 5–8(–12)-flowered. Pedicel ca. 0.2 cm; calyx lobes 3–4 mm, oblong-elliptic, persisting to enclose mature capsule, scales mostly absent, margin ciliate and scaly; corolla narrowly tubular, white or pale rose, 1.2–1.4(–1.7) cm, tube 6–8(–9.5) mm, inner surface densely pilose; lobes spreading, rounded, usually sparsely scaly outside; stamens 5, included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style thick, straight. Capsule ovoid, ca. 3 mm, scaly. Fl. May–Jul, fr. Sep.

• Thickets, grasslands, open rocky pastures; 3800–4600 m. Qinghai, C, N, and SW Sichuan.

**157. *Rhododendron atropunicum*** H. P. Yang, *Acta Bot. Yunnan*. 10: 367. 1988.

暗紫杜鹃 an zi du juan

Small, erect shrubs, 1–1.8 m tall; branchlets with ferruginous, deciduous scales. Petiole 2–4 mm, scaly; leaf blade aromatic, elliptic, oblong-elliptic, 1–2 × 0.4–1 cm; base cuneate; apex rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, small, dark ferruginous; adaxial surface dark green, glabrous. Inflorescence 4–6-flowered. Pedicel 0.2–0.3 cm, scaly; calyx lobes 2.5–4 mm, oblong-elliptic, scaly, margin densely scaly; corolla salver-shaped, white, 0.9–1.1 cm, tube 7–8 mm, outer surface sparsely pilose, inner surface densely pilose; lobes rounded, 0.2–0.3 cm; stamens 5 or 6, included in corolla tube, filaments sparsely puberulous at base; ovary nearly ovoid, ca. 2 mm, densely scaly; style thick, straight, shorter than ovary. Fl. Jun.

• Wood margins; ca. 3600 m. SW Sichuan.

**158. *Rhododendron mainlingense*** S. H. Huang & R. C. Fang, *Fl. Xizangica* 3: 674. 1986.

米林杜鹃 mi lin du juan

Small shrubs, ca. 0.5 m tall; branchlets densely scaly, setose; bud scales deciduous. Petiole ca. 3 mm, densely scaly; leaf blade aromatic, oblong-elliptic or elliptic, 0.7–1.6 × 0.4–0.7 cm; base rounded or cuneate; apex acute, mucronate; abaxial surface scales dense, pale yellow to yellow-brown; adaxial surface dark green, densely scaly. Inflorescence several-flowered. Pedicel ca. 0.2 cm, densely scaly; calyx lobes 3–4 mm, oblong, scaly, densely so along middle, margin ciliate; corolla narrowly tubular, white, ca. 1 cm, tube densely pilose inside and out; stamens 5 or 6, included in corolla tube, filaments glabrous; ovary scaly, puberulous; style turbinate, very short, glabrous. Fl. May–Jul.

- Thickets; ca. 4000 m. SE Xizang.

**159. *Rhododendron luhuoense*** H. P. Yang, Acta Bot. Yunnan. 10: 368. 1988.

炉霍杜鹃 lu huo du juan

Small, erect shrubs, ca. 1 m tall; branchlets short, tortuous, with ferruginous, deciduous scales. Petiole 1–3 mm, densely scaly; leaf blade aromatic, oblong or oblong-elliptic, 0.8–1.2 × 0.35–0.4 cm; base broadly cuneate to rounded; apex rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, small, pale yellow-brown; adaxial surface pale green, sparsely scaly. Inflorescence 3–5-flowered. Pedicel 1–2 cm, scaly; calyx lobes 2–2.5 mm, oblong-lanceolate, scales absent, margin ciliate; corolla salver-shaped, white, 0.9–1.1 cm, tube 6–7 mm, outer surface sparsely puberulous, inner surface densely villous; lobes rounded, 0.3–0.35 cm; stamens 5, included in corolla tube, filaments glabrous; ovary ovoid, ca. 2.6 mm, densely scaly; style ca. 0.8 mm. Fl. Jun–Jul.

- *Larix potaninii* forests; ca. 4000 m. NW Sichuan.

**160. *Rhododendron bellissimum*** D. F. Chamberlain, **nom. nov.**

美鳞杜鹃 mei lin du juan

Replaced synonym: *Rhododendron bellum* H. P. Yang, Bull. Bot. Res., Harbin 9(1): 18. 1989, not *R. bellum* W. P. Fang & G. Z. Li, Bull. Bot. Res., Harbin 4(1): 3. 1984.

Small, erect shrubs, ca. 1.5 m tall; branchlets virgate, scaly. Petiole ca. 1 mm, scaly; leaf blade aromatic, elliptic-oblong or obovate-oblong, 0.8–1.2 × 0.3–0.4 cm; base broadly cuneate to rounded; apex rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, small, unequal, pale yellow-brown; adaxial surface pale green, scales pale, deciduous. Inflorescence 4–7-flowered. Pedicel ca. 0.1 cm, scaly; calyx lobes 2–3 mm, oblong, unequal, sparsely scaly, margin long-ciliate; corolla salver-shaped, rose, 5.5–7.5 cm, tube 3.5–4.5 mm, outer surface not scaly, sparsely puberulous; inner surface densely villous; lobes unequal, rounded, ca. 0.2 cm; stamens 5, included in corolla tube, filaments glabrous; ovary broadly ovoid ca. 2 mm, densely scaly; style ca. 1 mm, glabrous. Fl. May–Jun.

- Meadows at forest margins; ca. 3400 m. C Sichuan.

**161. *Rhododendron platyphyllum*** (Franchet ex Diels) I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9:

259. 1916.

阔叶杜鹃 kuo ye du juan

*Rhododendron cephalanthum* Franchet var. *platyphyllum* Franchet ex Diels, Notes Roy. Bot. Gard. Edinburgh 7: 211, 392. 1912; *R. cephalanthum* subsp. *platyphyllum* (Franchet ex Diels) Cullen.

Erect or semiprostrate shrubs, 0.15–1.5 m tall; branchlets short, scaly; bud scales persistent, large, broadly ovate or rounded. Petiole 3–6 mm, scaly; leaf blade aromatic, broadly elliptic, oblong-ovate or ovate, 0.3–0.5 × 0.2–0.3 cm; base rounded or cuneate; apex obtuse or rounded, rarely emarginate; abaxial surface scales overlapping, arranged in 2–3 tiers, unequal, brown, dark brown, or rust-colored; adaxial surface dark green, shiny, glabrous. Inflorescence 6–10-flowered. Pedicel 0.3–0.5 cm, scaly; calyx lobes (3–)5–7 mm, oblong or elliptic, persisting to enclose mature capsule, scaly, margin ciliate; corolla narrowly tubular-funnelform, white, creamy white or pink, rarely yellowish or rose, 1.8–2 cm, tube 13–14 mm, outer surface glabrous, inner surface densely pilose; stamens 5(–8), included in corolla tube, filaments slightly puberulous towards base; ovary ca. 1 mm, scaly; style as long as ovary, glabrous. Capsule ovoid, ca. 3 mm, densely scaly. Fl. May–Jun, fr. Jul–Aug.

- Bamboo brakes, among rocks in open alpine pastures, cliffs, ledges; 3000–4500 m. C and NW Yunnan.

This taxon is treated as a subspecies of *Rhododendron cephalanthum* by some authors.

**162. *Rhododendron cephalanthum*** Franchet, Bull. Soc. Bot. France 32: 9. 1885.

毛喉杜鹃 mao hou du juan

*Rhododendron chamaetortum* I. B. Balfour & Kingdon Ward.

Semiprostrate or semidecumbent shrubs, often contorted, rarely erect, 0.3–0.6(–1.5) m tall; branchlets short, thick, scaly; bud scales persistent, conspicuous, linear to lanceolate. Petiole ca. 3 mm, scaly; leaf blade aromatic, oblong-elliptic or oblong-ovate, 1–3.5 × 0.5–1.6 cm; base rounded; apex obtuse or rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, unequal, pale yellow-brown or reddish brown; adaxial surface dark green, shiny, glabrous. Inflorescence 5–10-flowered. Pedicel 0.2–0.5 cm, scaly; calyx lobes 4–7 mm, oblong or ovate, persisting to enclose mature capsule, scaly, margin long-ciliate; corolla narrowly tubular, with spreading lobes, white, pink, to rose, (0.8–)1.2–1.5(–2) cm, tube 6.5–13 mm, outer surface not scaly; inner surface densely pilose; stamens 5(–8), included in corolla tube, filaments puberulous towards base; ovary 1–2 mm, densely scaly; style thick, turbinate, nearly as long as ovary. Capsule ovoid, 3–4 mm, densely scaly. Fl. May–Jul, fr. Sep–Nov.

*Rhododendron* thickets, moorlands, rocky slopes; (3000–)3800–4400(–4600) m. S Qinghai, NW Sichuan, S Xizang, C and N Yunnan [NE India, Myanmar].

**163. *Rhododendron hypenanthum*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 9: 291. 1916.

毛花杜鹃 mao hua du juan

*Rhododendron anthopogon* D. Don subsp. *hypenanthum* (I. B. Balfour) Cullen; *R. anthopogon* var. *hypenanthum* (I. B. Balfour) H. Hara.

Small shrubs, 0.3–0.8(–0.95) m tall; branchlets short, scaly, setose; bud scales persistent. Petiole 3–7 mm, scaly; leaf blade aromatic, elliptic, oblong-elliptic or obovate-elliptic, (1.2–)2.5–3.5(–4.2) × (0.6–)1–1.6(–2) cm; base rounded, or broadly cuneate; apex obtuse or rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, dark reddish brown; adaxial surface dark green, shiny, glabrous. Inflorescence 5–7(–10)-flowered. Pedicel 0.2–0.4 cm, scaly; calyx lobes 2–4 mm, elliptic or ovate-lanceolate, persisting to enclose mature capsule, scaly, margin densely ciliate; corolla narrowly tubular-funnelform, pale yellow to yellow-green, tube nearly as long as lobes, outer surface not scaly; inner surface densely pilose; lobes spreading, 1.2–1.9 cm; stamens 5 or 6(–8), included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style short, thick, straight, nearly as long as ovary, glabrous. Capsule ovoid, 2–5 mm, scaly. Fl. May–Jul, fr. Aug–Sep.

*Rhododendron* thickets, scrub, open hillsides; 3500–4500(–5500) m. S Xizang [Bhutan, N India, Nepal, Sikkim].

This taxon is treated as a subspecies (or variety) of *Rhododendron anthopogon* by some authors.

**164. *Rhododendron anthopogon*** D. Don, Mem. Wern. Nat. Hist. Soc. 3: 409. 1821.

髯花杜鹃 ran hua du juan

*Rhododendron anthopogon* var. *album* Davidian.

Small shrubs, often prostrate or decumbent, (0.3–)0.5–1(–1.5) m tall; branchlets loose, intricate, scaly, sparsely setose; bud scales deciduous. Petiole 3–8 mm, scaly; leaf blade aromatic, obovate-elliptic, ovate, rarely orbicular, (1.5–)2.5–3.5(–4) × 1–1.6(–2.5) cm; base rounded; apex obtuse or rounded, mucronate; abaxial surface scales overlapping, dark reddish brown and dark yellow-brown, arranged in 2–3 tiers, often those of the lowest tier darker than rest; adaxial surface dark green, shiny, usually sparsely scaly. Inflorescence 4–6(–9)-flowered. Pedicel 0.2–0.4 cm, scaly; calyx lobes 3–5(–6) mm, elliptic or oblong, persisting to enclose mature capsule, scaly, margin densely ciliate; corolla narrowly tubular-funnelform, pink, or yellowish white, tube 6–12 mm, outer surface not scaly; inner surface densely pilose; lobes spreading, 1.2–2 cm; stamens (5–)6–8(–10), included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style short, thick, straight, as long as ovary, glabrous. Capsule ovoid, 3–5 mm, scaly. Fl. Apr–Jun, fr. Jul–Aug.

Thickets, open slopes, hillsides, cliff ledges; 3000–4500(–5000) m. S Xizang [Bhutan, N India, Nepal, Sikkim].

**165. *Rhododendron anthopogonoides*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 350. 1877.

烈香杜鹃 lie xiang du juan

Small, erect shrubs, 1–1.5(–2) m tall; branchlets thick,

scaly; bud scales deciduous. Petiole 2–4(–5) mm, scaly; leaf blade aromatic, ovate-elliptic, broadly elliptic or ovate, (1.5–)2–3.5(–4.7) × 1–1.8(–2.3) cm; base rounded or truncate; apex obtuse or rounded, mucronate; abaxial surface scales overlapping, arranged in several tiers, reddish brown or dark brown plastered; adaxial surface bluish green, matt, sparsely scaly or glabrous. Inflorescence 10–20-flowered. Pedicel 1–2 cm, not scaly; calyx lobes 3–4(–4.5) mm, oblong-obovate or elliptic-ovate, persisting to enclose mature capsule, scales absent, margin erose, ciliate and with a few scales; corolla narrowly tubular-funnelform, with spreading lobes, aromatic, greenish white, greenish yellow or whitish pink, 1–1.4 cm, tube 5–11 mm, outer surface not scaly; inner surface densely pilose; stamens 5, included in corolla tube, filaments glabrous; ovary 1–2 mm, scaly; style turbinate, nearly as long as ovary, glabrous. Capsule ovoid, 3–4.5 mm, scaly. Fl. Jun–Jul, fr. Aug–Sep.

• *Picea* forests, scrub, slopes; 2900–3700 m. Gansu, Qinghai, NW Sichuan.

**166. *Rhododendron kongboense*** L. Rothschild, Suppl. *Rhododendron* Assoc. Year Book 1933: 53. 1933.

工布杜鹃 gong bu du juan

Small, erect shrubs, 0.15–0.3(–2) m tall; branchlets often short, thin, twiggy, scaly; bud scales deciduous. Petiole 2–6 mm, scaly; leaf blade aromatic, oblong, elliptic-oblong or oblong-lanceolate, 1.3–2.8 × 0.5–1.2 cm; base rounded or obtuse; apex subacute, mucronate; abaxial surface scales overlapping, arranged in several tiers, pale yellowish brown or pale brown; adaxial surface dark green, sparsely scaly. Inflorescence 6–12-flowered. Pedicel 0.1–0.4 cm, scaly, pubescent; calyx lobes 3–5 mm, oblong or obovate, persisting to enclose mature capsule, sometimes scaly, margin long-ciliate, rarely scaly; corolla narrowly tubular, with spreading lobes, pink, or rose to reddish purple, 0.8–1.2 cm, tube 6–8 mm, outer surface not scaly, variably pilose, inner surface densely pilose; stamens 5, included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style turbinate, nearly as long as ovary. Capsule ovoid, ca. 3 mm, scaly. Fl. and fr. Jun–Aug.

*Rhododendron* thickets, moorlands, rocky slopes, limestone cliffs, among boulders; 4300–4500(–5000) m. S Xizang [Bhutan].

**167. *Rhododendron primuliflorum*** Bureau & Franchet, J. Bot. (Morot) 5: 95. 1891 [*“primulaeflorum”*].

樱草杜鹃 ying cao du juan

Small shrubs, 0.3–1(–2.5) m tall; branchlets short, thin, twiggy, densely scaly, setose; bud scales deciduous. Petiole ca. 2.4(–5) mm, scaly; leaf blade aromatic, oblong, oblong-elliptic, or ovate-oblong, (0.8–)2–2.5(–3.5) × (0.5–)0.8–1(–1.5) cm; base tapering; margin with or without strap-shaped bristles; apex obtuse, mucronate; abaxial surface scales overlapping, pale yellowish brown or brown, arranged in 2–3 tiers, the lowermost tier paler than rest; adaxial surface dark green, shiny, scales present or absent. Inflorescence 5–8-flowered. Pedicel 0.2–0.4 cm, scaly; calyx lobes 3–5(–6) mm, oblong, lanceolate or oblong-ovate, persisting to enclose mature capsule, usually scaly, margin ciliate or not; corolla narrowly tubular-funnelform, white with yellow tube, rarely rose or entirely pink, 1.2–

1.9 cm, tube 6–10(–12) mm, outer surface usually glabrous, more rarely sparsely pilose or somewhat scaly, throat densely pilose, lobes spreading; stamens 5(or 6), included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style turbinate, nearly as long as ovary. Capsule ovoid-cylindric, 4–5 mm, densely scaly. Fl. May–Jun, fr. Jul–Sep.

• Mixed forests, thickets, alpine moorlands, swamps, rocky pastures and slopes, cliffs, boulders; 2900–5000(–5100) m. S Gansu, W Sichuan, S Xizang, N Yunnan.

- 1a. Leaves and corolla glabrous ..... 167a. var. *primuliflorum*
- 1b. Leaves ciliate; corolla pilose or scaly.
  - 2a. Corolla tube usually densely puberulous outside ..... 167b. var. *cephalanthoides*
  - 2b. Corolla lobes densely scaly outside ..... 167c. var. *lepidanthum*

**167a. *Rhododendron primuliflorum* var. *primuliflorum***

樱草杜鹃(原变种) ying cao du juan (yuan bian zhong)

*Rhododendron acraium* I. B. Balfour & W. W. Smith; *R. clivicola* I. B. Balfour & W. W. Smith; *R. cremnophilum* I. B. Balfour & W. W. Smith; *R. gymnomiscum* I. B. Balfour & Kingdon Ward; *R. tsarongense* I. B. Balfour & Forrest.

Leaves and corolla without hairs. Corolla tube outer surface usually glabrous. Fl. May–Jun, fr. Jul–Sep.

• Alpine moorlands, rocky pastures, cliffs, boulders; (2900–) 3700–4100(–5100) m. S Gansu, W Sichuan, S Xizang, NW Yunnan.

**167b. *Rhododendron primuliflorum* var. *cephalanthoides*** (I. B. Balfour & W. W. Smith) Cowan & Davidian, *Rhododendron Year Book* 2: 79. 1947.

微毛樱草杜鹃 wei mao ying cao du juan

*Rhododendron cephalanthoides* I. B. Balfour & W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 9: 216. 1916.

Leaf blade ciliate. Corolla tube outer surface usually densely puberulous. Fl. May–Jun.

• Mixed thickets, *Rhododendron* thickets, swamps, rocky alpine pastures; (3300–)4000–5000 m. W Sichuan, SE Xizang, N Yunnan.

**167c. *Rhododendron primuliflorum* var. *lepidanthum*** (I. B. Balfour & W. W. Smith) Cowan & Davidian, *Rhododendron Year Book* 2: 79. 1947.

鳞花樱草杜鹃 lin hua ying cao du juan

*Rhododendron lepidanthum* I. B. Balfour & W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 9: 245. 1916.

Leaf blade ciliate. Corolla lobes densely scaly on outer surface. Fl. May.

• Mixed forests, thickets, rocky slopes; 2900–4300 m. SW Sichuan, NW Yunnan.

**168. *Rhododendron heteroclitum*** H. P. Yang, *Bull. Bot. Res., Harbin* 9(1): 17. 1989.

异常杜鹃 yi chang du juan

Small erect shrubs, ca. 0.6 m tall; branchlets virgate, scaly. Petiole 1–2 mm, scaly; leaf blade aromatic, elliptic, rounded or

ovate, 1.5–3.5 × 1–2 cm; base broadly cuneate or rounded; apex rounded, mucronate; abaxial surface scales overlapping, arranged in 2–3 tiers, small, unequal, pale yellowish brown; adaxial surface pale green, sparsely scaly. Inflorescence 5–7-flowered. Pedicel ca. 0.1 cm, scaly; calyx lobes 2–3 mm, oblong-elliptic, unequal, scales absent, margin fimbriate-scaly; corolla salver-shaped, pale rose, 1.2–1.5 cm, tube 6–7 mm, outer surface not scaly, sparsely pubescent, throat densely pilose, lobes orbicular, 0.6–0.7 cm; stamens 5, included in corolla tube, filaments glabrous; ovary ovoid, ca. 2 mm, densely scaly; style ca. 0.6–0.8 cm. Fl. May–Jun.

• *Rhododendron* forest margins; 3800–3900 m. W Sichuan.

**169. *Rhododendron nyingchiense*** R. C. Fang & S. H. Huang, *Fl. Xizangica* 3: 674. 1986.

林芝杜鹃 lin zhi du juan

Small shrubs, 0.3–1 m tall; branchlets densely dark reddish brown scaly; bud scales deciduous. Petiole 4–5 mm, densely dark reddish brown scaly; leaf blade aromatic, oblong-elliptic or elliptic, 0.8–2 × 0.5–0.8 cm; base broadly cuneate or rounded; apex obtuse, mucronate; abaxial surface scales dense, dark reddish brown; adaxial surface dark green, densely scaly. Inflorescence 3- or 4-flowered. Pedicel 0.2–0.3 cm, densely scaly; calyx lobes 1–2 mm, densely scaly; corolla narrowly tubular, pink, or rose to white, ca. 1.2 cm, tube outer surface and throat densely pilose; stamens 5, included in corolla tube, filaments glabrous; ovary densely scaly; style shorter than or equal to ovary, glabrous. Fl. May.

• Forests, slopes; 3700–4300 m. SE Xizang.

**170. *Rhododendron tubulosum*** Ching ex W. Y. Wang, *Acta Phytotax. Sin.* 20: 57. 1982.

长管杜鹃 chang guan du juan

Small shrubs, up to 1 m tall; branchlets virgate, spreading, densely pubescent. Petiole 3–4 mm, scaly; leaf blade aromatic, elliptic to oblong, 1–1.2 cm; apex acute; base cuneate; abaxial surface scales dense, pale brown; adaxial surface green, shiny, glabrous. Inflorescence 5- or 6-flowered. Pedicel ca. 0.1 cm, scaly; calyx lobes 1–2 mm, unequal, margin ciliate; corolla funnel-form, white or pale rose; tube ca. 8 mm, outer surface and throat densely pilose; lobes orbicular or oblong, 0.3–0.4 cm; stamens 5, included in corolla tube, filaments glabrous; ovary oblong, 1–1.3 mm, densely scaly; style 1.5–2 mm. Fl. Jun–Jul.

• Stony slopes; ca. 4000 m. SE Qinghai.

**171. *Rhododendron radendum*** W. P. Fang, *Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot.* 12: 62. 1939.

毛叶杜鹃 mao ye du juan

Small shrubs, 0.5–1 m tall; branchlets densely scaly, setose; bud scales deciduous. Petiole 2–3 mm, scaly, setose; leaf blade aromatic, oblong-lanceolate, obovate-lanceolate to ovate-lanceolate, 1–1.8 × 0.3–0.6 cm; base rounded to tapering; margin scaly and strap-shaped-setose; apex acute or obtuse; abaxial surface scales overlapping, arranged in 2–3 tiers, pale yellowish brown and dark brown; adaxial surface green, shiny, scaly, setose. Inflorescence 8–10-flowered. Pedicel 0.2–0.3 cm,



scaly, setose; calyx lobes 1–2 mm, ovate, scaly, setose, margin ciliate; corolla narrowly tubular with spreading lobes, pink to pale rose-purple, 0.8–1.2 cm, tube 6–10(–12) mm, outer surface scaly, throat densely pilose; stamens 5, included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style turbinate, nearly as long as ovary. Fl. May–Jun.

• Mixed thickets, *Rhododendron* thickets, boulders; 3000–4100 m. W Sichuan.

**172. *Rhododendron trichostomum*** Franchet, J. Bot. (Morot) 9: 396. 1895.

毛嘴杜鹃 mao zui du juan

Small, intricately branched shrubs, 0.3–1(–1.5) m tall; branchlets twiggy, densely scaly, setose; bud scales deciduous, rarely persistent. Petiole 2–4 mm, scaly; leaf blade aromatic, linear, linear-lanceolate, oblong or oblanceolate, 0.8–3.2 × 0.3–0.5(–0.8) cm; base rounded to tapering; margin revolute; apex acute or obtuse, mucronate or emarginate; abaxial surface scales overlapping, pale yellowish brown to brown, arranged in 2–3 tiers, the lowermost tier golden, paler than others, rarely somewhat; adaxial surface dark green, scaly or not. Inflorescence 6–10(–20)-flowered. Pedicel (0.1–)0.2–0.5 cm, scaly; calyx lobes 0.5–2(–3) mm, oblong to ovate, persistent, scaly or not, margin usually scaly, ciliate; corolla narrowly tubular, white, pink or rose, 0.8–1.6(–2) cm, tube 4.5–8(–12) mm, outer surface densely scaly or not scaly, throat densely pilose; lobes with a few scales but no hairs; stamens 5, included in corolla tube, filaments glabrous; ovary ca. 1 mm, scaly; style turbinate, shorter than or equal to ovary. Capsule ovate to cylindric, 3–5 mm, densely scaly. Fl. May–Jul, fr. Aug–Sep.

• Forests, thickets, scrub, rocky alpine meadows, open slopes, rocks; 2700–4600 m. S Qinghai, W Sichuan, SE Xizang, NW Yunnan.

*Rhododendron hedyosmum* I. B. Balfour (Notes Roy. Bot. Gard. Edinburgh 9: 234. 1916) was described from cultivated material derived from seed collected in Sichuan. Known only in cultivation, it is a large-flowered variant, and probably a hybrid, of *R. trichostomum*.

- 1a. Leaf bud scales persistent; corolla densely scaly outside; style usually shorter than ovary; adaxial surface of leaves usually densely scaly ..... 172c. var. *radinum*
- 1b. Leaf bud scales deciduous; corolla usually scaly outside; style often as long as ovary; adaxial surface of leaves usually not scaly.
  - 2a. Leaves usually oblong or oblanceolate; corolla white to rose ..... 172a. var. *trichostomum*
  - 2b. Leaves linear or linear-lanceolate; corolla pale rose ..... 172b. var. *ledoides*

**172a. *Rhododendron trichostomum* var. *trichostomum***

毛嘴杜鹃(原变种) mao zui du juan (yuan bian zhong)

*Rhododendron sphaeranthum* I. B. Balfour & W. W. Smith.

Bud scales deciduous. Leaf blade usually oblong or oblanceolate; adaxial surface usually scaly. Corolla white to rose; outer surface usually not scaly; style nearly as long as ovary. Fl.

May–Jul, fr. Aug–Sep.

• Forests, thickets, scrub, rocky alpine meadows, open slopes; 3000–4000(–4400) m. S Qinghai, W Sichuan, SE Xizang, NW Yunnan.

**172b. *Rhododendron trichostomum* var. *ledoides*** (I. B. Balfour & W. W. Smith) Cowan & Davidian, *Rhododendron Year Book* 2: 84. 1947.

筒花毛嘴杜鹃 tong hua mao zui du juan

*Rhododendron ledoides* I. B. Balfour & W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 9: 243. 1916.

Bud scales deciduous. Leaf blade linear or linear-lanceolate; adaxial surface usually scaly. Corolla pale rose; outer surface usually not scaly; style nearly as long as ovary. Fl. May–Jun.

• Forests, thickets; (3500–)3900–4600 m. SW Sichuan, NW Yunnan.

**172c. *Rhododendron trichostomum* var. *radinum*** (I. B. Balfour & W. W. Smith) Cowan & Davidian, *Rhododendron Year Book* 2: 84. 1947.

鳞斑毛嘴杜鹃 lin ban mao zui du juan

*Rhododendron radinum* I. B. Balfour & W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 9: 268. 1916.

Bud scales persistent. Leaf blade with adaxial surface usually densely scaly. Corolla outer surface densely scaly; style usually shorter than ovary. Fl. May–Jun.

• Thickets, scrub, open slopes, rocks; 2700–3400(–3800) m. SW Sichuan, NW Yunnan.

**173. *Rhododendron hoi*** W. P. Fang, *Acta Sci. Nat. Univ. Szechuan*. 1957(2): 216. 1957 [*“hoii”*].

川北杜鹃 chuan bei du juan

*Rhododendron anthopogonoides* Maximowicz subsp. *hoi* (W. P. Fang) W. P. Fang & Z. X. Xiong.

Shrubs, 0.6–1 m tall; branchlets blackish scaly. Petiole ca. 2 mm, scaly; leaf blade elliptic, 1.5–2(–2.5) × 1–1.2 cm; base rounded to broadly cuneate; margin somewhat revolute; apex acute, mucronulate; abaxial surface scales dense, brown or yellowish; adaxial surface shiny, glabrous. Inflorescence 10–12-flowered. Pedicel ca. 0.2 cm, glabrous; calyx lobes ca. 5 mm persisting to enclose mature capsule, glabrous except for the ciliate margin; corolla funnelform, pinkish, 1.3–1.5 cm, tube 7–9 mm, outer surface glabrous, inner surface villous; stamens 5, included within the tube, filaments glabrous; ovary ca. 1.5 mm, scaly; style ca. 1 mm. Capsule ca. 4 mm. Fl. Jun, fr. Aug.

• Mountain summits, ridges, grassy slopes; 3500–3600 m. NC Sichuan (Lixian, Maowen, Wenchuan).

The original author suggested that this species has affinities with *Rhododendron anthopogonoides* and *R. rufescens*. From the original description, it may be close to *R. primuliflorum*.

3. *Rhododendron* sect. *Vireya* H. F. Copeland, Philipp. J. Sci. 40: 151. 1929.

越桔杜鹃组 yue ju du juan zu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Vireya* Blume, Bijdr. 854. 1826, not Rafinesque (1814).

Shrubs or small trees, evergreen, epiphytic or terrestrial. Leaves scattered or clustered at top of branches or nodes and thus whorled. Leaf blade with both surfaces scaly, scales entire, or lobed. Inflorescence a terminal 1- to several-flowered umbel. Calyx small, cup-shaped or plate-shaped, inconspicuously 5-lobed, or margin undulate; corolla shortly tubular, funnellform, tubular-campanulate or campanulate; tube short to long and slender, erect or slightly curved; lobes slightly longer than tube or less than 1/4 as long as tube, yellow, orange-yellow, white, or pale to deep red. Stamens 10; filaments hairy at least towards base; ovary oblong to tubular or ovate, densely scaly, often hairy; style glabrous or hairy, scaly. Capsule fusiform, cylindric or oblong, scaly, often hairy. Carpels thin, ± twisted after opening, recurved. Seed often with caudate appendages on both sides.

About 300 species: mostly in tropical SE Asia, extending northwest to the Himalayas and south to N Australia; 11 species (six endemic) in China.

- 1a. Calyx undeveloped, margin entire or undulate.
  - 2a. Inflorescence 1-flowered; leaf apex emarginate.
    - 3a. Leaf blade 1.5–3.5 × 1–1.5 cm; ovary without hairs ..... 174. *R. emarginatum*
    - 3b. Leaf blade 0.6–1 × 0.2–0.5 cm; ovary pubescent ..... 176. *R. densifolium*
  - 2b. Inflorescence 4–7-flowered; leaf apex obtuse or acute, not emarginate.
    - 4a. Corolla 8–10 mm; calyx undulate or with crenulate lobes ..... 177. *R. datiangense*
    - 4b. Corolla 10–15 mm; calyx with triangular lobes, to 4 mm ..... 178. *R. rushforthii*
- 1b. Calyx conspicuously lobed.
  - 5a. Leaf blade oblong-obovate, 2–5 × 1–3 cm.
    - 6a. Leaf apex not emarginate; calyx 1–2 mm, lobes ovate or triangular; corolla 1–1.5 cm ..... 179. *R. kawakamii*
    - 6b. Leaf apex emarginate; calyx 2–4 mm, lobes ovate or oblong; corolla ca. 0.8 cm ..... 180. *R. asperulum*
  - 5b. Leaf blade spatulate, obovate to oblong-obovate, 1.2–2.4 × 0.5–1.2 cm.
    - 7a. Corolla white or pale red; calyx ca. 3 mm ..... 181. *R. vaccinioides*
    - 7b. Corolla yellow; calyx 1–2 mm.
      - 8a. Inflorescence 1-flowered; ovary pubescent.
        - 9a. Calyx pubescent; corolla with red spots on three lobes ..... 182. *R. rupivalleculatum*
        - 9b. Calyx without hairs; corolla without spots ..... 175. *R. poilanei*
      - 8b. Inflorescence (1- or)2-flowered; ovary without hairs.
        - 10a. Young shoots densely papillate-glandular; leaf blade with lateral veins conspicuously concave adaxially; pedicels 2–2.5 cm, longer than leaves ..... 183. *R. maguanense*
        - 10b. Young shoots sparsely glandular; leaf blade with lateral veins inconspicuous adaxially; pedicels 1.5–2 cm, shorter than leaves ..... 184. *R. leiboense*

**174. *Rhododendron emarginatum*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 118. 1910.

缺顶杜鹃 que ding du juan

Many-branched shrubs, sometimes epiphytic, 1–1.5 m tall; internodes short; young shoots papillate, scaly; bud scales soon deciduous. Petiole 2–5 mm, scaly; leaf blade leathery, oblong-obovate, oblanceolate or spatulate, 1.5–3.5 × 0.8–1.5 cm; base cuneate; margin revolute; apex broadly rounded, emarginate, apiculate; abaxial surface pale yellowish green, scales 2–3(–5) × their own diameter apart, concave; adaxial surface deep green, glabrous; midrib and lateral veins raised abaxially, concave adaxially; lateral veins 3- or 4-paired. Inflorescence terminal, 1-flowered. Pedicel 1.4–2.3 cm, scaly; base subtended by several bracts; calyx lobes shallow and undulate, sparsely scaly; corolla campanulate, golden, 1.3–1.5 cm, outer surface scaly; stamens 10, unequal, as long as or shorter than corolla; filaments pubescent in lower 2/3; ovary 5-locular, densely scaly, glabrous; style erect or arching, shorter than corolla, longer than stamens. Cap-

sule narrowly cylindric, 10–13 mm, glandular scaly. Fl. Oct–Jan.

• Epiphytic on trees, rocks; 1200–2000 m. Guangxi, Guizhou, SE Yunnan.

**175. *Rhododendron poilanei*** Dop in Lecomte, Fl. Indo-Chine 3: 739. 1930.

毛果缺顶杜鹃 mao guo que ding du juan

*Rhododendron emarginatum* Hemsley & E. H. Wilson var. *eriocarpum* K. M. Feng; ?*R. euonymifolium* H. Léveillé.

Multi-branched shrubs, sometimes epiphytic, ca. 0.5 m tall; young shoots papillate, scaly; bud scales soon deciduous. Petiole 2–6 mm, scaly; leaf blade leathery, obovate or obovate-spatulate, 1.2–2.5 × 0.8–1.3 cm; base cuneate; apex rounded, sometimes retuse; abaxial surface pale yellowish green, scales 4–6 × their own diameter apart; lateral veins inconspicuous on both surfaces. Inflorescence terminal, 1-flowered. Pedicel 0.5–1 cm, scaly; calyx lobes conspicuous, 1–2 mm, scales present,

sparse; corolla campanulate, golden, 0.8–1 cm; tube ca. 3 mm; outer surface sparsely scaly; mouth hairy; lobes 0.6–0.7 cm; stamens 10, unequal; filaments hairy around the middle, glabrous below; ovary scaly, pubescent; style straight, shorter than corolla and stamens. Capsule narrowly cylindrical, ca. 10 mm. Fl. Aug–Sep.

Mountain thickets; 1200–2100 m. Guangxi, Yunnan [N Vietnam].

*Rhododendron emarginatum* var. *eriocarpum*, described from Guangxi and Yunnan, is synonymous with *R. poilanei*, described from N Vietnam. These two taxa share a hairy ovary with *R. euonymifolium*, which could, if also synonymous, be the earliest name for the species (H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 103. 1913). One of the syntypes of the latter species, *Esquirol 661* (E), is very poor but has ovaries, all of which are hairy. However, there is some confusion, as the other, rather more complete syntype, *J. Cavalerie 264* (E), has both hairy and hairless ovaries. This is the crucial character separating *R. poilanei* from the more or less sympatric *R. emarginatum*. It appears that designation of a lectotype is required.

**176. *Rhododendron densifolium*** K. M. Feng, Acta Bot. Yunnan. 5: 266. 1983.

密叶杜鹃 mi ye du juan

Shrubs, 0.3–1.3 m tall; young shoots slender, purplish brown, densely glandular and scaly. Petiole ca. 2 mm, scaly; leaf blade leathery, obovate or oblanceolate, 0.6–1.0 × 0.4–0.5 cm; base cuneate; margin revolute; apex emarginate, apiculate; abaxial surface pale green, scales 2–4 × their own diameter apart, concave, brown; adaxial surface green; lateral veins inconspicuous on both surfaces. Inflorescence terminal, 1-flowered. Pedicel 1.3–1.5 cm, scaly; calyx rounded or inconspicuously 5-lobed, small, scales present; corolla campanulate, 5-lobed, golden, ca. 0.8 cm, outer surface sparsely glandular-scaly; lobes oblong, ca. 0.55 cm; stamens 10; filaments sparsely pubescent in lower 1/2; ovary scaly, densely pubescent; style persistent, down-curved, 2–4 mm, glabrous; stigma capitate. Capsule cylindrical-elliptic, 5-lobed, 7–11 mm, brown-scaly, densely pubescent.

Mixed forests and thickets in rocky mountains; 1000–1800 m. SE Yunnan [Vietnam].

**177. *Rhododendron datiangingense*** Z. J. Feng, J. S. China Agric. Univ. 17(1): 59. 1996.

大天顶杜鹃 da tian ding du juan

Small epiphytic shrubs, 0.3–0.5 m tall; upper shoots spreading, gray-brown. Petiole flattened, 3–5 mm; leaf blade oblong-oblanceolate to elliptic oblanceolate, 2–4 × 1–2 cm; base narrow, often decurrent; margin strongly revolute; apex obtuse or acute; abaxial surface sparsely scaly; adaxial surface blackish green, polished, midrib and lateral veins impressed when dry. Inflorescence terminal, umbellate racemose, 4–7-flowered. Pedicel 0.7–1.2 cm; calyx undulate or obtusely crenulate, small; corolla shortly campanulate, yellow, 0.8–1 cm; tube 4–5 mm, mouth hairy; stamens 10, ca. 0.6 cm, filaments white-hairy in lower half though glabrous at base; ovary ca. 3 mm; style arched, ca. 3 mm; stigma capitate. Capsule ellipsoid, 10–13 × ca. 6 mm. Fl. Jun, fr. Oct.

• Epiphytic. W Guangdong (Datian Ding).

*Rhododendron datiangingense* is apparently allied to *R. kawakamii*, sharing with that species a several-flowered inflorescence.

**178. *Rhododendron rushforthii*** Argent & D. F. Chamberlain, New Plantsman 3(4): 195. 1996.

滇越杜鹃 dian yue du juan

Small shrubs, perhaps epiphytic, to 1.5 m tall; older shoots ash-gray. Petiole 8–15 mm; leaf blade thick, glaucous, especially when young, elliptic, 1.8–11 × 1.7–4.2 cm; base cuneate, narrowly decurrent; margin cartilaginous; apex broadly acute, apiculate; abaxial surface scales scattered, brown; adaxial surface scaly, at first silvery, turning brown and quickly lost, midrib and lateral veins impressed. Inflorescence terminal, umbellate, 3–8-flowered. Pedicel 1–1.4 cm; calyx lobes 3–4 mm, triangular, unequal; corolla shortly campanulate, yellow, 1–1.5 cm, tube 4–7 mm, outer surface finely scaly, mouth hairy; stamens 10, 0.8–0.9 cm, filaments hairy in lower half though glabrous at base; ovary ca. 4 mm; style arched, ca. 5 mm; stigma capitate. Capsule not known. Fl. (in cultivation) Jun.

Probably epiphytic, also mossy banks. S China (see note below) [N Vietnam].

This species is closely allied to *Rhododendron datiangingense*, and may be conspecific, although the flowers are significantly larger. The glaucous leaves are a significant feature of *R. rushforthii*. It was originally described from Lao Cai Province, N Vietnam, close to the border with S Yunnan at Pingbian. It is known from cultivated material said to have come from S China.

**179. *Rhododendron kawakamii*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 171. 1911.

着生杜鹃 zhuo sheng du juan

Multi-branched shrubs, epiphytic, 0.3–1.5 m tall; young shoots slender, long, twisted, glandular-scaly. Petiole 2–8 mm, sparsely scaly; leaf blade leathery, oblong-obovate to obovate or oblanceolate, 2–5 × 1–3 cm; base cuneate; margin slightly revolute; apex rounded, apiculate; abaxial surface yellowish green, scales 2–3 × their own diameter apart, small, unequal, glandular, brown; adaxial surface dark or fresh green, scaly or not, midrib and lateral veins raised abaxially, concave adaxially. Inflorescence terminal, umbellate, 3–6-flowered. Pedicel 0.2–0.25 cm, sparsely glandular-scaly; calyx lobes 5, 1–2 mm, ovate or triangular, scaly abaxially and on margin; corolla campanulate, white to pale red or yellow, 1–1.5 cm, outer surface glandular-scaly; lobes broadly ovate; stamens 10, unequal, 0.6–0.7 cm, shorter than corolla; filaments densely pubescent in lower 2/3; ovary 5-locular, scaly, densely pubescent; style stout, erect or arched, shorter than corolla, as long as or slightly longer than stamens, often glabrous, sometimes with lower part pubescent. Capsule tubular or subovoid, 8–12 mm, densely pubescent or sparsely villous.

• Thickets, sometimes epiphytic on trees; 800–2600 m. Taiwan.

- 1a. Corolla white to red; leaf blade obovate to oblong-obovate; petiole 2–8 mm ..... 179a. var. *kawakamii*
- 1b. Corolla yellow; leaf blade oblanceolate; petiole short ..... 179b. var. *flaviflorum*

**179a. *Rhododendron kawakamii* var. *kawakamii***

着生杜鹃(原变种) *zhuo sheng du juan* (*yuan bian zhong*)

Petiole 2–8 mm; leaf blade obovate to oblong-obovate. Corolla white to pale red.

- Thickets, sometimes epiphytic on trees; 1400–2600 m. Taiwan.

**179b. *Rhododendron kawakamii* var. *flaviflorum* Liu & Chuang, Quart. J. Taiwan Mus. 13: 64. 1960.**

黄色着生杜鹃 *huang se zhuo sheng du juan*

*Rhododendron taiwanianum* S. S. Ying.

Petiole short; leaf blade oblanceolate. Corolla yellow.

- Epiphytic on trees; 800–2100 m. Taiwan.

**180. *Rhododendron asperulum* Hutchinson & Kingdon Ward in J. B. Stevenson, Sp. Rhodod. 818. 1930.**

瘤枝杜鹃 *liu zhi du juan*

Small shrubs, sometimes epiphytic, ca. 0.6 m tall; young shoots densely papillate, scaly. Petiole 2–3 mm, scaly; leaf blade leathery, oblong-obovate, 2–3.5 × 1–2 cm; base cuneate; margin revolute; apex rounded, emarginate, apiculate; abaxial surface scales 2–3(–5) × their own diameter apart, small or mid-sized, unequal, glandular, brown; adaxial surface dark or fresh green, scaly or not; lateral veins concave. Inflorescence terminal, umbellate, 1–3-flowered. Pedicel 1.3–2.2 cm, scaly; calyx deeply 5-lobed; lobes 2–4 mm, ovate or oblong, scales sometimes present at base abaxially; corolla shortly campanulate, pale pink, 0.7–0.8 cm, outer surface scaly; stamens 10, unequal, as long as or shorter than corolla; filaments pubescent in the lower 2/3; anthers orange-yellow; ovary 5-locular, densely scaly, glabrous; style stout, erect or arched, shorter than stamens; base scaly. Capsule long and slender, dehiscent from top, 20–25 × ca. 3 mm.

Epiphytic on evergreen trees or on trees in open grassland, moss-covered rocks; 1400–2200 m. SE Xizang, W Yunnan [Myanmar].

**181. *Rhododendron vaccinioides* J. D. Hooker, Rhododendr. Sikkim-Himalaya 2: 3. 1851.**

越桔杜鹃 *yue ju du juan*

*Rhododendron sinovaccinioides* I. B. Balfour & Forrester.

Small shrubs, sometimes epiphytic, 0.3–1 m tall; branches sparse, long, often pendulous; young shoots densely papillate-glandular, rough, glandular-hairy. Petiole 1–3 mm, scaly; leaf blade thick and leathery, spatulate-oblongate or oblong-obovate, 1.3–2 × 0.5–0.8 cm; base cuneate, decurrent along petiole; apex rounded, emarginate, apiculate; abaxial surface scales 2–5 × their own diameter apart, glandular; concave; adaxial surface glabrous; lateral veins inconspicuous on both surfaces. Inflorescence terminal, umbellate, 1- or 2-flowered. Pedicel 0.1–0.15 cm, glandular-scaly; calyx lobes 5, ca. 3 mm, oblong or ovate; corolla campanulate, 5-lobed, creamy white or white tinged with pale red, 0.6–1.1 cm, outer surface glandular scaly; stamens 10, unequal, as long as corolla; filaments densely villous in lower 2/3; ovary 5-locular, densely scaly, glabrous; style stout, erect or arched, shorter than corolla and stamen. Capsule long-cylindric, 14–30 mm. Fl. May–Jun, fr. Jul.

Epiphytic on tree trunks in evergreen broad-leaved forests and evergreen and deciduous mixed forests, rocks; 1800–2700(–3100) m. SE Xizang, NW and SE Yunnan [Bhutan, India, N Myanmar, Nepal, Sikkim].

**182. *Rhododendron rupivalleculatum* P. C. Tam, Guihaia 2: 69. 1982.**

岩谷杜鹃 *yan gu du juan*

Small shrubs, epiphytic, 0.2–0.6 m tall. Stem cylindrical, multi-branched; young shoots rough, densely papillate. Petiole ca. 3 mm or sessile; leaf blade leathery, spatulate-obovate, 1.4–2 × 0.8–1 cm; base cuneate; margin conspicuously revolute; apex emarginate, apiculate; abaxial surface pale green, sparsely scaly; adaxial surface olive green, shiny; midrib conspicuous, lateral veins inconspicuous. Inflorescence terminal, 1-flowered. Pedicel slender, 1–1.5 cm, scaly, pubescent; calyx 5-lobed; lobes ca. 1.2 mm, oblong, sparsely scaly, pubescent; corolla shortly campanulate, yellow, 3 lobes with red spots, 1–1.2 cm, outer surface sparsely scaly; lobes spatulate-ovate, longer than tube; stamens 10, 0.8–1 cm, filaments pubescent around the middle; ovary scaly, densely pubescent; style often arched, ca. 5 mm. Capsule cylindrical, 9–12 × ca. 3.5 mm, scaly, pubescent and densely glandular. Fl. Jul–Sep, fr. Nov–Jan.

- Rocks in open valley forests, summits of open hills; 1200–1400 m. Guangdong, Guangxi.

This species is closely allied to *Rhododendron poilanei*.

**183. *Rhododendron maguanense* K. M. Feng, Acta Bot. Yunnan. 5: 268. 1983.**

马关杜鹃 *ma guan du juan*

Shrubs, 1–2 m tall; young shoots slender, brown, densely rough-papillate-glandular. Petiole 3–4 mm, scaly; leaf blade leathery, obovate, 1.2–2.2 × 0.8–1.1 cm; base cuneate; margin revolute; apex rounded, emarginate, apiculate; abaxial surface pale green, scales 2–3 × their own diameter apart, concave; adaxial surface green; lateral veins 3–4-paired, concave above and flat below. Inflorescence terminal, 1- or 2-flowered. Pedicel brown-purple, 2–2.5 cm; calyx lobes 5, ca. 1 mm, ovate-triangular, scaly abaxially; corolla campanulate, 5-lobed, golden yellow, 0.8–1 cm, tube ca. 4 mm, outer surface scaly; lobes oblong, 0.5–0.6 cm; stamens 10, unequal, 0.7–0.8 cm; filaments villous in lower 1/2; ovary densely scaly; style 3–4 mm, glabrous; stigma capitate. Capsule not known.

- Thickets in mountains; 2000–2600 m. SE Yunnan.

*Rhododendron maguanense* may be synonymous with *R. emarginatum*. According to the descriptions, the former has calyx lobes that are triangular and 1 mm, the latter has an undulate calyx. There appears to be little else to distinguish them.

**184. *Rhododendron leiboense* Z. J. Zhao, Bull. Bot. Res., Harbin 7(3): 57. 1987.**

雷波杜鹃 *lei bo du juan*

Shrubs, epiphytic, ca. 1 m tall; young shoots slender, sparsely glandular. Leaf blade leathery, elliptic, spatulate or ovate-spatulate, 1.6–2.4 × 0.6–1.2 cm; base narrow; apex trun-

cate and emarginate; abaxial surface pale yellowish, scales 2–3 × their own diameter apart; adaxial surface dark green, glabrous; lateral veins inconspicuous. Inflorescence terminal, umbellate, 2-flowered. Pedicel brown, slender, 0.15–0.2 cm, densely scaly; calyx lobes 5, ca. 2 mm, triangular, apex rounded, base densely scaly; corolla campanulate, yellow, ca. 1.2 cm, tube ca.

8 mm; outer surface sparsely scaly; stamens 10, unequal, 0.7–1 cm, shorter than corolla; anthers ca. 2 mm; ovary densely scaly; style stout, erect or arched, 3–4 mm; stigma capitate, truncate. Capsule not known.

- 1400–1500 m. C and S Sichuan.

2. *Rhododendron* subg. *Pseudazalea* Sleumer, Bot. Jahrb. Syst. 74: 525. 1949.

毛枝杜鹃亚属 *mao zhi du juan ya shu*

Yang Hanbi (杨汉碧 Yang Han-pi); David F. Chamberlain

Small to medium-sized shrubs, mostly deciduous or semievergreen, rarely evergreen; young shoots scaly, usually setose or hairy. Leaf blade with abaxial surface sparsely scaly, scales variously colored, vesicular. Inflorescence terminal, 2–6-flowered: flowers opening before leaf emergence. Calyx rimlike to clearly lobed, usually ciliate; corolla broadly campanulate or funnellform-campanulate, yellow, sometimes tinged with red, variably spotted, scaly, sometimes setose; stamens 10; filaments pubescent; ovary scaly, usually setose; style usually sharply deflexed. Capsule small, scaly. Seeds wingless, obscurely finned.

Six species: China, India, Myanmar, Nepal; six species (four endemic) in China.

- 1a. Leaves deciduous; flowers produced before leaves.
  - 2a. Branchlets, petioles, pedicels, and leaf blade margin setose; scales on abaxial leaf surface subequal, 1–7 × their own diameter apart ..... 185. *R. trichocladum*
  - 2b. Branchlets, petioles, pedicels, and leaf blade margin usually not setose (leaf blade adaxially densely long-setose in *R. mekongense* var. *longipilosum*); scales on abaxial leaf surface unequal, close to 4 × their own diameter apart ..... 186. *R. mekongense*
- 1b. Leaves evergreen or sometimes semievergreen; flowers produced after leaves.
  - 3a. Leaf bud scales persistent; ovary, calyx, corolla tube, capsule, and midrib on abaxial leaf surface setose ..... 187. *R. lepidostylum*
  - 3b. Leaf bud scales deciduous; ovary, calyx, corolla tube, capsule, and midrib on abaxial leaf surface not setose.
    - 4a. Abaxial leaf surface markedly glaucous, sparsely scaly, scales 2–5 × their own diameter apart; branchlets and petioles usually not long-setose ..... 188. *R. caesium*
    - 4b. Abaxial leaf surface usually pale green, densely scaly, scales 1–3 × their own diameter apart; branchlets and petioles usually densely long-setose.
      - 5a. Leaves semievergreen, not setose ..... 189. *R. viridescens*
      - 5b. Leaves evergreen, setose ..... 190. *R. nanjianense*

185. *Rhododendron trichocladum* Franchet, Bull. Soc. Bot. France 33: 234. 1886.

糙毛杜鹃 *cao mao du juan*

*Rhododendron brachystylum* I. B. Balfour & Kingdon Ward; *R. lophogynum* I. B. Balfour & Forrest ex Hutchinson; *R. oulotrichum* I. B. Balfour & Forrest; *R. xanthinum* I. B. Balfour & W. W. Smith.

Shrubs, deciduous, 0.4–1.5(–2) m tall; branchlets branchlets sparsely scaly, long-setose; bud scales deciduous. Petiole 1–4(–5) mm, scaly, long-setose; leaf blade obovate, or obovate-elliptic to oblong-lanceolate, (1.5–)2–4(–6) × (0.6–)1–2(–2.6) cm; base cuneate; margin setose; apex rounded, mucronate; abaxial surface scales 1–7 × their own diameter apart, pale or dark brown, midrib setose; adaxial surface green, usually sparsely scaly, setose. Inflorescence 1–3(–5)-flowered. Pedicel 0.6–1.2(–3.5) cm, scaly, long-setose; calyx lobes ovate to oblong, persistent in fruit, scaly, ciliate; corolla funnel-campanulate, yellow or greenish yellow, with or without green spots, 1.4–2.4 cm; tube 7–11 mm, scaly, sometimes setose; stamens 10, filaments pubescent towards base; ovary scaly, occasionally setose; style thick, sharply bent, rarely straight. Capsule cylindrical-ovate, 5–8(–10) mm, scaly. Fl. May–Jul, fr. Jul–Aug.

*Abies* forests, thickets, scrub, open rocky slopes, cliffs; 2000–3600 m. C and W Yunnan, SE Xizang [N Myanmar].

186. *Rhododendron mekongense* Franchet, J. Bot. (Morot) 12: 263. 1898.

弯月杜鹃 *wan yue du juan*

Shrubs, deciduous, semievergreen or evergreen, (0.6–)1–1.5(–2) m tall; young growth scaly, long-setose; bud scales deciduous. Petiole 1–2(–5) mm, sparsely scaly, long-setose; leaf blade leathery, obovate or oblanceolate to obovate-elliptic, 2.5–5(–6.5) × 0.8–2(–2.7) cm; base cuneate; margin usually setose; apex rounded, mucronate; abaxial surface slightly glaucous, scales 1–4 × their own diameter apart, unequal, pale or dark brown; midrib usually sparsely setose; adaxial surface dark green, without scales, glabrous or long-setose. Inflorescence 2–4(–5)-flowered. Pedicel 1–2.5 cm, scaly, usually sparsely long-setose; calyx lobes rounded, ovate, oblong to lanceolate, persistent in fruit, scaly, long-ciliate or glabrous; corolla broadly campanulate, yellow, greenish yellow, or creamy yellow, sometimes lined and flushed rose on outside, 1.5–2(–2.3) cm; tube 7–11 mm; outer surface usually scaly; stamens 10, filaments villous or pubescent towards base; ovary scaly; style thick,

sharply bent. Capsule cylindrical, 7–11 mm, densely scaly. Fl. May–Jun, fr. Jul–Sep.

Forest margins, thickets, scrub, open pastures, slopes, valleys, cliffs, rocks, rarely swamps; 3000–4300 m. S Xizang, NW Yunnan [India, NE Myanmar, Nepal].

- 1a. Adaxial leaf surface densely long-setose ..... 186d. var. *longipilosum*
- 1b. Adaxial leaf surface not long-setose.
  - 2a. Leaves evergreen or sometimes semievergreen; corolla creamy yellow, lined and flushed rose on outside; branchlets and pedicels not setose ..... 186c. var. *rubrolineatum*
  - 2b. Leaves deciduous; corolla yellow or greenish yellow; branchlets and pedicels setose.
    - 3a. Calyx glabrous; corolla yellow ..... 186b. var. *melinanthum*
    - 3b. Calyx ciliate; corolla yellow to greenish yellow ..... 186a. var. *mekongense*

**186a. *Rhododendron mekongense* var. *mekongense***

弯月杜鹃(原变种) wan yue du juan (yuan bian zhong)

*Rhododendron rubroluteum* Davidian.

Shrubs deciduous; branchlets and pedicels setose. Leaf blade adaxially glabrous. Calyx ciliate; corolla yellow to greenish yellow. Fl. May–Jun, fr. Jul–Sep.

Forest margins, thickets, grassy slopes, cliffs; 3000–3800 m. S Xizang, NW Yunnan [NE Myanmar, Nepal].

**186b. *Rhododendron mekongense* var. *melinanthum*** (I. B. Balfour & Kingdon Ward) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 115. 1978.

密花弯月杜鹃 mi hua wan yue du juan

*Rhododendron melinanthum* I. B. Balfour & Kingdon Ward, Trans. Bot. Soc. Edinburgh 27: 85. 1916; *R. chloranthum* I. B. Balfour & Forrest; *R. semilunatum* I. B. Balfour & Forrest.

Shrubs deciduous; branchlets and pedicels setose. Leaf blade adaxially glabrous. Calyx glabrous; corolla yellow. Fl. May–Jun, fr. Jul–Aug.

Forest margins, thickets, scrub, grassy slopes, valleys; 3300–4300 m. SE Xizang, NW Yunnan [NE Myanmar].

**186c. *Rhododendron mekongense* var. *rubrolineatum*** (I. B. Balfour & Forrest) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 115. 1978.

红线弯月杜鹃 hong xian wan yue du juan

*Rhododendron rubrolineatum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 160. 1920.

Shrubs evergreen or sometimes semievergreen; branchlets and pedicels not setose. Leaf blade adaxially glabrous; corolla creamy yellow, lined and flushed rose on outside. Fl. May–Jun.

Forest margins, open pastures, valleys, rocks, rarely swamps; 3200–4300 m. S Xizang, NW Yunnan [India].

**186d. *Rhododendron mekongense* var. *longipilosum*** (Cowan) Cullen, Notes Roy. Bot. Gard. Edinburgh 36: 115. 1978.

长毛弯月杜鹃 chang mao wan yue du juan

*Rhododendron trichocladum* Franchet var. *longipilosum* Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 186. 1936.

Leaf blade adaxially densely long-setose. Fl. Jun–Jul.

Thickets, scrub, slopes; 3000–4000 m. S Xizang, NW Yunnan [NE Myanmar].

It may be better to treat var. *longipilosum* as a variety or subspecies of *R. trichocladum*, as originally described. The bristles then fit. On the type, the scales are subequal on the abaxial surface of the leaf blades.

**187. *Rhododendron lepidostylum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 124. 1920.

常绿糙毛杜鹃 chang lü cao mao du juan

Shrubs, evergreen, 0.3–1.5 m tall; young growth scaly, densely long-setose; bud scales persistent. Petiole 4–12 mm, scaly, long-setose; leaf blade leathery, obovate, oblong-obovate to ovate, (2–)3–4(–4.5) × (1–)1.5–1.8(–2) cm; base rounded; margin revolute, long-setose; apex rounded, mucronate; abaxial surface glaucous, scales 1–4 × their own diameter apart, usually unequal, golden, midrib setose; adaxial surface bluish green, glabrous. Inflorescence 1–2(–3)-flowered. Pedicel 2–3 cm, scaly, long-setose; calyx lobes 1–7 mm, lanceolate to ovate, persistent in fruit, scaly, long-setose, margin long-setose; corolla funnelform-campanulate, yellow, sometimes with orange spots, 2–3.3 cm; tube 10–12 mm; outer surface scaly, long-setose; stamens 10, filaments pubescent towards base; ovary scaly, setose; style slender, straight, usually longer than corolla. Capsule cylindrical, ca. 10 mm, scaly, long setose. Fl. May–Jun, fr. Jul–Aug.

- Cliffs, ledges, boulders; 3000–3700 m. W Yunnan.

**188. *Rhododendron caesium*** Hutchinson, Gard. Chron., ser. 3, 94: 102. 1933.

蓝灰糙毛杜鹃 lan hui cao mao du juan

Shrubs, semievergreen, 1–1.5 m tall; young growth sparsely scaly, otherwise glabrous; bud scales deciduous. Petiole 2–6 mm, scaly, setose; leaf blade leathery, oblong, oblong-lanceolate, elliptic to oblong-ovate, 2.5–4(–6) × 1.2–2(3.4) cm; base rounded; margin slightly revolute, long-setose; apex rounded, mucronate; abaxial surface glaucous, scales 2–5 × their own diameter apart, unequal, brown, midrib setose; adaxial surface pale bluish green, glabrous. Inflorescence (1–)2–3(–5)-flowered. Pedicel 1–1.5(–2) cm, scaly; calyx lobes 1–2 mm, rounded to ovate, persistent in fruit, scaly, margin sparsely setose; corolla funnelform-campanulate, yellow or yellowish green, with greenish spots, 1.5–2(–2.5) cm; tube 7–10(–12) mm; outer surface scaly, without hairs; stamens 10, filaments pubescent towards base; ovary scaly; style slender, straight, nearly as long as corolla. Capsule cylindrical, ca. 10 mm, densely scaly. Fl. May, fr. Jun.

- Rocky slopes, valleys; 2400–3100 m. C and W Yunnan.

**189. *Rhododendron viridescens*** Hutchinson, Gard. Chron., ser. 3, 94: 116. 1933.

显绿杜鹃 xian lü du juan

Shrubs, semievergreen, 0.3–1(–1.5) m tall; young growth sparsely scaly, setose; bud scales deciduous. Petiole 1–2(–4) mm, scaly, setose; leaf blade leathery, elliptic, obovate, oblong-obovate to ovate, 1.5–3(–6.7) × 1–2(–3) cm; base obtuse; apex rounded, mucronate; abaxial surface pale green, scales 1–3 × their own diameter apart, unequal, brown and pale yellow, not setose; adaxial surface bright green, glabrous. Inflorescence 3- or 4(–6)-flowered. Pedicel 1.2–2.5(–3) cm, scaly, setose; calyx lobes 0.5–1(–2) mm, ovate or rounded, persistent in fruit, scaly, margin setose; corolla funnellform-campanulate, yellowish green to yellow, with greenish spots on the posterior side, margin sometimes tinged pale crimson, 1.6–2(–2.5) cm; outer surface scaly, without hairs; stamens 10, filaments villous towards base; ovary scaly; style slender, straight or sharply bent, nearly as long as corolla. Capsule cylindric, 6–8 mm, densely scaly. Fl. Jun–Aug, fr. Sep.

• Forests, thickets, boggy pastures, valleys; 3000–3400 m. SE Xizang.

**190. *Rhododendron nanjianense*** K. M. Feng & Z. H. Yang, Acta Bot. Yunnan. 9: 55. 1987.

南涧杜鹃 nan jian du juan

Small shrubs, 0.3–0.5 m tall; young growth densely setose. Petiole 4–7 mm, densely setose; leaf blade leathery, oblong-elliptic or ovate, 2–3.5 × 0.7–1.7 cm; base rounded; margin setose; apex obtuse, mucronate; abaxial surface pale green, scales sparse, unequal, brown, midrib sparsely setose; adaxial surface green, glabrous. Inflorescence 4–6-flowered. Pedicel 2–2.5 cm, scaly, setose; calyx lobes 1–2 mm, rounded, scaly, margin setose; corolla broadly funnellform-campanulate, yellow, 2–2.3 cm, lobes oblong, as long as tube; stamens 10, filaments villous towards base; ovary scaly; style 1.5–2.2 cm. Capsule ovoid, 6–8 mm, densely scaly. Fl. May–Jun.

• Thickets; 2600–2800 m. W Yunnan.

**3. *Rhododendron* subg. *Pseudorhodorastrum*** Sleumer, Bot. Jahrb. Syst. 74: 529. 1949.

糙叶杜鹃亚属 cao ye du juan ya shu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

Small shrubs, evergreen, (0.1–)0.2–2.5(–3.5) m tall; new foliage shoots arising from uppermost (subterminal) buds, and from leaf axils; young shoots scaly, sometimes also pilose or strigose. Leaf blade with abaxial surface scaly and often also hairy. Inflorescences axillary, usually subterminal just below the terminal vegetative buds, umbellate, usually subtended by persistent bud scales, 1–5-flowered. Calyx usually small, to well-developed, shallowly cup-shaped to 5-lobed; corolla broadly funnellform to tubular, 5-lobed, often to below middle, 0.8–2.7 cm, pale red, white or purplish red, outside glabrous or glandular-scaly or base sometimes pubescent, rarely scaly; stamens 8–10; filaments usually partly pubescent, often with glabrous base; ovary 5-locular, scaly, often also hairy; style slender, erect. Capsule usually cylindric, 5–14 mm, scaly, sometimes pubescent. Seed wingless.

Ten species: Bhutan, China, Sikkim; ten species (nine endemic) in China.

*Rhododendron* subg. *Pseudorhodorastrum* was not recognized by Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 1–207. 1980) and is probably not confirmed by DNA sequencing.

- 1a. Adaxial leaf surface pilose or with strigose hairs; abaxial surface rarely glabrous; stamens 8–10 ..... 1. *R.* sect. *Trachyrhodion*
- 1b. Adaxial leaf surface with no hairs, abaxial surface white; stamens 10.
  - 2a. Inflorescences axillary, 1- or 2-flowered, flowering shoot racemelike; outer surface of corolla with dense short pilose hairs; seeds with appendages at both ends ..... 2. *R.* sect. *Rhabdorhodion*
  - 2b. Inflorescences subterminal, 2–5-flowered, usually clustered; outer surface of corolla without hairs; seeds lacking appendages ..... 3. *R.* sect. *Rhodobotrys*

**1. *Rhododendron* sect. *Trachyrhodion*** Sleumer, Bot. Jahrb. Syst. 74: 529. 1949.

糙叶杜鹃组 cao ye du juan zu

Small shrubs; young branches scaly and pilose or strigose. Leaf blade with both surfaces, or at least the adaxial surface, scaly and usually hairy at least along veins, sometimes without hairs. Inflorescence 1–4-flowered. Calyx with obvious lobes or reduced to a rim, abaxially densely pubescent; corolla tubular-campanulate or funnellform, white or pink to deep red, outer surface scattered with glandular scales or glabrous, usually without hairs, pilose or glabrous; ovary densely scaly and hairy; style glabrous or pilose near base. Capsule scaly and pubescent. Seed wingless.

• Seven species: China.

- 1a. Calyx developed, with conspicuous lobes.
  - 2a. Leaf blade 3–7 × 1–2.5 cm; corolla 5-lobed to below the middle; shrubs 0.5–2 m tall; branches stout and straight ..... 196. *R. scabrifolium*
  - 2b. Leaf blade 1.2–4 × 0.4–1.2 cm; corolla 5-lobed to the middle; shrubs 0.2–0.6(–2) m tall; branches many, thin ..... 197. *R. spiciferum*

1b. Calyx shallowly cup-shaped, without conspicuous lobes.

3a. Plant pubescent, not hirsute.

4a. Abaxial leaf surface with brown scales but without hairs, grayish white; corolla 0.9–1.3 cm ..... 191. *R. hemitrichotum*

4b. Abaxial leaf surface densely pubescent; corolla 2–2.7 cm ..... 192. *R. mollicomum*

3b. Plant pubescent and hirsute.

5a. Corolla shortly funnelform; lobes obviously spreading; leaf blade ca. 2.2 × 0.6 cm, both surfaces densely pubescent and long hispid ..... 195. *R. pubescens*

5b. Corolla tubular or tubular-campanulate; lobes not or only slightly spreading; leaf blade 2.8–4.5 × 1–3.8 cm, both surfaces pubescent only.

6a. Corolla tubular, lobes shorter than tube, erect, not spreading; corolla bright red; filaments glabrous ..... 193. *R. spinuliferum*

6b. Corolla tubular-campanulate, lobes as long as tube, erect or slightly spreading; corolla pinkish red; filaments densely pubescent ..... 194. *R. ×duclouxii*

**191. *Rhododendron hemitrichotum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 115. 1920.

粉背碎米花 *fen bei sui mi hua*

Small multi-branched shrubs, 0.3–1(–2) m tall; old branches gray, less hairy and scaly; young shoots brown-scaly, densely white-pubescent. Petiole 1–3 mm, densely pubescent or scaly; leaf blade thinly leathery, narrowly oblong, narrowly elliptic or lanceolate, 1.5–3 × 0.5–1.2 cm; base cuneate or obtuse; margin revolute; apex obtuse or shortly acuminate, apiculate; abaxial surface gray-white, scales less than their own diameter apart, glabrous or sparsely hairy along central vein; adaxial surface deep green, densely pubescent. Inflorescence subterminal, 2- or 3-flowered; bud scales persistent. Pedicel slender, 0.2–0.6 cm, densely scaly, very sparsely or densely pubescent; calyx shallowly cup-shaped, without conspicuous lobes, or round-emarginate, small, densely scaly; corolla funnelform, pink or purplish red, 0.9–1.3 cm, outer surface often glandular-scaly; stamens 8, unequal, slightly exerted from corolla; filaments pubescent or glabrous at base; ovary 5-locular, scaly, densely pubescent; style exerted from corolla; base glabrous or pubescent. Capsule cylindrical, ca. 6 mm, scaly, pubescent. Fl. May–Jul or Oct–Dec.

• *Pinus* forests, thickets; 2200–4000 m. Sichuan, NW Yunnan.

**192. *Rhododendron mollicomum*** I. B. Balfour & W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 249. 1916.

柔毛碎米花 *rou mao sui mi hua*

*Rhododendron mollicomum* var. *rockii* Tagg.

Multi-branched shrubs, 0.3–2 m tall; old branches gray, turning glabrous; young shoots sparsely brownish scaly, dirty white-pubescent. Petiole ca. 4 mm, densely pubescent; leaf blade thickly leathery, narrowly oblong or lanceolate, 1.6–4.5 × 0.5–1.5 cm; base cuneate; margin revolute; apex obtuse or acuminate, apiculate; abaxial surface densely scaly, densely pubescent, hairs spreading along central vein; adaxial surface densely pubescent; midrib raised abaxially, concave adaxially. Inflorescence subterminal, 1- or 2-flowered; bud scales persistent. Pedicel 0.5–0.8 cm, sparsely scaly and densely pubescent; calyx shallowly cup-shaped, without conspicuous lobes, small, abaxially scaly and densely pubescent; corolla pale to deep red, 2–2.7 cm, tube slightly curved, 10–13 mm, outer surface glabrous, lobes spreading, outer surface sparsely scaly; stamens 10, unequal, slightly exerted from corolla; filaments glabrous

at base, pubescent at middle; ovary 5-locular, scaly, densely white-pubescent; style exerted from corolla, basal 1/3 pubescent. Capsule cylindrical, 7–12 mm, scaly, pubescent. Fl. (Mar–) Jun–Jul.

• Coniferous and *Quercus* forests in river valleys, thickets on slopes; ca. 2300 m. SW Sichuan, NW Yunnan.

**193. *Rhododendron spinuliferum*** Franchet, J. Bot. (Morot) 9: 399. 1895.

爆杖花 *bao zhang hua*

Shrubs, 0.5–1(–3.5) m tall; old branches brownish red, nearly glabrous; young shoots gray-pubescent, also hispid. Petiole 3–6 mm, ± pubescent, setose or scaly; leaf blade papery, obovate, elliptic, elliptic-lanceolate, or lanceolate, 3–10.5 × 1.8–3.8 cm; base cuneate; apex acuminate, rarely acute, apiculate; abaxial surface paler, glabrous, sometimes sparsely pubescent along veins, to densely dirty white-pubescent and scaly; adaxial surface yellowish green, glabrous or pubescent; veins conspicuously raised abaxially. Inflorescence subterminal, 2–4-flowered; bud scales white-pubescent and densely scaly outside. Pedicel 2–1 cm, densely pubescent and scaly; calyx shallowly cup-shaped, without conspicuous lobes, small; corolla tubular, narrowed at both ends, bright or orange red, 1.5–2.5 cm; outer surface glabrous, rarely pubescent at lobe base; lobes 5, erect, ovate; stamens 10, unequal, slightly exerted from corolla; filaments glabrous, anthers purplish black; ovary 5-locular, scaly, densely hairy; style exerted from corolla, usually glabrous, rarely pubescent at base. Capsule cylindrical, 10–14 mm, scaly, pubescent. Fl. Feb–Jun.

• *Keteleeria* and other coniferous forests, coniferous-*Quercus* mixed forests, valley thickets; 1900–2500 m. SW Sichuan, NE and W Yunnan.

1a. Leaves, pedicels, calyx and ovary pubescent ..... 193a. var. *spinuliferum*

1b. Leaves, pedicels, calyx, and ovary subglabrous or only sparsely pubescent along veins on abaxial leaf surface ..... 193b. var. *glabrescens*

**193a. *Rhododendron spinuliferum* var. *spinuliferum***

爆杖花(原变种) *bao zhang hua* (*yuan bian zhong*)

*Rhododendron fuchsiiiflorum* H. Léveillé [“*fuchsiaeiflorum*”].



Leaf blade, pedicel, calyx, and ovary pubescent.

• *Keteleeria* and other coniferous forests, coniferous-*Quercus* mixed forests, valley thickets; 1900–2500 m. SW Sichuan, W Yunnan.

**193b. *Rhododendron spinuliferum* var. *glabrescens*** K. M. Feng ex R. C. Fang, *Acta Bot. Yunnan.* 4: 257. 1982.

少花爆杖花 shao hua bao zhang hua

Leaf blade glabrous or sparsely pubescent only along veins. Pedicel, calyx, and ovary almost glabrous. Fl. Mar.

• NE Yunnan (Yiliang).

**194. *Rhododendron xduclouxii*** H. Léveillé, *Bull. Soc. Agric. Sarthe, sér. 2*, 31: 49. 1903, pro sp.

粉红爆杖花 fen hong bao zhang hua

Small shrubs, 0.3–1 m tall; young shoots densely gray-white-pubescent, mixed with spreading long hispid hairs. Leaf blade narrowly oblong or oblong-elliptic, 2.8–4 × 1–1.7 cm; abaxial surface pale green, sometimes gray-white-pubescent and yellowish brown-scaly along veins; adaxial surface deep green, sparsely hispid, sometimes pubescent; veins conspicuously raised abaxially. Calyx shallowly cup-shaped, without conspicuous lobes, densely scaly abaxially, pubescent; corolla tubular-campanulate, 5-lobed to below middle, base almost white, turning to peach or rosy red above, 1.4–1.8 cm, outer surface sparsely glandular scaly; lobes erect, slightly open, oblong; stamens not or only slightly exerted from corolla; filaments densely pubescent below, anthers purplish black; style exerted from corolla, longer than stamens; base densely pubescent. Fl. Feb–Apr.

• Valley forests, coniferous forest margins; ca. 2200 m. Yunnan.

This entity is a hybrid between *Rhododendron spiciferum* and *R. spinuliferum*.

**195. *Rhododendron pubescens*** I. B. Balfour & Forrest, *Notes Roy. Bot. Gard. Edinburgh* 12: 153. 1920.

柔毛杜鹃 rou mao du juan

Small multi-branched shrubs, ca. 1 m tall; old branches deep gray; young shoots short and slender, red or orange-red scaly, densely pubescent and hispid. Petiole ca. 3 mm, like stem, pubescent; leaf blade thickly leathery, narrowly lanceolate, oblanceolate, or lanceolate, ca. 2.2 × 0.6 cm; base cuneate; margin revolute; apex acute, apiculate; abaxial surface gray-green, scaly, densely white-pubescent and thinly hispid; adaxial surface deep green, sparsely scaly, densely white-pubescent and thinly hispid, midrib raised abaxially, concave adaxially. Inflorescence subterminal, umbellate, 3- or 4-flowered; bud scales leathery, rounded, apiculate, outside densely pubescent and densely scaly. Pedicel 0.6–0.8 cm, scaly, hispid and pubescent; calyx without conspicuous lobes, small, abaxially scaly and densely pubescent; corolla shortly tubular, with open lobes, 5-lobed to below middle, pale red, ca. 0.8 cm, outer surface scaly; stamens 8–10, unequal, long ones slightly exerted from corolla, filaments glabrous at base, pubescent above; ovary 5-loc-

ular, scaly, densely pubescent; style glabrous. Capsule cylindrical, ca. 6 mm, sparsely pubescent and scaly. Fl. May–Jun.

• Thickets; 2700–3500 m. SW Sichuan, Yunnan.

**196. *Rhododendron scabrifolium*** Franchet, *Bull. Soc. Bot. France* 33: 236. 1886.

糙叶杜鹃 cao ye du juan

Shrubs, 0.5–2 m tall; old branches deep gray, branches stout and straight; young shoots densely gray-white-pubescent and spreading-hispid. Petiole 3–6 mm, pubescent; leaf blade tough-papery, oblong, oblong-lanceolate, or elliptic, 3–9 × 1–2.5 cm; base broadly cuneate or rounded; margin not revolute; apex acute, or acuminate, apiculate; abaxial surface scales dense, brown, densely gray-white-hispid along veins; adaxial surface densely pubescent and sparsely long hispid; midrib and lateral veins raised abaxially, concave adaxially. Inflorescence subterminal, umbellate, 2- or 3-flowered; bud scales densely scaly. Pedicel 1–1.4 cm, yellow-scaly, densely pubescent mixed with long hispid hairs; calyx lobes 5, 4–6 mm, oblong-lanceolate, scaly, densely pubescent; corolla broadly funnelform, 5-lobed to below middle, white or pink, 1.5–2.3 cm, tube shorter than lobes; outer surface sparsely glandular-scaly; lobes spreading; stamens 10, unequal, long ones nearly as long as corolla; filaments pubescent below or glabrous; ovary 5-locular, scaly, densely gray-white hirsute; style exerted from corolla, base pubescent or nearly glabrous. Capsule cylindrical, 5–8 mm, scaly, pubescent. Fl. Feb–Apr.

• *Pinus yunnanensis* forests, mixed woods on slopes; 2000–2600 m. Sichuan, C and W Yunnan.

- 1a. Corolla 1.5–1.8 cm; leaf blade 3–7 cm ..... 196a. var. *scabrifolium*
- 1b. Corolla 1.6–2.3 cm; leaf blade to 9 cm ..... 196b. var. *pauciflorum*

**196a. *Rhododendron scabrifolium* var. *scabrifolium***

糙叶杜鹃(原变种) cao ye du juan (yuan bian zhong)

Leaf blade 3–7 cm. Corolla 1.5–1.8 cm.

• *Pinus yunnanensis* forests, mixed woods on slopes; 2000–2600 m. Sichuan, C and W Yunnan.

**196b. *Rhododendron scabrifolium* var. *pauciflorum*** Franchet, *J. Bot. (Morot)* 12: 262. 1898.

疏花糙叶杜鹃 shu hua cao ye du juan

Leaf blade to 9 cm. Corolla 1.6–2.3 cm.

• C Yunnan (Kunming).

**197. *Rhododendron spiciferum*** Franchet, *J. Bot. (Morot)* 9: 400. 1895.

碎米花 sui mi hua

Small multi-branched shrubs, 0.2–0.6(–2) m tall; old branches less hairy, shoots thin; young shoots densely gray-white-pubescent and spreading-hispid. Petiole 1–3 mm, pubescent; leaf blade toughly papery, narrowly oblong or oblong-lan-

ceolate, 1.2–4 × 0.4–1.2 cm; base cuneate or obtuse; margin revolute; apex rounded or acute, apiculate; abaxial surface yellowish green, densely yellow scaly, densely gray-white-pubescent, hairs longer along veins; adaxial surface deep green, densely pubescent and long-hispid; midrib raised abaxially, concave adaxially; lateral veins slightly concave or flat above and slightly raised below. Inflorescence subterminal, shortly racemose, 1–4-flowered; bud scales several, densely gray-white-villous and densely scaly. Pedicel 0.4–0.7 cm, sparsely or densely scaly, pubescent and sometimes sparsely long-hispid; calyx lobes 5, 0.5–2 mm, ovate or oblong-ovate, sparsely abaxially scaly, sparsely or densely gray-white-pubescent, margin ciliate; corolla funnelform, 5-lobed to below middle, pink or rarely white, 1.3–1.6 cm, tube longer than lobes; outer surface glandular-scaly; stamens 10, unequal, long ones nearly as long as corolla, filaments pubescent below; ovary 5-locular, densely gray-white-pubescent and scaly; style slender, exerted from corolla, pubescent below or glabrous. Capsule cylindric, 6–10 mm, scaly, pubescent. Fl. Feb–May.

• Coniferous forests, forest margins, thickets on slopes; 800–1900 m. W Guizhou, C and SE Yunnan.

1a. Corolla pink; inflorescence 3–4-flowered;

pedicel and calyx densely pubescent

..... 197a. var. *spiciferum*

1b. Corolla white; inflorescence 1–2-flowered;

pedicel and calyx less pubescent ..... 197b. var. *album*

**197a. *Rhododendron spiciferum* var. *spiciferum***

碎米花(原变种) sui mi hua (yuan bian zhong)

*Rhododendron scabrifolium* Franchet var. *spiciferum* (Franchet) Cullen.

Inflorescence 3- or 4-flowered. Pedicel and calyx densely pubescent; corolla pink.

• Coniferous forests, forest margins, thickets on slopes; 800–1200 m. W Guizhou, C and SE Yunnan.

**197b. *Rhododendron spiciferum* var. *album*** K. M. Feng ex R. C. Fang, Acta Bot. Yunnan. 4: 257. 1982.

白碎米花 bai sui mi hua

Inflorescence 1- or 2-flowered. Pedicel and calyx less pubescent; corolla white.

• Coniferous forests, forest margins, thickets on slopes; ca. 1900 m. C Yunnan (Kunming).

**2. *Rhododendron* sect. *Rhabdorhodium*** Sleumer, Bot. Jahrb. Syst. 74: 529. 1949.

帚枝杜鹃组 zhou zhi du juan zu

Small shrubs; young shoots scaly. Leaf blade with both surfaces scaly, without hairs. Inflorescence 1- or 2-flowered. Calyx 5-lobed; corolla funnelform or campanulate, light red, occasionally white; filaments pubescent or glabrous towards the base; ovary densely scaly; style densely scaly and often also pubescent towards base. Capsule sometimes globose, scaly. Seed wingless though with tail-like appendages at both ends.

One species: Bhutan, China, Sikkim.

**198. *Rhododendron virgatum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 26(A). 1851.

柳条杜鹃 liu tiao du juan

*Rhododendron oleifolium* Franchet; *R. virgatum* var. *glabriflorum* K. M. Feng ex R. C. Fang; *R. virgatum* subsp. *oleifolium* (Franchet) Cullen; *R. virgatum* var. *oleifolium* (Franchet) Demoly.

Small shrubs, (0.1–)1–2 m tall; branches in upper part, slender, brown, densely scaly. Petiole 3–4 mm, densely brown scaly; leaf blade leathery, narrowly oblong or oblong-lanceolate, 2–5.5 × 0.9–2 cm; base cuneate to rounded; margin revolute; apex obtuse or acute, apiculate; abaxial surface gray-green, scales less than or equal to their own diameter apart, dimorphic, rimless or, more commonly, with an obvious margin; adaxial surface densely scaly, rapidly glabrescent, lateral veins more conspicuous below, inconspicuous above. Inflorescences several, axillary, arranged in a compound raceme, 1- or 2-flowered,

bud scales persistent, imbricate, glabrous or slightly gray-white-pubescent. Pedicel 0.3–0.4 cm, densely scaly; calyx lobes 1–2 mm, oblong or semicircular, apex rounded, sparsely scaly; corolla funnelform to campanulate, lobed above the middle, light red, occasionally white, 1.5–2 cm, outer surface densely scaly, with gray hairs, rarely glabrous; lobes 5, spreading; stamens 10, unequal, long ones nearly equaling corolla, filaments pubescent or glabrous towards the base; ovary 5-locular, densely scaly; style exerted from corolla, basal half densely scaly, pubescent, sometimes glabrous. Capsule cylindric or globose, 7–12 mm, densely scaly. Fl. Mar–May.

Forest margins, among shrubs, wet grasslands; 1700–3000 m. SE Xizang, W Yunnan [Bhutan, Sikkim].

This species is difficult to subdivide into subspecies, as the characters that have been used to separate them in the past are very variable. These characters include the corolla length and the number of scales and amount of pubescence on the style bases and outer surface of the corolla. Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 130. 1980) maintained *Rhododendron virgatum* subsp. *oleifolium* as distinct.

**3. *Rhododendron* sect. *Rhodobotrys*** Sleumer, Bot. Jahrb. Syst. 74: 529. 1949.

腋花杜鹃组 ye hua du juan zu

Shrubs; young branches scaly. Leaf blade with abaxial surface densely scaly, without hairs. Inflorescence 2–5-flowered. Calyx 5-lobed or discoid, margin sometimes ciliate; corolla broadly funnelform, pink, purple, or purplish red, outside sparsely scaly or not,

sometimes pubescent; filaments pilose at base; ovary densely scaly; style glabrous. Capsule scaly only. Seed wingless.

- Two species: China.

Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 80. 1980) did not recognize *Rhododendron* sect. *Rhodobotrys*. He included it in the synonymy of *R.* subsect. *Scabrifolia* (Hutchinson) Cullen within *R.* sect. *Rhododendron*.

- 1a. Leaf blade oblong or oblong-elliptic, margin lacking ciliate hairs; corolla pink or light purple ..... 199. *R. racemosum*  
 1b. Leaf blade elliptic or narrowly elliptic, margin ciliate; corolla purple ..... 200. *R. fuyuanense*

**199. *Rhododendron racemosum*** Franchet, Bull. Soc. Bot. France 33: 235. 1886.

腋花杜鹃 ye hua du juan

*Rhododendron crenatum* H. Léveillé; *R. motsouense* H. Léveillé [“*motsouense*”].

Small, much-branched shrubs, 0.15–2 m tall; young branches short and slender, brown glandular scaly, otherwise glabrous or somewhat velutinous. Petiole short, 2–4 mm, scaly; leaf blade fragrant, oblong to elliptic, 1.5–4 × 0.8–1.8 cm; base cuneate or rounded; margin revolute; apex obtuse or acuminate, apiculate or not; abaxial surface usually gray-white, scales less than 1 × their own diameter apart, not contiguous, medium sized, brown; adaxial surface densely brown scaly. Inflorescence axillary or subterminal, 2- or 3-flowered; bud scales many, imbricate, persistent until flowering time. Pedicel slender, 0.5–1 cm, densely scaly; calyx discoid, slightly serrulate, minute, scaly; corolla widely funnelform, divided from below or at middle, pink or purple, 0.9–1.4 cm, outer surface sparsely scaly, lobes spreading; stamens 10, exerted, filaments pilose at base; ovary 5-locular, densely scaly; style longer than stamens, glabrous or shortly pilose at base. Capsule cylindrical, 5–10 mm, scaly. Fl. Mar–May.

- *Pinus* or *Quercus* forests, *Abies* forest margins, grasslands, usually dominant; 1500–3500(–3800) m. NW Guizhou, SW Sichuan, Yunnan.

*Rhododendron* × *fittianum* I. B. Balfour (Notes Roy. Bot. Gard.

Edinburgh 10: 108. 1917), described from Yunnan, was considered to be an obscure hybrid of *R. racemosum* by Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 113–114. 1980).

**200. *Rhododendron fuyuanense*** Z. H. Yang, Acta Phytotax. Sin. 35: 189. 1997.

富源杜鹃 fu yuan du juan

Shrubs, evergreen, 0.5–2.5 m tall; young branches with scattered black glandular scales. Petiole 2–4 mm, scaly; leaf blade elliptic or narrowly elliptic, 1.2–3.5 × 0.6–1.2 cm; base cuneate; margin strongly revolute, ciliate; apex acuminate, rarely obtuse, sometimes apiculate; abaxial surface gray-green, densely brown scaly; adaxial surface with scattered black scales, midrib conspicuous abaxially, impressed adaxially. Inflorescence axillary or terminal, 3–5-flowered; bud scales many, imbricate. Pedicel slender, 0.6–1.2 cm, densely scaly; calyx 5-lobed, lobes 1–1.5 mm, rounded, scaly, margin ciliate; corolla funnelform, divided to middle, purplish red, 1–1.5 cm, outer surface densely scaly, lobes 5, spreading, orbicular; stamens 10, exerted, filaments densely pilose at base; ovary 5-locular, densely scaly; style longer than stamens, glabrous. Capsule not known. Fl. Mar.

- About 2000 m. E Yunnan (Fuyuan).

This species differs from *Rhododendron racemosum* in having young branches with scattered, black, glandular scales; leaves elliptic to narrowly elliptic with strongly recurved, ciliate margin and acuminate apex; corolla purplish red; and calyx ciliate.

**4. *Rhododendron* subg. *Rhodorastrum*** (Maximowicz) C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 474. 1882.

迎红杜鹃亚属 ying hong du juan ya shu

Fang Ruizheng (方瑞征 Fang Rhui-cheng); David F. Chamberlain

*Rhododendron* sect. *Rhodorastrum* Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 16(9): 15, 43. 1870.

Small to medium shrubs, deciduous or semievergreen; new foliage shoots from axils of leaves below inflorescence buds; young shoots scaly. Leaf blade with abaxial surface scaly, scales 4 × their own diameter apart. Inflorescence axillary or subterminal, 1-flowered. Calyx poorly developed, 0.5–1 mm; corolla widely funnelform, light red to purple, seldom white, outer surface generally without scales, only rarely scaly, shortly pilose. Stamens 10; filaments pilose below; ovary 5-locular, densely scaly, otherwise glabrous; style slender, straight, glabrous. Capsule small, oblong. Seed wingless.

- Two species: China, Japan, Korea, Mongolia, Russia; two species in China.

Cullen (Notes Roy. Bot. Gard. Edinburgh 39: 111. 1980) treated *Rhododendron* subg. *Rhodorastrum* as *R.* subsect. *Rhodorastrum* (Maximowicz) Cullen within *R.* sect. *Rhododendron*.

- 1a. Semievergreen; leaf apex rounded, adaxial surface with scales overlapping to 1.5 × their own diameter apart; corolla 1.3–2.3 cm ..... 201. *R. dauricum*  
 1b. Deciduous; leaf apex acute, acuminate, rarely obtuse, adaxial surface with scales 2–4 × their own diameter apart; corolla 2.3–2.8 cm ..... 202. *R. mucronulatum*

**201. *Rhododendron dauricum*** Linnaeus, Sp. Pl. 1: 392. 1753. 兴安杜鹃 xing an du juan

Multi-branched shrubs, semievergreen, 0.5–2 m tall; young branches thin and curved, scaly, hairy. Petiole 2–6 mm, pubescent; leaf blade ± leathery, elliptic or oblong, 1–5 × 1–1.5 cm; base obtuse, sometimes broadly cuneate; margin entire or denticulate; apex obtuse; abaxial surface pale green, scales dense; adaxial surface deep green, sparsely scaly. Inflorescences 4, subapical, opening before leaves, pseudumbellate; bud scales falling off early or persistent. Pedicel 0.2–0.8 cm; calyx 5-lobed, less than 1 mm, densely scaly; corolla funnel-form, pink or purplish red, 1.3–2.3 cm, outer surface often pubescent; stamens 10, shorter than corolla tube; filaments pubescent below, anthers purplish red; ovary 5-locular, densely scaly; style purplish red, longer than corolla, glabrous. Capsule cylindrical, 10–15 × ca. 5 mm, apex 5-lobed. Fl. May–Jun, fr. Jul.

*Betula* or *Larix* forests, forest margins. Heilongjiang, Jilin, Nei Mongol [Japan, Korea, Mongolia, Russia].

**202. *Rhododendron mucronulatum*** Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 10(7): 155. 1837.

迎红杜鹃 ying hong du juan

*Rhododendron dauricum* Linnaeus subsp. *mucronulatum* (Turczaninow) Voroschilov; *R. dauricum* var. *mucronulatum* (Turczaninow) Maximowicz.

Deciduous multi-branched shrubs, 1–2 m tall; young branches thin and long, sparsely scaly. Petiole 3–5 mm; leaf blade thin, elliptic or elliptic-lanceolate, 3–7 × 1–3.5 cm; base cuneate or obtuse, entire or denticulate; apex acute, acuminate or obtuse; abaxial surface brown, scaly; adaxial surface sparsely scaly. Inflorescences solitary or to 3, subapical, opening before leaves, pseudumbellate, bud scales persistent. Pedicel 0.5–1 cm, sparsely scaly; calyx 5-lobed, 0.5–1 mm, scaly, glabrous or sparsely setose; corolla funnel-form, pale reddish purple, 2.3–2.8 × 3–4 cm, outer surface pubescent; stamens 10, unequal, slightly shorter than corolla tube; filaments pubescent below; ovary 5-locular, densely scaly; style longer than corolla, glabrous. Capsule cylindrical, 10–15 × 4–5 mm. Fl. Apr–Jun, fr. May–Jul.

*Betula* or *Larix* forests, forest margins. Hebei, Jiangsu, Liaoning, Nei Mongol, Shandong [Japan, Korea, Mongolia, Russia].

**5. *Rhododendron* subg. *Hymenanthes* (Blume) K. Koch, Dendrologie 2(1): 170. 1872 [“*Hymenanthus*”].**

常绿杜鹃亚属 chang lü du juan ya shu

*Hymenanthes* Blume, Bijdr. 862. 1826.

Shrubs or trees, rarely small creeping shrubs, evergreen; new leafy shoots from lateral buds, i.e., from axils of leaves of previous season; young shoots setose, glandular-hairy, or glabrous, not scaly. Leaves large; leaf blade leathery, narrowly elliptic to broadly lanceolate or suborbicular; abaxial surface glabrous or hairy, rarely glandular or waxy above, not scaly. Inflorescence terminal, umbellate-racemose, many-flowered, rarely 1- or 2-flowered. Calyx small, green or red, rim-like, rarely enlarged into a cup, 5(–8)-lobed; corolla campanulate or funnel-form, rarely ± tubular, lobes 5–8, pinkish red, white or red to purplish red, rarely yellow, sometimes with darker nectar pouches at base; stamens 10(–20), usually twice as many as corolla lobes, unequal; ovary 5–18-locular, glabrous, hairy, or glandular; style slender, long, glabrous or hairy or glandular at apex. Capsule cylindrical, straight to curved, glabrous or not, valves opening when mature. Seeds often with a thin membranous wing.

About 270 species: mostly in Asia, also in Europe and North America; 259 species (190 endemic) in China.

- 1a. Young branches and petioles generally setose or with stipitate to setose glands.
  - 2a. Corolla 7-lobed; stamens 14–16 ..... 2. *R.* subsect. *Auriculata*
  - 2b. Corolla 5–6-lobed; stamens 10–14.
    - 3a. Corolla tube densely hairy outside ..... 18. *R.* subsect. *Griersoniana*
    - 3b. Corolla tube glabrous outside.
      - 4a. Corolla campanulate or funnel-form, yellow or white to red or purplish red, without basal nectar pouches.
        - 5a. Leaf apex acute; abaxial surface stipitate-glandular, lanate or strigose ..... 9. *R.* subsect. *Glischra*
        - 5b. Leaf apex rounded; abaxial surface glabrous.
          - 6a. Corolla broadly campanulate, style with glands throughout ..... 5. *R.* subsect. *Williamsiana*
          - 6b. Corolla funnel-form, narrow; style glabrous ..... 8. *R.* subsect. *Selensia*
  - 4b. Corolla tubular, often deep red, with nectar pouches at base.
    - 7a. Peduncle to 4 cm; style glandular or stellate-hairy ..... 19. *R.* subsect. *Parishia*
    - 7b. Peduncle to 1 cm; style glabrous or glandular only at base.
      - 8a. Inflorescence 2–8(–12)-flowered; leaf apex acute or rounded ..... 21. *R.* subsect. *Neriiflora*
      - 8b. Inflorescence usually 7–20-flowered; leaf apex cuspidate.
        - 9a. Leaves lanceolate to elliptic; capsule curved ..... 10. *R.* subsect. *Irrorata*
        - 9b. Leaves ovate to elliptic; capsule straight.
          - 10a. Leaf apex cuspidate ..... 7. *R.* subsect. *Maculifera*
          - 10b. Leaf apex acute to rounded at apex ..... 20. *R.* subsect. *Barbata*
- 1b. Young branches glabrous, rarely pilose or with glands, without bristles, never setose.
  - 11a. Corolla campanulate or tubular-campanulate, with well-marked nectar pouches, 5-lobed; stamens 10.

- 12a. Corolla white or yellow to pinkish red.  
13a. Leaves elliptic to obovate, abaxial surface with persistent soft or stiff hairs along central veins ..... 7. *R.* subsect. *Maculifera*  
13b. Leaves elliptic to lanceolate, abaxial surface glabrous or with simple hairs ..... 10. *R.* subsect. *Irrorata*  
12b. Corolla deep red.  
14a. Corolla fleshy, without spots; ovary densely hairy.  
15a. Small shrubs, rarely creeping; inflorescence often 1–12-flowered ..... 21. *R.* subsect. *Neriiflora*  
15b. Small trees; inflorescence dense, often 20–25-flowered ..... 13. *R.* subsect. *Arborea*  
14b. Corolla thin or fleshy, with or without spots; ovary often glabrous.  
16a. Leaf blade orbicular to elliptic, abaxial surface glabrous or hairy; calyx 2–15 mm ..... 23. *R.* subsect. *Thomsonia*  
16b. Leaf blade elliptic, abaxial surface densely pilose or lanate; calyx 0.5–1 mm ..... 22. *R.* subsect. *Fulgensia*  
11b. Corolla (5–)6–10-lobed, with or without nectar pouches; stamens (10–)12–18.  
17a. Corolla (5–)7–8(–10)-lobed; leaves large, elliptic.  
18a. Abaxial surface of leaves conspicuously hairy when mature.  
19a. Abaxial surface of leaves generally with 2 layers of hairs, outer layer cupular ..... 4. *R.* subsect. *Falconera*  
19b. Abaxial surface of leaves with 1 or 2 layers of hairs, hairs never cupular.  
20a. Ovary pilose, rarely glandular, or if glabrous then with abaxial surface of leaves viscid-hairy ..... 3. *R.* subsect. *Grandia*  
20b. Ovary glabrous, rarely glandular or pilose, abaxial surface of leaves often pannose ..... 14. *R.* subsect. *Taliensia*  
18b. Abaxial surface of mature leaves glabrous or with a thin agglutinated indumentum.  
21a. Leaves (9–)20–70 cm; ovary densely tomentose, rarely glandular or glabrous ..... 3. *R.* subsect. *Grandia*  
21b. Leaves less than 20 cm; ovary glabrous or glandular.  
22a. Corolla broadly campanulate, without basal nectar pouches; ovary glabrous or glandular ..... 1. *R.* subsect. *Fortunea*  
22b. Corolla campanulate or tubular-campanulate, with basal nectar pouches; ovary glandular, with or without a thin indumentum ..... 10. *R.* subsect. *Irrorata*  
17b. Corolla 5-lobed; leaves small, ovate-elliptic or lanceolate.  
23a. Abaxial leaf surface glabrous; peduncle 5–60 mm.  
24a. Leaves ovate to orbicular; peduncle 2–5 mm ..... 6. *R.* subsect. *Campylocarpa*  
24b. Leaves lanceolate to elliptic; peduncle 5–25(–60) mm.  
25a. Peduncles 10–25 mm; corolla campanulate to funnellform ..... 11. *R.* subsect. *Pontica*  
25b. Peduncles 5–10 mm; corolla broadly campanulate ..... 10. *R.* subsect. *Irrorata*  
23b. Abaxial leaf surface hairy (rarely glabrous in subsect. *Taliensia*).  
26a. Leaf blade ovate to obovate, sometimes narrow; corolla funnellform or campanulate, generally with deeply colored spots.  
27a. Peduncle short; pedicels short; flowers densely arranged; calyx 0.5–1.5 mm ..... 14. *R.* subsect. *Taliensia*  
27b. Peduncle long; pedicels slender, long; flowers loosely arranged; calyx 1–3(–5) mm.  
28a. Abaxial surface of leaves with silvery white, pale yellow or yellowish-brown hairs; capsule cylindric, straight ..... 12. *R.* subsect. *Argyrophylla*  
28b. Abaxial surface of leaves with gray-white to rufous-brown hairs; capsule slender, curved ..... 15. *R.* subsect. *Fulva*  
26b. Leaf blade ovate to obovate or orbicular; corolla campanulate, broadly campanulate, rarely funnellform, with or without deeply colored spots.  
29a. Ovary glabrous; peduncles 10–25 mm; leaves ovate to broadly elliptic ..... 17. *R.* subsect. *Campanulata*  
29b. Ovary densely hairy; peduncles 2–20 mm.  
30a. Ovary densely pilose to stipitate-glandular; peduncle 10–20 mm ..... 7. *R.* subsect. *Maculifera*  
30b. Ovary pilose to thinly glandular; peduncle 3–10 mm.  
31a. Abaxial leaf surface with one layer of hairs; ovary densely pilose or tomentose and glandular; young shoots always tomentose; calyx 1–2 mm ..... 16. *R.* subsect. *Lanata*  
31b. Abaxial leaf surface with one or two layers of thin to dense hairs; ovary thinly or densely pilose and glandular; if young shoots tomentose then calyx often more than 2 mm ..... 14. *R.* subsect. *Taliensia*

1. *Rhododendron* subsect. *Fortunea* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 546.1949.

云锦杜鹃亚组 yun jin du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* ser. *Fortunea* Tagg in J. B. Stevenson, Sp. Rhodod. 257. 1930 [*“Fortunei”*].

Shrubs or trees; bark rough; young shoots with white to grayish tomentose indumentum, soon glabrescent. Leaf blade oblong-elliptic, elliptic, oblanceolate, ovate to suborbicular; abaxial surface floccose or not on midrib, rarely with a sparse white stellate indumentum (*R. asterochnoum*); adaxial surface glabrous when mature. Inflorescence lax, 5–30-flowered, rachis 3–70 mm; calyx mi-

nute to well-developed, 1–20 mm; corolla funnel-campanulate to open-campanulate, 5–7(–8)-lobed, white or pale pink to purple, nectar pouches usually absent (apparently present in *R. praeteritum*); stamens 10–16(–22); ovary glandular or glabrous; style glabrous or glandular-hairy to tip.

Thirty-one species: Bhutan, China, India, Myanmar, Nepal, Sikkim, Vietnam; 31 species (28 endemic) in China.

*Rhododendron magorianum* Millais (Rhododendrons, ser. 2, 182. 1924) was described from cultivated material derived from seed (*E. H. Wilson 1539*) collected in W China. Unknown in the wild, it is presumed to be a hybrid of a species in *R.* subsect. *Fortunea*.

*Rhododendron planetum* I. B. Balfour (Notes Roy. Bot. Gard. Edinburgh 12: 145. 1920) is probably a hybrid of a species in *R.* subsect. *Fortunea*. It was described from a plant raised from seed that was supposed to have been collected in Sichuan, but the collector's number cited is wrong. The provenance of this seed is therefore uncertain.

- 1a. Calyx 7–20 mm ..... 203. *R. griffithianum*
- 1b. Calyx 1–7(–10) mm.
  - 2a. Outer surface of corolla with dense long-stipitate glands.
    - 3a. Abaxial leaf surface sparsely floccose; blade oblong-obovate, 18.5–22.5 × 8–9.5 cm; petiole 3.5–4.2 cm; young shoots eglandular; corolla funnel-campanulate, ca. 6.5 cm, lobes 7 ..... 205. *R. xiaoxidongense*
    - 3b. Abaxial leaf surface glabrous.
      - 4a. Young shoots glabrous ..... 233. *R. serotinum*
      - 4b. Young shoots glandular hairy.
        - 5a. Leaf blade 22–25 × 7.5–8.8 cm; petiole 4–4.5 cm; corolla 9.5–10 cm, lobes 5 ..... 204. *R. magniflorum*
        - 5b. Leaf blade 10–19 × 3.2–4.5 cm; petiole 1.6–3 cm; corolla 5–6 cm; lobes 7 or 8 ..... 206. *R. glanduliferum*
  - 2b. Outer surface of corolla eglandular, or with sparse short stipitate glands.
    - 6a. Stigma 5–6.5 mm in diam., swollen, discoid.
      - 7a. Corolla broadly campanulate or campanulate.
        - 8a. Corolla broadly campanulate, lobes 5–7; stamens 15–22; leaves oblong-oblancheolate to oblong-lanceolate, abaxial surface glabrous or sparsely tomentose along midrib ..... 207. *R. calophytum*
        - 8b. Corolla campanulate, lobes 5; stamens 18–20; leaves oblanceolate, rarely oblong-elliptic, abaxial surface with stellate hairs when mature ..... 208. *R. asterochnoum*
      - 7b. Corolla obliquely campanulate, funnel-campanulate or widely funnel-campanulate.
        - 9a. Corolla obliquely or ventricose-campanulate, purple, lobes 5; leaf blade abaxially densely white-floccose, later glabrescent ..... 209. *R. jingangshanicum*
        - 9b. Corolla funnel-campanulate to tubular-campanulate, white to pale pink (not recorded for *R. miyiense* and *R. wolongense*), lobes 6–8; leaf blade abaxially glabrous.
          - 10a. Inflorescence 5–6-flowered; pedicel 1.8–2 cm.
            - 11a. Leaf blade 3–4.5 cm wide; pedicel glandular; corolla ca. 5 cm, outer surface glandular ..... 211. *R. wolongense*
            - 11b. Leaf blade 5.3–6.2 cm wide; pedicel glabrous; corolla 9.5–10.5 cm, outer surface glabrous ..... 213. *R. miyiense*
          - 10b. Inflorescence 8–12-flowered; pedicel 2.5–4 cm.
            - 12a. Filaments glabrous, 3.7–4.9 cm; leaf apex acute, apiculate; inflorescence rachis ca. 5 cm ..... 210. *R. faithiae*
            - 12b. Filaments puberulent at base, 2–3 cm; leaf apex obtuse, apiculate; inflorescence rachis 2–2.5 cm ..... 212. *R. decorum*
    - 6b. Stigma to 5 mm in diam., capitate or discoid.
      - 13a. Ovary and style glabrous.
        - 14a. Leaf blade (8–)10–22 cm, lobes 5; stamens (12–)15–16.
          - 15a. Leaf blade oblong-oblancheolate, abaxial surface with midrib grayish tomentose; corolla funnel-campanulate; pedicel white-puberulent ..... 214. *R. sutchuenense*
          - 15b. Leaf blade elliptic-oblancheolate, abaxial surface entirely glabrous; corolla campanulate, white tinged with rose; pedicel 1.5–3 cm, glabrous.
            - 16b. Corolla 5.8–6.2 cm ..... 215. *R. praevernum*
            - 16a. Corolla 3–4.5 cm ..... 216. *R. guihainianum*
        - 14b. Leaf blade 4.5–10 cm; lobes 5 or 7–8; stamens 10–14.
          - 17a. Leaf blade midrib glabrous abaxially; pedicel 0.5–1.5 cm; corolla with nectar pouches absent, lobes 5–8; stamens 12–14 ..... 217. *R. oreodoxa*
          - 17b. Leaf blade midrib with sparse loose hairs abaxially; pedicel 1.8–2 cm; corolla with 5 basal nectar pouches, lobes 5; stamens 10 ..... 218. *R. praeteritum*
      - 13b. Ovary densely glandular; style glabrous or glandular.
        - 18a. Ovary densely red- or rufous-glandular.
          - 19a. Filaments glabrous; leaf blade base rounded; inflorescence 3–5-flowered, rachis 2–2.5 cm ..... 219. *R. vernicosum*
          - 19b. Filaments pubescent at base; leaf blade base auriculate-cordate; inflorescence 6–10-flowered, rachis ca. 1 cm ..... 220. *R. nymphaeoides*

- 18b. Ovary densely white-glandular.
- 20a. Leaf blade base auriculate-cordate, rarely subcordate or rounded (*R. orbiculare* subsp. *cardiobasis*), 4–10.5 cm wide; petiole 2–7.5 cm.
- 21a. Corolla rose, 3.2–3.5 cm; inflorescence rachis 1.5–2.5 cm ..... 224. *R. orbiculare*
- 21b. Corolla white, ca. 6–6.5 cm; inflorescence rachis 3–7 cm.
- 22a. Petiole 5–7.5 cm; inflorescence rachis 5.5–7 cm ..... 221. *R. hemsleyanum*
- 22b. Petiole 2–3.5 cm; inflorescence rachis 2–3.5 cm ..... 233. *R. serotinum*
- 20b. Leaf blade base cuneate to rounded, rarely cordate and then blade less than 4.6 cm wide; petiole 1–2.5(–4) cm.
- 23a. Filaments puberulent near base.
- 24a. Petiole winged, up to 10 mm wide; style ca. 3.7 cm; pedicel not warty but glandular; calyx glabrous ..... 226. *R. platypodum*
- 24b. Petiole terete; style 1.6–1.8 cm; pedicel warty and glandular; calyx glandular ..... 227. *R. verruciferum*
- 23b. Filaments glabrous.
- 25a. Calyx 2–5(–10) mm; pedicel glabrous or sparsely glandular.
- 26a. Inflorescence 6–8(–10)-flowered; pedicel 2–2.5 cm; leaf apex obtuse; corolla pale pink to white ..... 229. *R. discolor*
- 26b. Inflorescence 10–13-flowered; pedicel 3.5–4.2 cm; leaf apex acute or cuspidate; corolla red to purple or lilac (see also 232. *R. liboense*) ..... 231. *R. huanum*
- 25b. Calyx to 2 mm, sometimes discoid; pedicel stipitate-glandular.
- 27a. Corolla white, 6–6.5 cm; leaf blade with 19–21 lateral veins each side of midrib ..... 225. *R. maoerense*
- 27b. Corolla white flushed pink with yellow flecks or pink to rose-purple, 3.5–6 cm; leaf blade with 14–18 lateral veins each side of midrib.
- 28a. Leaf blade 4.5–6.6 cm; inflorescence ca. 15-flowered; corolla white flushed pink, with yellow flecks, 3.2–3.5 cm ..... 228. *R. gonggashanense*
- 28b. Leaf blade 8–16 cm; inflorescence 6–12-flowered; corolla pink to rose-purple, sometimes with dark purple flecks, 3.5–6 cm.
- 29a. Leaf blade base rounded or truncate, rarely cordulate; apex obtuse to rounded, rarely acute; style ca. 3 cm ..... 222. *R. fortunei*
- 29b. Leaf blade base cuneate; apex acute to acuminate; style 4–4.5 cm.
- 30a. Inflorescence rachis 3–6 cm, glandular and tomentose; pedicel ca. 1 cm ..... 230. *R. davidii*
- 30b. Inflorescence rachis 2–2.5 cm, glabrous; pedicel 2.7–3.4 cm; corolla 3.5–4.5 cm ... 223. *R. jinchangense*

**203. *Rhododendron griffithianum*** Wight, Icon. Pl. Ind. Orient. 4: 6, t. 1203. 1848.

不丹杜鹃 bu dan du juan

*Rhododendron aucklandii* J. D. Hooker; *R. griffithianum* var. *aucklandii* (J. D. Hooker) Hooker; *R. oblongum* Griffith.

Shrubs or small trees, evergreen, 1.3–4(–10) m tall; shoots ca. 4 mm in diam. below inflorescence; young shoots stout, glabrous. Petiole stout, 20–35 mm, glabrous; leaf blade leathery, oblong to oblong-elliptic or oblong-ovate, 10–19(–30) × 4.5–12 cm; base rounded or subcordate; apex acute to rounded and apiculate; abaxial surface glabrous; adaxial surface green, smooth; midrib prominent abaxially, grooved adaxially; lateral veins 19–24-paired, distinct on both surfaces. Inflorescence umbellate, 4- or 5-flowered; rachis 50–70 mm. Pedicel glabrous, 3.5–4 cm; calyx cupular, 7–20 mm, glabrous or sparsely glandular-hairy; corolla campanulate, pink at first, later white, 5.5–8 cm, glabrous; lobes 5, suborbicular, ca. 2 × 3.5 cm, emarginate; stamens 12–18, filaments glabrous; ovary ovoid, ca. 7 mm, glandular; style glandular to tip; stigma swollen. Capsule cylindrical, ca. 35 × 15 mm.

Broad-leaved forests, *Rhododendron* thickets; 2100–2800 m. S Xizang [Bhutan, N India, E Nepal, Sikkim].

**204. *Rhododendron magniflorum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 51. 1988.

贵州大花杜鹃 gui zhou da hua du juan

Small trees, 4–6 m tall; shoots ca. 7 mm in diam. below inflorescence; young shoots densely pale brown glandular-hairy, glabrescent. Petiole 40–45 mm, densely glandular-hairy at first, glabrescent; leaf blade leathery, oblong, 22–25 × 7.5–8.8 cm; base broadly cuneate or rounded, unequal; apex obtuse; both surfaces glabrous; abaxial surface pale green; adaxial surface green, midrib raised abaxially, grooved adaxially, lateral veins 17–21-paired, impressed adaxially. Inflorescence 9–12-flowered; rachis ca. 45 mm, densely glandular-hairy. Pedicel 2.5–4.8 cm, with similar hairs; calyx cupular; lobes 5, ca. 4 mm, glandular; corolla tubular-funnelform, color unknown, 9.5–10 cm, outer surface with brownish glandular hairs, glabrous inside; lobes 5, ovate, ca. 2 × 1.6 cm; stamens 16, 3.6–6.1 cm, filaments glabrous; ovary conical, ca. 8 × 7 mm, densely glandular-hairy; style 7–8 cm, lower half with glandular hairs. Capsule cylindrical, slightly curved, 35–42 × 11–13 mm, with persistent glandular hairs. Fl. Jul, fr. Oct.

• Forests, hill summits; 1700–1800 m. SW Guizhou.

**205. *Rhododendron xiaoxidongense*** W. K. Hu, J. Sichuan Univ., Nat. Sci. Ed. 27: 492. 1990.

小溪洞杜鹃 xiao xi dong du juan

Shrubs, ca. 1 m tall; branchlets ca. 1 cm in diam. below inflorescence. Petiole cylindrical, 3.5–4.2 mm, densely glandular-

hairy; leaf blade leathery, oblong-obovate, 18.5–22.5 × 8–9.5 cm; base rounded or oblique; apex rounded, apiculate; abaxial surface with midrib sparsely floccose-puberulent; adaxial surface green; midrib raised abaxially, grooved adaxially; lateral veins 15–18-paired. Inflorescence racemose, 8–9-flowered; rachis ca. 50 mm, glabrous. Pedicel stout, 1.1–1.9 cm, densely shortly glandular-hairy; calyx cupular; lobes 5, ca. 5 mm, with similar glands; margin ciliate; corolla funnel-campanulate, white, ca. 6.5 cm, lobes 7, ovate, ca. 2.2 × 1.5 cm, emarginate; stamens 15, unequal, 3.1–4.7 cm, filaments glabrous; ovary ovoid, ca. 6 × 4 mm, densely shortly glandular-hairy; style ca. 3.2 cm, lower part with glandular hairs. Capsule not known. Fl. Apr–May.

- Forests, roadsides; 800–900 m. W Jiangxi.

**206. *Rhododendron glanduliferum*** Franchet, Bull. Soc. Bot. France 33: 231. 1886.

大果杜鹃 da guo du juan

Shrubs evergreen, to 4 m tall; shoots ca. 5 mm in diam. below inflorescence; young shoots glandular-setose. Petiole cylindrical, 16–30 mm, densely shortly glandular-hairy when young; leaf blade leathery, oblong-lanceolate to oblanceolate, 10–19 × 3.8–4.5 cm; base cuneate; margin revolute; apex acuminate; both surfaces glabrous; abaxial surface pale green; adaxial surface green, midrib prominent abaxially, grooved adaxially; lateral veins 20–22-paired. Inflorescence umbellate, lax, 5- or 6-flowered, rachis ca. 20 mm, densely shortly glandular-hairy. Pedicel ca. 2.5 cm, glandular-hairy; calyx ca. 3 mm, glandular; corolla funnel-campanulate, white, 5–6 cm, glandular-hairy outside; lobes 7 or 8, broadly rounded, ca. 1.5 × 2 cm, emarginate; stamens 14–16, unequal, 3–4.5 cm, filaments glabrous; ovary conoid, densely glandular-hairy; style glandular. Capsule cylindrical, 20–30 mm. Fr. Oct–Nov.

- Forests, hill summits; 2300–2400 m. NE Yunnan.

**207. *Rhododendron calophytum*** Franchet, Bull. Soc. Bot. France 33: 230. 1886.

美容杜鹃 mei rong du juan

Shrubs or trees, 2–12 m tall; bark grayish, falling off in flakes; young shoots stout, green, white-tomentose, glabrescent. Petiole 20–25 mm, glabrous; leaf blade leathery, oblong-oblanceolate to oblong-lanceolate, 11–30 × 4–7.8 cm; base cuneate; apex acute to acuminate; abaxial surface pale green, glabrous or sparsely tomentose; adaxial surface bright green, glabrous; midrib grooved adaxially, lateral veins 18–22-paired and impressed. Inflorescence racemose-umbellate, 15–30-flowered; rachis 15–20 mm, hairy. Pedicel stout, red, 2–6.5 cm, glabrous; calyx lobes 5, ca. 1.5 mm, glabrous; corolla widely campanulate, pinkish to white, with purple flecks and a basal blotch, or purple, 4–5 cm, lobes 5–7, deeply emarginate; stamens 15–22, unequal, 1.5–2.6 cm, filaments glabrous or puberulent at base; ovary ovoid, ca. 6 mm, glabrous; style ca. 3 cm, glabrous; stigma swollen, discoid, 5–6 mm in diam. Capsule obliquely ovoid, 20–45 mm; style persistent. Fl. Apr–May, fr. Sep–Oct.

- Forests; 1400–4000 m. Chongqing, SE Gansu, C and N Guizhou, W Hubei, S Shaanxi, Sichuan, NE Yunnan.

- 1a. Leaf blade 18–30 cm; pedicels 3–6.5 cm; corolla open-campanulate, 5–7-lobed.
- 2a. Rachis 15–20 mm; inflorescence 15–30-flowered; corolla widely campanulate, 5–7-lobed ..... 207a. var. *calophytum*
- 2b. Rachis ca. 10 mm; inflorescence 3–7-flowered; corolla campanulate, 5-lobed ..... 207b. var. *pauciflorum*
- 1b. Leaf blade 10–15 cm; corolla campanulate or oblique-campanulate, 5-lobed.
- 3a. Pedicel 3–4.5 cm; leaf blade 2–3.5 cm wide; pedicel 3–4.5 cm; corolla obliquely campanulate, white ..... 207c. var. *openshawianum*
- 3b. Pedicel 2–2.5 cm; leaf blade 3–4 cm wide; pedicel 2–2.5 cm; corolla campanulate, purple ..... 207d. var. *jinfuense*

**207a. *Rhododendron calophytum* var. *calophytum***

美容杜鹃(原变种) mei rong du juan (yuan bian zhong)

Leaf blade oblong-oblanceolate or oblong-lanceolate, 11–30 × 4–7.5 cm; apex acuminate. Inflorescence 15–30-flowered, rachis 15–20 mm. Pedicel 3–6.5 cm; corolla widely campanulate, lobes 5–7. Fl. Apr–May, fr. Sep–Oct.

- Forests; 1800–4000 m. SE Gansu, C and N Guizhou, W Hubei, S Shaanxi, Sichuan, NE Yunnan.

**207b. *Rhododendron calophytum* var. *pauciflorum*** W. K. Hu, Acta Phytotax. Sin. 26: 304. 1988.

疏花美容杜鹃 shu hua mei rong du juan

Leaf blade broadly oblanceolate to oblong; apex acuminate. Inflorescence 3–7-flowered; rachis ca. 10 mm. Corolla campanulate, lobes 5.

- Forests; 1800–2100 m. Chongqing (Nanchuan).

**207c. *Rhododendron calophytum* var. *openshawianum*** (Rehder & E. H. Wilson) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 330. 1979.

尖叶美容杜鹃 jian ye mei rong du juan

*Rhododendron openshawianum* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 543. 1913.

Leaf blade 10–15 × 2–3.5 cm; apex acuminate, cuspidate. Inflorescence 6–12-flowered. Corolla widely campanulate, lobes 5.

- Forests; 1400–2800 m. SW Sichuan, NE Yunnan.

**207d. *Rhododendron calophytum* var. *jinfuense*** Fang & W. K. Hu, Bull. Bot. Res., Harbin 8(3): 56. 1988.

金佛山美容杜鹃 jin fo shan mei rong du juan

*Rhododendron calophytum* subsp. *jinfuense* Fang ex M. Y. Fang.

Leaf blade 10–14 × 3–4 cm. Pedicel 2–2.5 cm; corolla purple, small, lobes 5.

- Deciduous broad-leaved forests; 2200–2300 m. Chongqing (Nanchuan).



Fang (Acta Phytotax. Sin. 26: 68. 1988) published this taxon independently, based on the same type and with the same validating diagnosis, but at the rank of subspecies.

**208. *Rhododendron asterochnoum*** Diels, Repert. Spec. Nov. Regni Veg. 17: 196. 1921.

汶川星毛杜鹃 wen chuan xing mao du juan

Small trees, 3–7(–15) m tall; bark gray; older branches brownish, glabrous; young shoots densely tomentose. Petiole winged, 15–30 mm, tomentose when young; leaf blade leathery, broadly oblanceolate, rarely oblong-elliptic, 17–26 × 3–9 cm; base cuneate; apex obtuse or rounded, apiculate; abaxial surface pale green, indumentum discontinuous, sparse and whitish, hairs stellate; adaxial surface green, glabrous, midrib grooved adaxially, lateral veins 19–23-paired. Inflorescence 11–18-flowered; rachis ca. 17 mm, with whitish stellate hairs. Pedicel 3–6 cm, glabrescent; calyx teeth 4 or 5, 1.5–2 mm, unequal; corolla campanulate, pale pink to white, 3–5 cm, lobes 5, ca. 1.8 × 2.5 cm, emarginate; stamens, 18–20, 1.2–2.6 cm, filaments pubescent at base; ovary conoid, 5–6 mm, glabrous; style ca. 3 cm, glabrous; stigma swollen, discoid, 5–5.5 mm in diam. Capsule oblique, 15–30 × 9–11 mm. Fl. May, fr. Jul–Aug.

- Forests, valleys, roadsides; 2200–3600 m. W Sichuan.

- 1a. Pedicel 3–6 cm; corolla 4–5 cm  
..... 208a. var. *asterochnoum*
- 1b. Pedicel 1.3–2 cm; corolla 3–3.5  
cm ..... 208b. var. *brevipedicellatum*

**208a. *Rhododendron asterochnoum* var. *asterochnoum***

汶川星毛杜鹃(原变种) wen chuan xing mao du juan (yuan bian zhong)

Leaf blade 3–9 cm wide. Pedicel 3–6 cm; corolla 4–5 cm.

- Forests; 2400–3600 m. W Sichuan.

**208b. *Rhododendron asterochnoum* var. *brevipedicellatum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 57. 1988.

短梗星毛杜鹃 duan geng xing mao du juan

Leaf blade 3–4.5 cm wide. Pedicel 1.3–2 cm; corolla 3–3.5 cm.

- Forests, valleys, roadsides; ca. 2200 m. NW Sichuan.

Perhaps var. *brevipedicellatum* is not worthy of recognition. Measurements from the type specimens of the two varieties indicate that the differences between them, while still diagnostic, are not as large as were quoted in FRPS (57(2): 13. 1994).

**209. *Rhododendron jingangshanicum*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 89. 1982.

井冈山杜鹃 jing gang shan du juan

Shrubs 2–4(–5) m tall; branches stout. Petiole 15–20 mm, floccose at first, glabrescent; leaf blade leathery, oblong or oblong-lanceolate, broadest above the middle, 18–33 × 6–8 cm; base cuneate; margin undulate; apex acute; abaxial surface white-floccose, glabrescent; adaxial surface bright green; midrib prominent abaxially, grooved adaxially; lateral veins 18–24-

paired. Inflorescence racemose-umbellate, 7- or 8-flowered; rachis ca. 15 mm, glabrescent. Pedicel 2.5–3 cm; calyx discoid, lobes 5, ca. 8 mm, oblique, ca. 2 mm; corolla obliquely campanulate, ventricose, purple, 6–7 cm, lobes 5, emarginate; stamens 16, unequal, 2.8–3.6 cm, filaments pubescent at base; ovary ovoid, glabrous; style ca. 4.5 cm, puberulent; stigma swollen, discoid, ca. 6 mm in diam. Capsule curved, ca. 25 mm. Fl. Sep.

- Forests, valleys; 1100–1200 m. W Jiangxi (Jinggang Shan).

**210. *Rhododendron faithiae*** Chun, Sunyatsenia 2: 78. 1934 [*“faithae”*].

大云锦杜鹃 da yun jin du juan

Shrubs or small trees, 4–12 m tall, bark brown, exfoliating into thin and small irregular flakes; young shoots stout, glabrous. Petiole stout, 15–34 mm, glabrous; leaf blade thickly leathery, oblong-elliptic to oblong, 11–24 × 4.4–9 cm; base obtuse to rounded; apex acute, apiculate; both surfaces glabrous; abaxial surface glaucous; adaxial surface green; midrib prominent abaxially, 3–4 mm wide near base, grooved adaxially, lateral veins 15–22-paired. Inflorescence 8–12-flowered, rachis ca. 50 mm, sparsely glandular. Pedicel 2.5–3 cm, densely glandular; calyx discoid, small, glandular; corolla widely funnel-campanulate, white, 8–8.5 cm, glandular-hairy near base, glabrous inside; lobes 7, obovate, ca. 3 × 3.3 cm; stamens 14, unequal, 3.7–4.9 cm, filaments glabrous; ovary conical, ca. 9 mm, densely brown glandular-hairy; style ca. 5.2 cm, glandular; stigma discoid, ca. 5 mm in diam. Capsule cylindric, 25–35 mm. Fl. Jul–Aug, fr. Nov.

- Forests; 1000–1400 m. SW Guangdong, E Guangxi.

**211. *Rhododendron wolongense*** W. K. Hu, Acta Phytotax. Sin. 26: 303. 1988.

卧龙杜鹃 wo long du juan

Small trees, 4–6 m tall. Petiole 15–20 mm, glabrous; leaf blade leathery, narrowly oblong, rarely oblong-oblanceolate, 14–17.5 × 3–4.5 cm; base rounded or subcordate, unequal; margin revolute; apex obtuse; abaxial surface glaucous; adaxial surface green, glabrous, midrib raised abaxially, grooved adaxially, lateral veins 21–25-paired, flat. Inflorescence shortly racemose-umbellate, 5- or 6-flowered; rachis ca. 20 mm. Pedicel 1.8–2 cm, glandular; calyx lobes 5 or 6, 1–2 mm, sparsely glandular outside; corolla funnel-campanulate, 9.5–10.5 cm, sparsely glandular near base, inside white-pubescent; lobes 7, widely ovate, ca. 3 × 2.5 cm, emarginate; stamens 15, unequal, 5.7–7.5 cm, filaments white-pubescent in lower half; ovary conoid, ca. 7.3 × 4 mm, densely pink glandular-hairy; style ca. 8.8 cm, with similar glands throughout; stigma swollen, discoid ca. 5 mm in diam. Capsule not known. Fl. Jul.

- Broad-leaved forests; ca. 1700 m. W Sichuan.

**212. *Rhododendron decorum*** Franchet, Bull. Soc. Bot. France 33: 230. 1886.

大白杜鹃 da bai du juan

Shrubs or small trees, 1–6 m tall; young shoots greenish,

glabrous. Petiole 12–40 mm, glabrous; leaf blade thickly leathery, oblong, oblong-ovate or oblong-elliptic, 5–19(–30) × 3–11 cm; base cordate or cuneate to nearly rounded; apex obtuse, rounded, apiculate; both surfaces glabrous when mature; abaxial surface pale green; adaxial surface deep green, midrib prominent abaxially, grooved adaxially; lateral veins 18-paired. Inflorescence 8–10-flowered; rachis 20–25 mm, sparsely glandular. Pedicel stout, 2.5–4 cm, glandular-hairy; calyx lobes 5, 1.5–2.5 mm, glandular-hairy; corolla funnel-campanulate, fragrant, white to pale pink, 3–10 × 5–9 cm, outer surface sparsely glandular, inner surface puberulent at base; lobes 6–8, suborbicular, ca. 2 × 2.4 cm, emarginate or entire; stamens 13–16, unequal, 2–3 cm, filaments pubescent at base; ovary cylindrical, ca. 6 mm, densely glandular-hairy; style 3.4–4 cm, with similar glands to tip; stigma 2–5(–6.5) mm in diam. Capsule oblong, usually slightly curved, 25–40 × 10–15 mm. Fl. Apr–Jun, fr. Sep–Oct.

Forests, thickets; 1000–3300 m. W Guizhou, SW Sichuan, SE Xizang, Yunnan [Myanmar].

- 1a. Leaf blade base cordate; petiole 1.2–1.4 cm ..... 212d. subsp. *cordatum*
- 1b. Leaf blade base obtuse or rounded; petiole 1.5–4 cm.
  - 2a. Stigma small, ca. 2 mm in diam.; corolla lobes 7, entire ..... 212c. subsp. *parvistigmatis*
  - 2b. Stigma swollen, 3–5(–6.5) mm in diam.; corolla lobes 6–8, emarginate.
    - 3a. Petiole 1.7–2.3 cm; leaf blade oblong to oblong-obovate, 5–14.5 × 3–5.7 cm; corolla 3–5 cm ..... 212a. subsp. *decorum*
    - 3b. Petiole 2.4–4 cm; leaf blade oblong-elliptic to oblong-obovate, 12–19(–30) × 4.4–11 cm; corolla (6.5–)8–11 cm ..... 212b. subsp. *diaprepes*

**212a. *Rhododendron decorum* subsp. *decorum***

大白杜鹃(原亚种) da bai du juan (yuan ya zhong)

*Rhododendron albicaule* H. Léveillé; *R. franchetianum* H. Léveillé; *R. giraudiasii* H. Léveillé; *R. spooneri* Hemsley & E. H. Wilson.

Petiole 17–23 mm; leaf blade oblong to oblong-obovate, 5–14.5 × 3–5.7 cm; base rounded. Corolla 3–5 × 5–7 cm, lobes 6–8, emarginate; stigma 3–5(–6.5) mm in diam. Fl. Apr–Jun, fr. Sep–Oct.

Forests, thickets; 1000–3300 m. W Guizhou, SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**212b. *Rhododendron decorum* subsp. *diaprepes*** (I. B. Balfour & W. W. Smith) T. L. Ming, Acta Bot. Yunnan. 6: 147. 1984.

高尚大白杜鹃 gao shang da bai du juan

*Rhododendron diaprepes* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 100. 1917; *R. rasile* I. B. Balfour & W. W. Smith.

Petiole 24–40 mm; leaf blade oblong to oblong-obovate, 12–19(–30) × 4.4–11 cm; base rounded. Corolla (6.5–)8–10 × ca. 9 cm, lobes 6–8, emarginate; stigma 3–5(–6.5) mm in diam.

Evergreen forests, mixed forests; 1700–3300 m. SW Sichuan, W Yunnan [Myanmar].

**212c. *Rhododendron decorum* subsp. *parvistigmatis*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 57. 1988.

小柱大白杜鹃 xiao zhu da bai du juan

Petiole more than 15 mm; leaf blade base rounded; apex acute or apiculate. Corolla lobes 7, entire; stigma ca. 2 mm in diam.

• Forests; ca. 2100 m. SW Sichuan.

**212d. *Rhododendron decorum* subsp. *cordatum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 58. 1988.

心叶大白杜鹃 xin ye da bai du juan

Petiole 12–14 mm; leaf blade base cordate.

• Yunnan.

Geng et al. (Acta Phytotax. Sin. 41: 493. 2003) considered that subsp. *cordatum* should be treated as a synonym of subsp. *decorum*.

**213. *Rhododendron miyiense*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 52. 1988.

米易杜鹃 mi yi du juan

Shrubs; branches usually stout, ca. 8 mm in diam., glabrous. Petiole stout, 20–22 mm, glabrous; leaf blade leathery, oblong-obovate, 13.8–17 × 5.3–6.2 cm; base widely cuneate to rounded, unequal; apex obtuse, apiculate; both surfaces glabrous; abaxial surface pale green; adaxial surface green, midrib prominent abaxially, grooved adaxially; lateral veins 17–19-paired. Inflorescence racemose-umbellate, 5- or 6-flowered; rachis ca. 13 mm, glabrescent. Pedicel ca. 2 cm, glabrous; calyx discoid; lobes 5, ca. 3 mm, puberulent outside; corolla tubular-campanulate, ca. 5 cm, white-pubescent inside; lobes 6 or 7, ovate, 1.5–1.8 × 1.5–2 cm; stamens ca. 17, unequal, 2.5–3.5 cm, filaments pubescent at base; ovary ovoid, ca. 8 × 6 mm; style ca. 3.3 cm, both densely brown glandular; stigma swollen, discoid, ca. 5 mm in diam. Capsule not known. Fl. May.

• Forests; ca. 1700 m. SW Sichuan.

The plate accompanying the original description of *Rhododendron miyiense* illustrates the corollas as being funnellform-campanulate, not tubular-campanulate.

**214. *Rhododendron sutchuenense*** Franchet, J. Bot. (Morot) 9: 392. 1895.

四川杜鹃 si chuan du juan

Shrubs or small trees, 1–8 m tall; young shoots usually ca. 8 mm in diam. below inflorescence, green, thinly tomentose. Petiole 20–30 mm, floccose when young, glabrescent; leaf blade leathery, oblong-lanceolate, 10–22 × 3–7 cm; base cuneate; apex obtuse or rounded; abaxial surface pale, persistently whitish floccose along midrib, otherwise glabrous; adaxial surface deep green, glabrous when mature; midrib prominent abaxially, grooved adaxially; lateral veins 17–22-paired. Inflorescence 8–10-flowered; rachis 10–15 mm, glabrous. Pedicel stout, 1–1.3 cm, white-pubescent; calyx lobes 5, ca. 2.2 mm, glabrous; corolla funnel-campanulate, rose, with deep rose flecks, ca. 5

cm, densely puberulent within; lobes 5(or 6), ca. 1.8 cm, emarginate; stamens 15–16, 2.5–3.5 cm, filaments pubescent at base; ovary conoid, ca. 7 mm, glabrous; style glabrous; stigma discoid, pink, ca. 3 mm in diam. Capsule oblong slightly curved, 18–36 mm. Fl. Apr–May, fr. Aug–Oct.

• Forests; 1600–2300 m. Chongqing, Gansu, Guangxi, Guizhou, NW Hubei, NW Hunan, S Shaanxi.

**215. *Rhododendron praevenum*** Hutchinson, Gard. Chron., ser. 3, 67: 127. 1920.

早春杜鹃 zao chun du juan

Shrubs or trees, 2–7 m tall; shoots 5–6 mm in diam. below inflorescence; young shoots gray pubescent, glabrescent. Petiole stout, 15–25 mm, pubescent when young; leaf blade leathery, elliptic-lanceolate, (9–)10–19.5 × (2–)3.3–5 cm; base cuneate; margin revolute; apex obtuse or acute; both surfaces glabrous; abaxial surface pale green; adaxial surface dark green; midrib prominent abaxially, grooved adaxially; lateral veins 14–20-paired. Inflorescence 7–10-flowered; rachis ca. 13 mm, pubescent. Pedicel 1.5–3 cm, glabrous; calyx lobes 5, 1.5–2 mm, glabrous; corolla campanulate, white to rose, with purple flecks and a blotch at base, 5.8–6.2 cm, outer surface glabrous, puberulent within towards base; stamens 15–16, unequal, 2.4–4.5 cm, filaments puberulent below; ovary conoid, ca. 8 mm, glabrous; style 4.4–4.6 cm, glabrous. Capsule cylindrical, 25–30 mm. Fl. Mar–Apr, fr. Sep–Oct.

• Forests; 1500–2500 m. Guizhou, W Hubei, Shaanxi, Sichuan, NE Yunnan.

**216. *Rhododendron guihainianum*** G. Z. Li, Guihaia 15: 299. 1995.

桂海杜鹃 gui hai du juan

Trees, 7–8 m tall; young shoots ca. 4 mm in diam., tomentose, glabrescent. Petiole stout, 1–2.5 cm, glabrous; leaf blade leathery, oblong-elliptic to oblanceolate-elliptic, 8–12(–16) × 3–4.5(–5.5) cm; base broadly cuneate; apex acute, mucronate; abaxial surface green, glabrous; adaxial surface pale green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 13–16-paired. Inflorescence 5–8-flowered; rachis 10–20 mm, glabrous. Pedicel 1–2 cm, glabrous; calyx minute, discoid, 5-lobed, glabrous; corolla broadly campanulate, white to rose, with purple flecks and a blotch at base, 3–4.5 cm, outer surface glabrous; inner surface puberulent towards base; stamens 12–16, 1.5–3 cm, filaments puberulent below; ovary conoid, ca. 5 mm, glabrous; style ca. 2.5 cm, glabrous, stigma capitate, ca. 3 mm in diam. Capsule not known. Fl. Apr–May.

• Forests; 1100–1400 m. Guangxi.

The present authors have seen no material of this species. Like *Rhododendron praevenum*, it has a purple blotch at the base of the inner surface of the corolla. However, it differs from that species in having flowers and leaves generally smaller and fewer flowers per inflorescence.

**217. *Rhododendron oreodoxa*** Franchet, Bull. Soc. Bot. France 33: 230. 1886.

山光杜鹃 shan guang du juan

Shrubs or small trees, 1–8(–12) m tall; shoots ca. 4 mm in

diam. below inflorescence; young shoots gray-tomentose, glabrescent. Petiole 10–25 mm, glandular when young; leaf blade leathery, elliptic or obovate-elliptic, 4.5–10 × 2–3.5 cm; base rounded; apex obtuse or rounded, apiculate; both surfaces glabrous; abaxial surface pale green; adaxial surface dark green; midrib grooved adaxially; lateral veins 13–15-paired. Inflorescence 6–8(–12)-flowered; rachis ca. 5 mm, glandular and tomentose. Pedicel purple, 0.5–1.5 cm, sparsely glandular-hairy or sparsely wispy brown-tomentose; calyx lobes 6 or 7, 1–3 mm, glandular outside; corolla campanulate, pale pink, 3.5–4.5 cm, lobes 5–8, orbicular, ca. 1 cm; stamens 12–14, filaments glabrous or pubescent; ovary conoid, 5–8 mm, glabrous or glandular-hairy; style 2.8–3.4 cm, glabrous or densely glandular-hairy, stigma small. Capsule cylindrical, slightly curved, 18–32 mm. Fl. Apr–Jun, fr. Aug–Oct.

• Forests, thickets; 1800–3900 m. S Gansu, W Hubei, S Shaanxi, Sichuan, E Xizang.

- 1a. Ovary glabrous; corolla 7- or 8-lobed ..... 217a. var. *oreodoxa*
- 1b. Ovary densely glandular; corolla 5–7-lobed.
  - 2a. Pedicel sparsely wispy brown-tomentose; corolla 5-lobed ..... 217b. var. *shensiense*
  - 2b. Pedicel with glands only; corolla 6- or 7-lobed.
    - 3a. Style glandular-hairy; stamens 14–15 ..... 217c. var. *adenostylosum*
    - 3b. Style glabrous; stamens 12–14 ..... 217d. var. *fargesii*

**217a. *Rhododendron oreodoxa* var. *oreodoxa***

山光杜鹃(原变种) shan guang du juan (yuan bian zhong)

*Rhododendron haematocheilum* Craib; *R. limprichtii* Diels; *R. reginaldii* I. B. Balfour.

Pedicel glandular; corolla lobes 7 or 8; stamens 15–16; ovary and style glabrous. Fl. Apr–Jun, fr. Aug–Oct.

• Forests, thickets; 2100–3600 m. S Gansu, W Hubei, Sichuan.

**217b. *Rhododendron oreodoxa* var. *shensiense*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 478. 1982.

陕西山光杜鹃 shan xi shan guang du juan

Pedicel with sparse wispy rufous tomentum; corolla lobes 5; stamens 10; ovary densely glandular-hairy; style glabrous.

• Forests; 2300–2500 m. SW Shaanxi (Taibai Shan).

**217c. *Rhododendron oreodoxa* var. *adenostylosum*** Fang & W. K. Hu, Acta Phytotax. Sin. 26: 304. 1988.

腺柱山光杜鹃 xian zhu shan guang du juan

Pedicel glandular; corolla lobes 6 or 7; stamens 14–15; ovary and style densely glandular-hairy.

• Forests; 3600–3900 m. W Sichuan, E Xizang.

**217d. *Rhododendron oreodoxa* var. *fargesii*** (Franchet) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 331. 1979.

粉红杜鹃 fen hong du juan

*Rhododendron fargesii* Franchet, J. Bot. (Morot) 9: 390. 1895; *R. erubescens* Hutchinson.

Pedicel glandular; corolla lobes 6 or 7; stamens 12–14; ovary densely glandular-hairy; style glabrous.

• Forests, thickets; 1800–3500 m. S Gansu, W Hubei, S Shaanxi, NW Sichuan.

**218. *Rhododendron praeteritum*** Hutchinson, Gard. Chron., ser. 3, 71: 149. 1922.

鄂西杜鹃 e xi du juan

Shrubs; young shoots green, sparsely tomentose. Petiole stout, 10–20 mm, floccose at first, soon glabrous; leaf blade leathery, obovate-oblong to oblong-elliptic, 6.5–8.5 × 3.1–4.5 cm; base rounded or truncate; margin revolute; apex obtuse or rounded, apiculate; abaxial surface pale green, glabrous at maturity except for sparse loose hairs on the prominent midrib; adaxial surface deep green, slightly rugose, midrib grooved adaxially, lateral veins 12–16-paired, glabrous. Inflorescence racemose-umbellate, 7–10-flowered; rachis ca. 15 mm, puberulent. Pedicel 1.8–2 cm, pubescent when young, soon glabrous; calyx 1–1.4 mm, glabrous outside; corolla open-campanulate, pale pink, with purple flecks, 2–4 cm, 5 nectar pouches at base; stamens 10, unequal, 1.2–3.5 cm, filaments pubescent at base; ovary ovoid, ca. 4 × 2.5 mm, glabrous or hirsute; style ca. 1.2 cm, glabrous; stigma capitate, small, oblong-ovoid, ca. 1.5 cm. Fl. May, fr. Sep.

• Forests, thickets; 1800–3300 m. W Gansu, W Hubei, SW Hunan, E Qinghai.

1a. Ovary glabrous; calyx ca. 1 mm ..... 218a. var. *praeteritum*  
1b. Ovary hirsute; calyx 1–1.4 mm ..... 218b. var. *hirsutum*

**218a. *Rhododendron praeteritum* var. *praeteritum***

鄂西杜鹃(原变种) e xi du juan (yuan bian zhong)

Calyx lobes ca. 1 mm, triangular; ovary glabrous.

• About 3300 m. W Gansu, W Hubei, E Qinghai.

**218b. *Rhododendron praeteritum* var. *hirsutum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 58. 1988.

毛房杜鹃 mao fang du juan

Calyx lobes 1–1.4 mm, broadly ovate; ovary densely brown-hirsute.

• Forests, thickets; 1800–1900 m. W Hubei, SW Hunan.

**219. *Rhododendron vernicosum*** Franchet, J. Bot. (Morot) 12: 258. 1898.

亮叶杜鹃 liang ye du juan

*Rhododendron lucidum* Franchet, J. Bot. (Morot) 9: 390. 1895, not Nuttall (1853); *R. adoxum* I. B. Balfour & Forrest; *R. araliiforme* I. B. Balfour & Forrest; *R. euanthum* I. B. Balfour & W. W. Smith; *R. hexamerum* Handel-Mazzetti; *R. rhanthum* I. B. Balfour & W. W. Smith; *R. sheltoniae* Hemsley & E. H. Wilson.

Shrubs or small trees, 1–5(–8) m tall; young shoots

sparsely glandular, glabrescent. Petiole cylindric, 15–35 mm, glabrous; leaf blade leathery, oblong-ovate to oblong-elliptic, 5–12.5 × 2.3–4.8 cm; base rounded; apex obtuse or rounded; abaxial surface pale gray-green, with minute punctulate hairs; adaxial surface dark green, slightly wax-covered, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 14–16-paired. Inflorescence 6–10-flowered; rachis ca. 10 mm, sparsely glandular and puberulent. Pedicel 2–3 cm, glandular-hairy; calyx fleshy; lobes 7 or 8, ca. 1.6 mm, densely glandular-hairy, margin gland-fringed; corolla widely funnel-campanulate, somewhat fragrant, pale pink to white, 3.5–5 cm, glabrous; lobes (5–)7, suborbicular, ca. 1.8 × 2 cm; apex emarginate; stamens (11–)14, unequal, 2–3 cm, filaments glabrous; ovary conoid, ca. 5 mm, densely red-glandular; style ca. 2.6 cm, red glandular-hairy to tip. Capsule cylindric, oblique, slightly curved, 30–40 mm. Fl. Apr–Jun, fr. Aug–Oct.

• Forests; 2600–4300 m. W Sichuan, SE Xizang, W Yunnan.

**220. *Rhododendron nymphaeoides*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 54. 1988.

睡莲叶杜鹃 shui lian ye du juan

Small trees; shoots ca. 3.3 mm in diam. below inflorescence; young shoots glabrous. Petiole 27–33 mm, glabrous; leaf blade leathery, ovate to widely elliptic, 4.7–6.3 × 3–3.8 cm; base auriculate to cordate; apex obtuse, apiculate; abaxial surface glaucous; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially, lateral veins 7-paired and slightly raised, flat abaxially. Inflorescence racemose-umbellate, 3–5-flowered; rachis 20–25 mm, glabrous. Pedicel 3–3.7 cm, sparsely glandular-hairy; calyx 1–1.6 mm, red glandular-hairy outside, margin undulate, ciliate; corolla campanulate, pink, ca. 4.5 cm, glabrous; lobes 7, suborbicular, ca. 1.5 × 2.3 cm, emarginate; stamens 14, 1.5–2.7 cm, filaments pubescent at base; ovary conoid, ca. 5 × 3.5 mm, densely red glandular-hairy; style ca. 2.8 cm, similarly glandular to tip; stigma capitate, ca. 4 mm in diam. Capsule not known. Fl. Apr.

• Mountain slopes; 900–1000 m. SE Sichuan (Gulin).

**221. *Rhododendron hemsleyanum*** E. H. Wilson, Bull. Misc. Inform. Kew 1910: 109. 1910.

波叶杜鹃 bo ye du juan

Shrubs or small trees, 2–9 m tall; branchlets stout, ca. 10 mm in diam. below inflorescence, puberulent. Petiole stout, 50–75 mm, sparsely glandular-hairy or glabrous; leaf blade thickly leathery, oblong to oblong-ovate, 9–21 × 4.6–10.5 cm; base auriculate-cordate; margin undulate; apex rounded; abaxial surface pale green, minutely papillate; adaxial surface dark green, somewhat shiny, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins ca. 17-paired, raised abaxially. Inflorescence 7–16-flowered; rachis 55–70 mm, sparsely glandular. Pedicel 3–4 cm, glandular-hairy or glabrous; calyx purple, ca. 1.5 mm, glandular abaxially; corolla open-campanulate, fragrant, white, without flecks, ca. 6 cm, outer surface glandular at base, sometimes puberulent at base within; lobes 7, suborbicular, ca. 2 × 2.4 cm, emarginate; stamens 14–16, unequal, 2.7–4.5 cm, filaments glabrous; ovary conoid, ca. 7 mm, green, densely glandular; style ca. 4.6 cm, glandular; stigma swollen,

capitate, ca. 4 mm in diam. Capsule cylindrical, 18–38 × 10–15 mm. Fl. May–Jun, fr. Aug–Oct.

- Forests; 1200–1500(–2000) m. SC Sichuan.

- 1a. Leaf blade 4.6–8 cm wide; petiole and pedicels glandular-hairy ..... 221a. var. *hemsleyanum*
- 1b. Leaf blade 6–10.5 cm wide; petiole and pedicels glabrous ..... 221b. var. *chengianum*

**221a. *Rhododendron hemsleyanum* var. *hemsleyanum***

波叶杜鹃(原变种) bo ye du juan (yuan bian zhong)

Petiole and pedicels glandular-hairy; leaf blade 4.6–8 cm wide.

- Forests; 1200–1500(–2000) m. SC Sichuan (Emei Shan).

**221b. *Rhododendron hemsleyanum* var. *chengianum*** (W. P. Fang) W. P. Fang ex W. K. Hu in L. C. Hu & M. Y. Fang, Fl. Reipubl. Popularis Sin. 57(2): 30. 1994.

无腺杜鹃 wu xian du juan

*Rhododendron chengianum* W. P. Fang, Icon. Pl. Omei. t. 31. 1942.

Petiole and pedicels glabrous, without glands; leaf blade 6–10.5 cm wide.

- Forests; ca. 1200 m. SC Sichuan (Emei Shan).

The type specimen of var. *hemsleyanum* has glabrous pedicels. This makes the distinctions between these two varieties less reliable.

**222. *Rhododendron fortunei*** Lindley, Gard. Chron. 1859: 868. 1859.

云锦杜鹃 yun jin du juan

?*Rhododendron albicaule* H. Léveillé.

Shrubs or small trees, 3–12 m tall; bark gray, falling off in flakes; young shoots green, glandular, glabrescent. Petiole cylindrical, 18–40 mm, sparsely glandular-hairy when young; leaf blade thickly leathery, oblong to oblong-elliptic, 8–14.5 × 3–9.2 cm; base rounded or truncate, rarely cordulate; apex obtuse to rounded, rarely acute; abaxial surface pale green, glabrous except for persistent punctulate hair bases; adaxial surface dark green, shiny; midrib prominent abaxially, grooved adaxially; lateral veins 14–16, flat abaxially, impressed adaxially. Inflorescence lax, 6–12-flowered; rachis 30–50 mm, glandular. Pedicel 2–3 cm, glandular-hairy; calyx lobes 7, ca. 1 mm, glandular and gland-fringed; corolla funnel-campanulate, fragrant, pink, 4.5–5.2 cm, outer surface glandular; lobes 7, obovate, 1.5–1.8 cm; apex undulate; stamens 14, unequal, 1.8–3 cm, filaments glabrous; ovary conoid, ca. 5 × 4.5 mm, densely glandular; style ca. 3 cm, glandular-hairy; stigma small. Capsule oblong, rough, 25–35 × 6–10 mm. Fl. Apr–May, fr. Aug–Oct.

- Forests; 600–2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, NE Yunnan, Zhejiang.

The type of *Rhododendron albicaule* (described from Zhejiang) is too poor to be certain of its identity, but it is probably referable to *R. fortunei*.

**223. *Rhododendron jinchangense*** Z. H. Yang, Acta Phytotax. Sin. 35: 186. 1997.

金厂杜鹃 jin chang du juan

Small trees, 2.5–5 m tall; bark gray; young shoots glabrous. Petiole 10–20 mm, glabrous; leaf blade subleathery, elliptic or narrowly elliptic, 11–16 × 3–5.4 cm; base cuneate; apex acuminate; both surfaces glabrous; abaxial surface pale green; adaxial surface green; midrib slightly raised, lateral veins 14–18, inconspicuous. Inflorescence racemose, 7–11-flowered; rachis 20–25 mm, glabrous. Pedicel 2.7–3.4 cm, glandular; calyx discoid, minute, glandular; corolla described as broadly funnelform (illustrated as broadly campanulate), rose-pink, 4.8–6 cm, lobes 7, suborbicular, ca. 1.8 × 2 cm; stamens 12–15, 2.5–3.5 cm, filaments glabrous; ovary ovoid, thick, ca. 7 mm, densely glandular-hairy; style ca. 4.2 cm, sparsely glandular; stigma discoid, ca. 4 mm in diam. Capsule not known. Fl. Apr.

- 1500–1700 m. S Yunnan.

This species is said to be allied to *Rhododendron fortunei* but to differ in the elliptic and subleathery leaves, the shorter (1–2 cm) petiole, the racemose inflorescence, and the broadly funnelform corolla. However, the plate accompanying the original description suggests that the corolla is broadly campanulate.

**224. *Rhododendron orbiculare*** Decaisne, Fl. Serres Jard. Eur. 22: 169. 1877.

团叶杜鹃 tuan ye du juan

Shrubs, rarely small trees, 1–4.5(–15) m tall; young shoots usually ca. 5 mm in diam., green, glabrous. Petiole cylindrical, 30–70 mm, glabrous; leaf blade thickly leathery, oblong to orbicular, 5–12.5 × 5.5–10.5 cm; base cordate-auriculate to rounded, the lobes often overlapping; apex obtuse or rounded; both surfaces usually glabrous; abaxial surface glaucous; adaxial surface green; midrib raised abaxially, grooved adaxially; lateral veins 10–14-paired, impressed adaxially. Inflorescence 7- or 8-flowered; rachis 15–25 mm, glandular. Pedicel 2.5–3.5 cm, puberulent, glandular; calyx ca. 1.5 mm, margin undulate, glandular; corolla campanulate, rose, 3.2–3.5 cm, glabrous; lobes 6–8, ovate, 1.3–1.5 × ca. 1.8 cm, emarginate; stamens 11–14, 1–2 cm, filaments glabrous; ovary conoid, ca. 8 × 2.5 mm, densely glandular-hairy; style ca. 1.8 cm, glabrous; stigma capitate, ca. 2 mm in diam. Capsule cylindrical, curved, 22–30 × 5–6 mm. Fl. May–Jun, fr. Aug–Oct.

- Forests, rocky slopes; 1400–3500(–4000) m. NE Guangxi, SW Sichuan.

*Rhododendron orbiculare* subsp. *maolingense* G. Z. Li (Guihaia 15: 294. 1995), described from Guangxi, is said to differ from subsp. *orbiculare* in its relatively narrow leaf blade (6–16 × 4–7 cm), longer corolla (ca. 7 cm), more numerous stamens (15–16), and more massive capsule (3–4 × ca. 1.5 cm). From the abbreviated description, it may be a species distinct from *R. orbiculare*; however, a proper comparison with other species in *R.* subsect. *Fortunea* is required.

- 1a. Leaf blade oblong, base cordate; corolla 6-lobed; stamens ca. 11 ..... 224c. subsp. *oblongum*
- 1b. Leaf blade ovate-orbicular or orbicular, base auriculate-cordate or subcordate to rounded; corolla 7-lobed; stamens 14.

- 2a. Leaf base auriculate-cordate,  
blade 5–10.5 cm ..... 224a. subsp. *orbiculare*
- 2b. Leaf base subcordate or rounded,  
blade 8–12.5 cm ..... 224b. subsp. *cardiobasis*

**224a. *Rhododendron orbiculare* subsp. *orbiculare***

团叶杜鹃(原亚种) *tuan ye du juan* (*yuan ya zhong*)

*Rhododendron rotundifolium* David ex Franchet.

Leaf blade orbicular, 5.5–11.5 × 5.5–10.5 cm; base auriculate-cordate, lobes overlapping; abaxial surface glabrous. Corolla lobes 7; stamens 14.

- Forests, rocky slopes; 1400–3500(–4000) m. SW Sichuan.

**224b. *Rhododendron orbiculare* subsp. *cardiobasis*** (Sleumer) D. F. Chamberlain, *Notes Roy. Bot. Gard. Edinburgh* 37: 331. 1979.

心基杜鹃 *xin ji du juan*

*Rhododendron cardiobasis* Sleumer, *Notizbl. Bot. Gart. Berlin-Dahlem* 12: 484. 1935.

Leaf blade ovate-orbicular, 8–12.5 × 5.5–9 cm; base subcordate or ± rounded; abaxial surface glabrous. Corolla lobes 7; stamens 14.

- Forests; 1500–2200 m. NE Guangxi.

**224c. *Rhododendron orbiculare* subsp. *oblongum*** W. K. Hu, *Bull. Bot. Res., Harbin* 8(3): 58. 1988.

长圆团叶杜鹃 *chang yuan tuan ye du juan*

Leaf blade oblong; base cordate; abaxial surface puberulent. Corolla lobes 6; stamens 11.

- Forests. NE Guangxi.

**225. *Rhododendron maoerense*** W. P. Fang & G. Z. Li, *Bull. Bot. Res., Harbin* 4(1): 1. 1984.

猫儿山杜鹃 *mao er shan du juan*

Trees 8–12 m tall; older branches grayish; shoots ca. 12 mm in diam. below inflorescence; young shoots pale purple, glabrous. Petiole pale purple, 15–20 mm, glabrous; leaf blade thickly leathery, usually oblanceolate, rarely obovate, 14–16 × 4–5 cm; base cuneate; apex obtuse or acute; both surfaces glabrous; abaxial surface pale green, yellowish when dry; adaxial surface dark green, midrib prominent abaxially, slightly grooved adaxially; lateral veins 19–21-paired, distinct. Inflorescence 9–10-flowered; rachis 40–50 mm, sparsely glandular. Pedicel 3–4.5 cm, glandular-hairy; calyx discoid, glandular outside; corolla campanulate, white, 6–6.5 cm, lobes 7, suborbicular, ca. 2.5 cm, emarginate; stamens 14–17, 2.5–4 cm, filaments glabrous; ovary ovoid, ca. 6 mm, densely glandular-hairy; style stout, pale purple, ca. 5 cm, sparsely glandular; stigma discoid, ca. 4 mm in diam. Capsule oblong, 20–30 mm, calyx and style persistent. Fl. May, fr. Sep.

- Forests, streamsides; 1800–1900 m. NE Guangxi.

**226. *Rhododendron platypodum*** Diels, *Bot. Jahrb. Syst.* 29: 511. 1900.

阔柄杜鹃 *kuo bing du juan*

Shrubs or small trees, 2–8 m tall; bark gray; branchlets stout, 6–10 mm in diam., with slight gray waxy dust. Petiole flat, 1–2 cm, up to 10 mm wide; leaf blade thickly leathery, broadly elliptic or suborbicular, 9–13 × 5.5–7.5 cm; base obtuse to rounded, decurrent along petioles; apex rounded, sometimes apiculate; abaxial surface with minute punctulate hair-bases when mature, otherwise glabrous; adaxial surface dark green; midrib slightly raised on both surfaces; lateral veins 12–18-paired, glabrous. Inflorescence lax, 12–15-flowered; rachis 40–60 mm, slightly glandular. Pedicel 1.7–3.7 cm, glabrous or glandular; calyx rimlike, fleshy; lobes 7, ca. 2 mm, undulate, glabrous; corolla funnel-campanulate, pinkish, lacking markings; lobes 7, suborbicular, ca. 1.6 × 2–2.5 cm; stamens 12–14(–16), filaments puberulent near base; ovary ovoid, ca. 6 mm, densely glandular-hairy; style ca. 3.7 cm, glandular-hairy to tip, stigma discoid, 3–5 mm in diam. Capsule cylindrical, ca. 15 × 8–9 mm, densely glandular. Fl. Apr–May, fr. Aug–Sep.

- Forests, thickets, rocky slopes; 1800–2200 m. Chongqing (Nanchuan).

The present authors have seen no material of *Rhododendron yuefengense* G. Z. Li (*Guihaia* 15: 293. 1995), described from Guangxi. It is very close to, and probably a synonym of, *R. platypodum*, apparently differing only in its smaller stature (0.5–1.5 m tall) and glabrous stamens. The other differences quoted in the original description do not significantly differentiate between the two species.

**227. *Rhododendron verruciferum*** W. K. Hu, *Acta Phytotax. Sin.* 26: 301. 1988.

疣梗杜鹃 *you geng du juan*

Shrubs, to 3 m tall; shoots ca. 5 mm in diam. below inflorescence; young shoots green, glabrous. Petiole cylindrical, 18–22 mm, glabrescent; leaf blade leathery, elliptic, 4.5–6.6 × 2–2.8 cm; base cuneate or narrowly rounded; margin revolute; apex obtuse, apiculate; abaxial surface pale green, puberulous; adaxial surface dark green; midrib prominent abaxially, grooved adaxially; lateral veins 13–15-paired, obscure abaxially, impressed adaxially. Inflorescence 7–9-flowered; rachis ca. 6 mm, puberulent. Pedicel slender, 1.5–2.2 cm, warty and glandular; calyx lobes 7, ca. 1.5 mm, glandular; corolla open-campanulate, white, pink at base, 2.5–3 cm, glabrous; lobes 7, suborbicular, ca. 1.2 × 1.3 cm; stamens 14, unequal, 1.3–1.9 cm, filaments white-puberulent; ovary oblong, ca. 4 × 3.3 mm, densely glandular; style 1.6–1.8 cm, densely glandular-hairy; stigma small. Capsule not known. Fl. May.

- *Pinus* forests; 3300–3400 m. W Sichuan.

**228. *Rhododendron gonggashanense*** W. K. Hu, *Bull. Bot. Res., Harbin* 8(3): 55. 1988.

贡嘎山杜鹃 *gong ga shan du juan*

Shrubs to 3 m tall; shoots ca. 4 mm in diam. below inflorescence; young shoot green, glabrescent. Petiole stout, 10–20 mm, glabrous; leaf blade leathery, elliptic to widely ovate, 4.5–6.6 × 2.8–4.5 cm; base rounded or cordate; apex rounded, apiculate; both surfaces glabrous; abaxial surface pale green; adaxial surface green; midrib slightly grooved adaxially, lateral veins ca. 13-paired, obscure abaxially, appressed. Inflorescence ca. 15-flowered; rachis ca. 20 mm, glabrescent. Pedicel slender,

2–2.2 cm, glandular-hairy; calyx lobes 7, ca. 2 mm, glandular-hairy outside; corolla funnel-campanulate, white flushed pink, with yellow flecks, 3.2–3.5 cm, lobes 6 or 7, unequal, ca. 1.2 × 1.3–1.5 cm, emarginate; stamens 12–15, 1.4–1.9 cm; filaments glabrous; ovary conoid, ca. 5 mm, densely glandular-hairy; style ca. 2.5 cm, glandular-hairy, stigma small. Capsule not known. Fl. Jun.

- Thickets, mountain slopes; 3200–3300 m. W Sichuan.

**229. *Rhododendron discolor*** Franchet, J. Bot. (Morot) 9: 391. 1895.

喇叭杜鹃 *la ba du juan*

*Rhododendron fortunei* subsp. *discolor* (Franchet) D. F. Chamberlain; *R. fortunei* var. *houlstonii* (Hemsley & E. H. Wilson) Rehder & E. H. Wilson; *R. fortunei* var. *kwangfuense* (Chun & W. P. Fang) G. Z. Li; *R. houlstonii* Hemsley & E. H. Wilson; *R. kwangfuense* Chun & W. P. Fang; *R. mandarinorum* Diels.

Shrubs or small trees, 1.5–8 m tall; branchlets stout, glabrous. Petiole stout, 15–25 mm, glabrous; leaf blade leathery, oblong-elliptic or oblong-lanceolate, 9.5–18 × 2.4–5.4 cm, or broader; base cuneate, rarely cordate; apex obtuse; both surfaces glabrous; abaxial surface pale yellowish green; adaxial surface dark green; midrib raised abaxially, grooved adaxially; lateral veins ca. 21-paired, obscure abaxially, impressed adaxially. Inflorescence 6–8(–10)-flowered; rachis 15–30 mm, glandular. Pedicel 2–2.5 cm, glabrous or sparsely glandular; calyx lobes 7, 2–5 mm, ovate, glandular, margin gland-fringed; corolla funnel-campanulate, pale pink to white, ca. 5.5 cm, lobes 7, suborbicular, ca. 2 × 2.5 cm, emarginate; stamens 14–16, unequal, 3–3.8 cm, filaments glabrous; ovary conoid, ca. 7 mm, densely glandular-hairy; style glandular to tip. Capsule cylindrical, 40–50 × ca. 15 mm. Fl. Jun–Jul, fr. Sep–Oct.

- Forests; 900–1900 m. Anhui, Chongqing, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.

*Rhododendron discolor* intergrades with *R. fortunei*, and can reliably be separated from that species only by the proportionately narrower leaves.

**230. *Rhododendron davidii*** Franchet, Bull. Soc. Bot. France 33: 230. 1886 [*“davidii”*].

腺果杜鹃 *xian guo du juan*

Shrubs or small trees, 1.5–5(–8) m tall; young shoots green, glabrous. Petiole pale pink, 15–20 mm, glabrous; leaf blade thickly leathery, oblong-oblong-lanceolate to oblanceolate, 10–16 × 2–4.5 cm; base cuneate; margin revolute; apex acute to acuminate; both surfaces glabrous; abaxial surface pale green; adaxial surface darker; midrib prominent abaxially, grooved adaxially, lateral veins 12–17-paired, veins evident abaxially, slightly impressed adaxially. Inflorescence 6–12-flowered; rachis 30–60 mm, glandular and tomentose. Pedicel ca. 1 cm, glandular-hairy; calyx lobes 6, 1–1.5 mm, glandular-hairy outside; corolla open-campanulate, pink to rose-purple, with dark purple flecks, 3.5–4.5 cm, glabrous within, sparsely glandular outside; lobes 7 or 8, ovate to orbicular, ca. 1.5 × 2 cm, crenulate, slightly emarginate; stamens 14–15, 3–4.5 cm; filaments

glabrous; ovary conoid, 4–5 mm, densely glandular-hairy; style 4–4.5 cm, glabrous or with a few glands at base; stigma capitate, small. Capsule cylindrical, 18–20 mm. Fl. Apr–May, fr. Jul–Aug.

- Evergreen forests; 1700–2400 m. W Sichuan, NE Yunnan.

**231. *Rhododendron huanum*** W. P. Fang, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 12: 38. 1939 [*“huanum”*].

凉山杜鹃 *liang shan du juan*

Shrubs or small trees, 1.6–4.5(–12) m tall; young shoots stout, pale green, glabrous. Petiole cylindrical, 13–23 mm, glabrescent; leaf blade leathery, oblong-lanceolate, 7–14 × 1.8–3.5 cm; base cuneate; apex acute or cuspidate; both surfaces glabrous; abaxial surface grayish green; adaxial surface dark green, midrib prominent abaxially, grooved adaxially, lateral veins 16–20-paired, prominent adaxially. Inflorescence racemose, 10–13-flowered; rachis greenish, 30–35 mm, glabrescent. Pedicel 3.5–4.2 cm, glabrous; calyx purple, lobes 7, 3–5(–10) mm, rounded, glabrous or gland-fringed; corolla campanulate, red to purple or lilac, ca. 3.5 cm, glabrous; lobes 6 or 7, suborbicular, ca. 1.6 × 1.8 cm; apex entire; stamens 12–14, unequal, 1.3–2 cm, filaments glabrous; ovary conoid, ca. 7 mm, densely glandular-hairy; style ca. 2.1 cm, glandular to tip; stigma capitate, ca. 2.5 mm in diam. Capsule oblong, 15–30 mm, with some glands; calyx persistent. Fl. May–Jun, fr. Sep–Oct.

- Forests, thickets; 1200–3000 m. Chongqing, NE Guizhou, Sichuan, NE Yunnan.

**232. *Rhododendron liboense*** Zheng R. Chen & K. M. Lan, Acta Phytotax. Sin. 41: 563. 2003.

荔波杜鹃 *li bo du juan*

Small trees, 2–5 m tall; branchlets robust, glabrous. Petiole 1.7–2 cm, glabrous; leaf blade leathery, elliptic-lanceolate, 10–15 × 1.6–2.8 cm; base cuneate; apex acute; abaxial surface pale green, glabrous; adaxial surface green, glabrous, midrib prominent abaxially, grooved adaxially; lateral veins 11–14-paired. Inflorescence a terminal corymb, 7–9-flowered; rachis 10–30 mm, glabrous. Pedicel 2.1–3.7 cm, glabrous; calyx small, glandular-hairy; corolla broadly campanulate, pink, 3.7–5.5 × ca. 8 cm, outer surface glabrous or with a few glandular hairs; stamens 15, unequal, 2–4 cm, filaments pilose at base; ovary 4–5 mm, with dense white-pilose glands; style 4–4.5 cm, glabrous or with a few long glandular hairs; stigma capitate. Capsule cylindrical-ellipsoid, 22–30 × ca. 15 mm, densely glandular. Fl. Mar–Apr, fr. Dec.

- Karstic hill summits; 600–700 m. SE Guizhou (Libo).

The present authors have seen no material of this species. It was compared by the original authors with *Rhododendron huanum*, but was distinguished by its narrower leaves, shorter calyx, and larger corolla.

**233. *Rhododendron serotinum*** Hutchinson, Bot. Mag. 146: t. 8841. 1920.

晚波杜鹃 *wan bo du juan*

Shrubs, with a straggling habit, to 3 m tall; branchlets glabrous. Petiole 20–35 mm, glabrous; leaf blade leathery, oblong-elliptic, 8–18.5 × (3.5–)4–9 cm; base auriculate; margin

undulate; apex mucronate; both surfaces glabrous; abaxial surface glaucous-green; lateral nerves ca. 15-paired. Inflorescence shortly racemose, 7–8-flowered; rachis ca. 30 mm, glandular-papillose. Pedicel 3–4.5 cm, minutely glandular-papillose; calyx lobes minute, undulate, margin with minute red glands; corolla funnel-campanulate, fragrant, white, flushed pink on the outer surface, with flecks and a basal blotch, 6–6.5 cm, tube outer surface glandular; lobes 7, ca. 2 × 3 cm; stamens 15–16, unequal, ca. 4.5 cm, filaments pubescent below; ovary ovoid, ca. 6 mm, covered with short white glandular hairs; style slightly longer than stamens, glandular to the tip; stigma discoid, 4–4.5 mm in diam. Capsule not known. Fl. Aug–Oct. (in cultivation).

2. *Rhododendron* subsect. *Auriculata* (Tagg) Sleumer, Bot. Jahrb. Syst. 24: 543. 1949.

耳叶杜鹃亚组 *er ye du juan ya zu*

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* ser. *Auriculata* Tagg in J. B. Stevenson, Sp. Rhodod. 38. 1930 [*Auriculatum*].

Small trees, 3–10 m tall; bark rough; young shoots densely glandular-setulose or setose; bud scales long, narrow, apex acuminate, caudate. Leaf blade oblong-elliptic or oblong-lanceolate; base obtuse or cordate; abaxial surface densely gland-tipped-setulose. Inflorescence 7–15-flowered. Calyx minute; corolla funnelform or funnel-campanulate, 7-lobed, white or cream to rose; stamens 14–16; filaments glabrous; ovary glandular-hairy or glandular-setulose; style glandular to tip.

• Two species: China.

- 1a. Young shoots densely long glandular-setulose; corolla 6(–10) cm ..... 234. *R. auriculatum*
- 1b. Young shoots tomentose and glandular-setulose; corolla ca. 4 cm ..... 235. *R. chihsinianum*

234. *Rhododendron auriculatum* Hemsley, J. Linn. Soc., Bot. 26: 20. 1889.

耳叶杜鹃 *er ye du juan*

Shrubs or small trees, 5–10 m tall; bark grayish; older branches glabrous; young shoots densely long glandular-setulose. Leaf buds long-conical, 3.5–5.5 cm; outer bud scales narrow, ca. 3.5 cm; apex acuminate, glabrous. Petiole stout, 18–30 mm, densely glandular; leaf blade leathery, oblong-elliptic, oblong-lanceolate to oblanceolate, 9–12 × 3–6.5 cm; base rounded or auriculate, unequal; margin cartilaginous, glandular-ciliate; apex obtuse, cuspidate; abaxial surface pale green, gland-tipped-villous, especially on midrib and main veins, also glandular; adaxial surface green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 20–22-paired, raised abaxially. Inflorescence large and loose, 7–15-flowered; rachis 20–30 mm, glandular. Pedicel 2–3 cm, densely glandular-hairy; calyx undulate, membranous, 2–4 mm, glandular; corolla funnelform, fragrant, white or cream to rose, 6(–10) cm, glandular-hairy inside, lobes 7; stamens 14–16, 2.5–3.4(–4) cm, filaments slender, glabrous; ovary ovoid, ca. 6 mm, 8-locular, densely glandular-hairy; style stout, ca. 3 cm, glandular to tip. Capsule terete, curved, distinctly ribbed, 30–40 mm. Fl. Jul–Aug, fr. Sep–Oct.

3. *Rhododendron* subsect. *Grandia* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 549. 1949.

大叶杜鹃亚组 *da ye du juan ya zu*

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

*Rhododendron* ser. *Grandia* Tagg in J. B. Stevenson, Sp. Rhodod. 305. 1930 [*Grande*]; *Waldemaria* Klotzsch.

Trees or small trees, rarely large shrubs; young shoots stout, mostly ± tomentose. Leaf blade large, up to 70 cm, leathery or thickly leathery, oblong-elliptic to oblanceolate or obovate; abaxial surface with a 1- or 2-layered indumentum; adaxial surface gla-

Mixed forests; 1500–2900 m. ?S Yunnan [N Vietnam].

*Rhododendron serotinum* was described in 1920 from plants cultivated at Kew that had been raised from seed that had been received from Paris in 1889. This seed had originally been received from Delavay and was considered to have been collected from S of Mengzi, in S Yunnan. The plate cited above and the accompanying original description are a good match with recent material collected in S Yunnan and in N Vietnam. Field studies indicate that this material apparently flowers in the wild late in the season; this is in line with the flowering time reported in cultivation. However, no recent flowering material is known. It may be related to *R. hemsleyanum*, from Sichuan (Emei Shan), but apparently differs in the blotched corolla, hairy filaments, and in the late flowering period.

235. *Rhododendron chihsinianum* Chun & W. P. Fang, Acta Phytotax. Sin. 6: 168. 1957.

红滩杜鹃 *hong tan du juan*

Small trees, evergreen, 3–4 m tall; bark brown, rough; young shoots tomentose and glandular-setulose, glabrescent. Leaf buds ovate, ca. 1.3 cm. Petiole stout, 15–40 mm, densely glandular-setulose; leaf blade leathery, oblong or oblong-oblanceolate, 10–20(–30) × 4.5–10 cm; base obtuse or slightly cordate; margin revolute; apex rounded, apiculate; abaxial surface evanescent pubescent; adaxial surface green, brown-setulose toward base of midrib, glabrescent; midrib grooved adaxially; lateral veins 17–19-paired, slightly raised on both surfaces. Inflorescence 8-flowered; rachis ca. 20 mm, rufous-villous. Pedicel ca. 1 cm, brownish pilose, eglandular; calyx saucer-shaped, ca. 2 mm; margin undulate, ciliate; corolla funnel-campanulate, pink, ca. 4 cm; lobes 7, obovate, ca. 1.5 cm; stamens 15, unequal, 3–3.5 cm, filaments glabrous; ovary ca. 6 mm, densely glandular; style glandular to tip. Capsule terete, 13–30 × 9–16 mm, rough. Fr. Sep–Nov.

• Forests, valleys, mountain slopes; 600–2000 m. N Guizhou, W Hubei, S Shaanxi, E Sichuan.

• Forests, rocky slopes; 800–1800 m. N Guangxi.



brous when mature, usually plastered, compacted and agglutinated, rarely loose and felted indumentum. Inflorescence terminal, broad and large, 12–30-flowered; rachis stout, 10–60 mm. Calyx minute, 5–8-lobed; corolla broadly campanulate or ventricose-campanulate, rarely funnellform, (5–)6–8-lobed, fleshy, creamy-white, rose or deep purple-red, often with crimson basal blotch, with or without nectar pouches; stamens 10–20; ovary 6–20-locular, tomentose, glandular or glabrous. Capsule large, woody.

Twelve species: Asia; ten species (five endemic) in China.

- 1a. Petiole flattened and winged, 0.5–2.5 cm.
  - 2a. Petiole 1.5–2.5 cm; corolla obliquely campanulate, pale yellow to pink; ovary hairy ..... 244. *R. praestans*
  - 2b. Petiole 0.5–1 cm; corolla broadly campanulate, white to pink; ovary glabrous ..... 245. *R. watsonii*
- 1b. Petiole ± cylindric, 1.5–5 cm.
  - 3a. Abaxial leaf surface with loose, not agglutinated, indumentum.
    - 4a. Indumentum pale brown, tomentose, sometimes forming a marginal band ..... 242. *R. protistum*
    - 4b. Indumentum gray-white, 2-layered; upper layer arachnoid-tomentose, with a tendency to disappear ..... 243. *R. magnificum*
  - 3b. Abaxial leaf surface with thin agglutinated indumentum.
    - 5a. Vegetative bud scales persistent; flowers pink ..... 240. *R. pudorosum*
    - 5b. Vegetative bud scales deciduous; flowers crimson, pink, white, cream or yellow.
      - 6a. Corolla 5-lobed, crimson; stamens 10; leaf blade 12–17 cm ..... 241. *R. oreogenum*
      - 6b. Corolla 6- or 8-lobed, pink or cream to yellow; stamens 14–20.
        - 7a. Corolla pink; filaments glabrous ..... 239. *R. montroseanum*
        - 7b. Corolla cream to yellow; filaments hairy.
          - 8a. Pedicel and ovary tomentose and glandular; leaf blade 14–30 cm ..... 236. *R. grande*
          - 8b. Pedicel and ovary tomentose but not glandular; leaf blade 9–70 cm.
            - 9a. Leaf blade 20–70 cm; petiole 3–5 cm ..... 237. *R. sinogrande*
            - 9b. Leaf blade 9–21 cm; petiole 1.5–2.5 cm ..... 238. *R. sidereum*

**236. *Rhododendron grande*** Wight, Calcutta J. Nat. Hist. 8: 176. 1847.

大叶杜鹃 da ye du juan

*Rhododendron argenteum* J. D. Hooker; *R. longifolium* Nuttall; *Waldemaria argentea* (J. D. Hooker) Klotzsch.

Large trees, 8–10 m tall; branchlets stout, ca. 8 mm in diam. Petiole 35–50 mm, sparsely whitish hairy; leaf blade leathery, oblong-lanceolate to oblanceolate, 14–30 × 8–13 cm; base cuneate to broadly cuneate; apex obtuse or acuminate, cuspidate; abaxial surface silvery-white, indumentum thin, agglutinated; adaxial surface shiny, glabrous, midrib and lateral veins strongly prominent abaxially. Inflorescence a large globose corymb, 20–25-flowered; rachis 40–50 mm. Pedicel 2–3 cm, glandular, sometimes also tomentose; calyx teeth 8, 1–2 mm, undulate, glandular; corolla ventricose-campanulate, pale rose in bud, later white or creamy-white, with purple nectar pouches, 5–7 cm, lobes 8; stamens 16, 3.5–5 cm, filaments pubescent at base or glabrescent; ovary ca. 9 mm, 16-locular, densely glandular-hairy and tomentose; style stout, ca. 3.8 cm, glabrous or with a few glands at base, stigma large, discoid. Capsule oblong-cylindric, ca. 45 × 14 mm. Fl. May, fr. Aug–Sep.

Mixed mountain forests; 1600–2900 m. S Xizang [Bhutan, N India, Nepal, Sikkim].

**237. *Rhododendron sinogrande*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 274. 1916.

凸尖杜鹃 tu jian du juan

*Rhododendron sinogrande* var. *boreale* Tagg & Forrest.

Trees, 5–12 m tall; shoots stout, 1–1.5 cm in diam., thinly

silvery-gray-tomentose. Petiole stout, 30–50 mm, with silvery appressed indumentum; leaf blade thickly leathery, oblong-elliptic to oblong-oblanceolate, 20–70 × 8–30 cm; base broadly cuneate or rounded; margin slightly revolute; apex rounded or obtuse and stiffly mucronate; abaxial surface silvery-gray to buff, indumentum compacted and agglutinated; adaxial surface glabrous; midrib prominent abaxially. Inflorescence racemose-umbellate, 15–20-flowered; rachis 30–60 mm. Pedicel stout, 3–5 cm, with a dense buff tomentum; calyx oblique; lobes 8(–10), ca. 2 mm, triangular, tomentose or glabrescent; corolla ventricose-campanulate, fleshy, creamy-white to pale yellow, 4.5–5.5 cm, with crimson nectar pouches at base inside; lobes 8(–10); stamens 18–20, unequal, filaments densely puberulent at base; ovary ca. 10 mm, densely pale brown-tomentose, eglandular; style glabrous, stigma large and discoid. Peduncle 6–6.5 cm. Capsule large and woody, cylindric, slightly curved, 40–70 × 14–17 mm, densely rusty-tomentose. Fl. Apr–May, fr. Aug–Oct.

Coniferous forests in alpine regions, *Rhododendron* thickets; 2100–3600 m. SE Xizang, W Yunnan [NE Myanmar].

**238. *Rhododendron sidereum*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 12: 162. 1920.

银灰杜鹃 yin hui du juan

Shrubs or small trees, 3–10 m tall; branchlets and petioles with gray-white agglutinated indumentum when young, glabrescent. Petiole 15–25 mm; leaf blade leathery, narrowly oblong to oblong-lanceolate, 9–21 × 3.5–6.5 cm; base broadly cuneate or rounded; margin slightly revolute; apex obtuse or acute and apiculate; abaxial surface indumentum silvery-gray, thin, agglutinated, glabrous on midrib; adaxial surface dark-

punctate, glabrous but with vestiges of juvenile hairs in midrib; midrib prominent abaxially, grooved adaxially. Inflorescence racemose-umbellate, 14–20-flowered; rachis 50–60 mm. Pedicel 1.5–3 cm, densely pale brown-tomentose; calyx oblique; teeth 8, ca. 1 mm, triangular, tomentose; corolla ventricose-campanulate, creamy-white to pale yellow, 3.5–4 cm, with crimson nectar pouches at base inside, lobes 8; stamens 16, unequal, filaments pubescent at base; ovary ca. 8 mm, densely fawn-tomentose, eglandular; style glabrous and slightly shorter than corolla but longer than stamens; stigma large and discoid. Capsule cylindric, oblique at base, 25–30 × 8–10 mm, ± fawn-tomentose. Fl. Apr–May, fr. Jul–Sep.

Mixed forests on mountain slopes; 2400–3400 m. W Yunnan [NW Myanmar].

**239. *Rhododendron montroseanum*** Davidian, Notes Roy. Bot. Gard. Edinburgh 37: 338. 1979.

墨脱杜鹃 mo tuo du juan

*Rhododendron mollyanum* Cowan & Davidian, Rhododendron Year Book 8: 72. 1953, not *R. mollianum* Koorders (1909).

Trees 12–15 m tall; shoots stout, ca. 12 mm in diam., thinly gray-tomentose. Petiole stout, 20–40 mm, silvery-gray arachnoid-tomentose or glabrescent; leaf blade thickly leathery, oblanceolate to oblong, 20–30 × 5.5–10 cm; base rounded or broadly cuneate; apex rounded and mucronate; abaxial surface indumentum silvery-white, thin, compacted; adaxial surface glabrous; midrib and lateral veins prominent abaxially. Inflorescence racemose-umbellate, 15–20-flowered; rachis ca. 30 mm, floccose. Pedicel 3–5 cm, densely tawny-tomentose; calyx teeth 8, ca. 1 mm, minute, tomentose; corolla ventricose-campanulate, pink with crimson blotch at base, ca. 5 cm, lobes 8, emarginate; stamens 16, unequal, filaments glabrous; ovary 8–9 mm, densely rufous-tomentose; style slightly shorter than corolla, but longer than stamens, glabrous; stigma discoid.

- Open montane forests; 2800–2900 m. S Xizang.

**240. *Rhododendron pudorosum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 239. 1937.

羞怯杜鹃 xiu qie du juan

Trees 6–8 m tall; shoots stout, ca. 10 mm in diam., sparsely tomentose; bud scales persistent. Petiole stout, 25–30 mm, sparsely gray-white tomentose; leaf blade thickly leathery, oblanceolate to oblong, 14–20 × 4–7 cm; base rounded or broadly cuneate; margin slightly revolute; apex obtuse or rounded, mucronate; abaxial surface with glands; adaxial surface glabrous; midrib prominent abaxially. Inflorescence racemose-umbellate, 16–24-flowered; rachis 25–30 mm. Pedicel ca. 3.2 cm, ± yellowish floccose-tomentose; calyx lobes 8, ca. 1 mm, sparsely floccose; corolla ventricose-campanulate, rose-pink with rose basal blotch, 3.5–4 × ca. 5 cm wide, lobes 6(–8), emarginate; stamens 16, unequal, filaments glabrous; ovary ca. 7 × 3 mm in diam., densely white-tomentose, eglandular; style ca. 2.8 cm, glabrous; stigma large and discoid. Fl. May.

- *Abies* forests, *Rhododendron* thickets; 3300–3800 m. S Xizang.

**241. *Rhododendron oreogenum*** L. C. Hu, Acta Phytotax. Sin. 30: 541. 1992.

藏东杜鹃 zang dong du juan

Small trees, 4–5 m tall; young shoots ca. 6 mm in diam., sparsely grayish tomentose, soon glabrescent. Petiole terete, 15–20 mm, sparsely floccose; leaf blade leathery, oblong to ovate-oblong, 15–17 × 4–4.8 cm; base cuneate or broadly cuneate; margin slightly revolute; apex obtuse or acute and mucronate; abaxial surface silvery-white indumentum thin, compacted and agglutinated; adaxial surface glabrous, midrib markedly elevated abaxially, impressed adaxially; lateral veins 22–23-paired, conspicuous abaxially. Inflorescence racemose-umbellate, ca. 16-flowered; rachis ca. 25 mm, floccose. Pedicel 1–1.5 cm, densely pale brown-tomentose; calyx lobes 5, 1–1.5 mm, sparsely tomentose; corolla campanulate, bright crimson, purple within at base of tube, ca. 4 cm, lobes 5, suborbicular, emarginate; stamens 10, unequal, filaments glabrous; ovary 6–7 × ca. 3.5 mm, 6-locular, densely pale brown-tomentose; style slightly shorter than corolla and longer than stamens, glabrous; stigma slightly lobulate. Fl. May.

- *Abies* forests on mountain slopes; 2800–2900 m. SE Xizang (Médog).

The 5-lobed corolla suggests that this species is only doubtfully a member of *Rhododendron* subsect. *Grandia*. It may be related to, or a synonym of, *R. lanigerum* in *R.* subsect. *Arborea*.

**242. *Rhododendron protistum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 151. 1920.

翘首杜鹃 qiao shou du juan

Trees, 5–10 m tall; shoots stout, ca. 1 cm in diam., yellow-gray-tomentose. Petiole stout, terete, 25–40 mm, glabrous; leaf blade thickly leathery, oblong-lanceolate to oblong-oblanceolate, 12–45 × 5–20 cm; base cuneate; apex obtuse, mucronate; abaxial surface appressed pale brown tomentose, sometimes restricted to a marginal band at maturity; adaxial surface glabrous, sometimes with vestiges of hairs; midrib stout, conspicuously elevated abaxially. Inflorescence racemose-umbellate, 20–30-flowered; rachis ca. 60 mm. Pedicel stout, 1.5–2 cm, densely tawny-tomentose; calyx lobes 8, 2–3 mm, unequal, triangular, tomentose; corolla funnelform-campanulate, creamy-white, rose or deep purple-red, with dark basal blotch, 5–8 cm, nectar pouches present; lobes 8; stamens 16, unequal, filaments glabrous; ovary 9–11 mm, densely tawny fasciculate-tomentose; style ca. 4 cm, glabrous; stigma large and discoid-lobulate. Capsule cylindric, ca. 40 × 12 mm, tomentose. Fl. Mar–May, fr. Aug–Nov.

Mixed forests, *Abies* forests on mountain slopes; 2400–4200 m. SE Xizang, W Yunnan [NE Myanmar].

- 1a. Leaf blade 20–45 cm; abaxial surface with tomentum restricted to a marginal band at maturity; flowers 5–5.5 cm, creamy-white tinged rose ..... 242a. var. *protistum*
- 1b. Leaf blade 12–37 cm; abaxial surface with indumentum continuous and loose; flowers 7–8 cm, deep purple-red ..... 242b. var. *giganteum*

**242a. *Rhododendron protistum* var. *protistum***

翘首杜鹃(原变种) qiao shou du juan (yuan bian zhong)

*Rhododendron giganteum* Forrest var. *seminudum* Tagg & Forrest.

Leaf blade 20–45 × 7–20 cm; abaxial surface with indumentum usually restricted to marginal band; corolla creamy white tinged with rose, 5–5.5 cm. Fl. May, fr. Aug.

Mixed forests, *Abies* forests on mountain slopes; 2400–4200 m. SE Xizang, W Yunnan [NE Myanmar].

**242b. *Rhododendron protistum* var. *giganteum*** (Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 331. 1979.

大树杜鹃 da shu du juan

*Rhododendron giganteum* Forrest, J. Roy. Hort. Soc. 49: 27. 1924.

Leaf blade 12–37 × 4–12 cm; abaxial surface indumentum continuous and loose; corolla deep purple-red, 7–8 cm. Fl. Mar–May, fr. Nov.

- Mixed forests; 2500–3300 m. W Yunnan.

**243. *Rhododendron magnificum*** Kingdon Ward, J. Bot. 73: 247. 1935.

强壮杜鹃 qiang zhuang du juan

Trees, 13–18 m tall; branchlets stout, glabrous. Petiole stout, slightly flattened, narrowly winged, 30–35 mm, sparsely gray-tomentose, glabrescent; leaf blade leathery, broadly obovate to oblong-ovate, widest above middle, 20–32 × 10–14 cm; base cuneate with broad wings decurrent down petiole; apex rounded, shortly apiculate; abaxial surface gray-white, with a thin loose 2-layered indumentum, upper layer arachnoid, tending to disappear in older leaves, lower layer compacted; adaxial surface slightly rugulose, glabrous; midrib and veins prominent abaxially. Inflorescence racemose-umbellate, ca. 30-flowered; rachis ca. 30 mm. Pedicel 1–1.5 cm, densely rufous-pubescent; calyx lobes 8, ca. 1 mm; corolla campanulate or funnellform-campanulate, rosy-purple, unspotted, 5–6 × ca. 5 cm, with darker nectar pouches, puberulent at base inside, lobes 8; stamens 16, unequal, filaments glabrous; ovary ca. 7 × 4 mm, 16–20-locular, densely rufous-tomentose; style red, longer than stamens, glabrous, stigma discoid. Fl. Feb–Mar.

Rainy forests or thickets along stream banks; 1800–2400 m. SE Xizang (Myanmar border) [NE Myanmar].

The type specimen (Kingdon Ward 9200, BM) was collected in

**4. *Rhododendron* subsect. *Falconera*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74. 549. 1949.

杯毛杜鹃亚组 bei mao du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* ser. *Falconera* Tagg in J. B. Stevenson, Sp. Rhodod. 235. 1930 [*“Falconeri”*].

Shrubs or small trees, 3–10 m tall; young shoots stout, mostly ± tomentose, usually glabrescent. Leaf blade large, leathery, ovate to obovate-elliptic; abaxial surface with whitish, brownish or rufous 1- to 2-layered indumentum, the upper layer usually cup-shaped, the lower layer (when present) thin, sometimes compacted; adaxial surface glabrous. Inflorescence a racemose umbel, 12–20(–30)-

the Adung Valley in NE Myanmar. As this locality is almost on the border with Xizang, this species is almost certain to occur in China too.

**244. *Rhododendron praestans*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 263. 1916.

优秀杜鹃 you xiu du juan

*Rhododendron coryphaeum* I. B. Balfour & Forrest; *R. semnum* I. B. Balfour & Forrest.

Shrubs or trees, 3–7 m tall; young shoots 8–10 mm in diam., densely gray floccose-tomentose. Petiole stout, flattened and broadly winged, 1.5–2.5 cm, sparsely gray tomentose or glabrescent; leaf blade leathery, oblong-lanceolate to oblong-ovate, broadest near apex of blade, 15–38 × 6–14 cm; base cuneate with broad wings decurrent down petiole; apex rounded, sometimes emarginate; abaxial surface silvery-gray to buff, indumentum thin, compacted and agglutinated; adaxial surface glabrous; midrib and veins prominent abaxially. Inflorescence racemose-umbellate, 12–20-flowered; rachis 25–35 mm. Pedicel ca. 3.5 cm, floccose-tomentose; calyx lobes 7(or 8), 1.5–2.5 mm, tomentose; corolla obliquely campanulate, pale yellow, white flushed pink or pink, with crimson spots and basal blotch inside, 3.5–4.5 × ca. 5 cm wide, lobes 7(–8); stamens 14–16, unequal, filaments glabrous; ovary 8–10 mm, densely buff-tomentose; style ca. 2.6 cm, glabrous, stigma discoid. Peduncle 4.5–5 cm. Capsule oblong-cylindric, base strongly oblique, 30–40 × 6–10 mm, rusty-tomentose. Fl. May–Jun, fr. Aug–Oct.

- Mixed forests, coniferous forests in alpine regions; 3100–4200 m. SE Xizang, NW Yunnan.

**245. *Rhododendron watsonii*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 112. 1910.

无柄杜鹃 wu bing du juan

Shrubs or small trees, 1.5–6 m tall; young shoots slightly gray-brown tomentose. Leaf blade leathery, oblong-elliptic to broadly oblanceolate or obovate, 10–33 × 4–10 cm; base rounded, with broad wings decurrent into petiole; apex acute; abaxial surface silvery-white to brownish, indumentum thin, compacted and agglutinated; adaxial surface glabrous. Inflorescence a lax short racemose umbel, 12–15-flowered; rachis ca. 10 mm, gray-white pubescent. Pedicel 1.5–3 cm, sparsely floccose, glabrescent; calyx irregular; lobes 7, 1–2 mm; corolla broadly campanulate, white slightly pink tinged with crimson blotch at base, 3.5–4 cm, lobes 7; stamens 14, unequal, filaments puberulent in lower part; ovary glabrous; style ± as long as corolla, glabrous, stigma capitate. Capsule oblong-cylindric, slightly curved, 3–4 × 5–7 mm. Fl. May–Jun, fr. Jul–Sep.

- Open forests; 2500–3000 m. S Gansu, W Sichuan.

flowered. Calyx minute, 1–3 mm; corolla tubular, funnellform to ventricose or obliquely campanulate, (5–)7–8-lobed, white, pale yellow or pink, less often magenta to purple, usually with crimson basal blotch; stamens (10–)12–18; ovary tomentose, glandular or glabrous (*R. galactinum*). Capsule cylindric.

Eleven species: Bhutan, China, India, Myanmar, Nepal, Sikkim, Vietnam; ten species (four endemic) in China.

- 1a. Petiole flattened, winged.
  - 2a. Leaf base narrow, cuneate, abaxial surface with agglutinated, patchy indumentum ..... 246. *R. rothschildii*
  - 2b. Leaf base subcordate, abaxial surface with indumentum not agglutinated.
    - 3a. Inflorescence rachis stout, 3.5–5.5 cm; corolla yellow ..... 248. *R. basilicum*
    - 3b. Inflorescence rachis 2–3 cm; corolla pink or white ..... 247. *R. semnoides*
- 1b. Petiole terete, not winged.
  - 4a. Ovary glabrous ..... 252. *R. galactinum*
  - 4b. Ovary densely tomentose.
    - 5a. Abaxial leaf surface with thin silver-gray or brownish indumentum; corolla pink or rose-purple ..... 254. *R. hodgsonii*
    - 5b. Abaxial leaf surface with dense grayish or brown indumentum; corolla yellowish or white to pink.
      - 6a. Leaf blade obovate or obovate-elliptic, abaxial surface with rufous brown indumentum.
        - 7a. Leaf blade 6–13 cm wide, abaxial cup-shaped hairs wide with shallowly fimbriate margin ..... 249. *R. rex*
        - 7b. Leaf blade 4–8 cm wide, abaxial cup-shaped hairs narrow with deeply fimbriate margin ..... 250. *R. arizelum*
      - 6b. Leaf blade elliptic or oblong-elliptic, abaxial surface with whitish to mid brown indumentum.
        - 8a. Leaf blade 11–16 cm wide, abaxial surface with dense pale gray-brown soft and spongy indumentum ..... 255. *R. sinofalconeri*
        - 8b. Leaf blade 4–13 cm wide, abaxial surface with brownish indumentum; the upper layer loose.
          - 9a. Corolla creamy yellow, 6–7-lobed, abaxial leaf surface with cup-shaped hairs deeply fimbriate ..... 251. *R. preptum*
          - 9b. Corolla pink or white, 5–8-lobed; abaxial leaf surface with cup-shaped hairs entire or moderately fimbriate.
            - 10a. Leaf blade 6–13 cm wide, abaxial surface with thick indumentum, cup-shaped hairs fimbriate; corolla 7–8-lobed ..... 249. *R. rex*
            - 10b. Leaf blade 4–7 cm wide, abaxial surface with thin indumentum, cup-shaped hairs not fimbriate; corolla 5–7-lobed ..... 253. *R. coriaceum*

**246. *Rhododendron rothschildii*** Davidian, *Rhododendrons* (London) 1972: 50. 1972.

宽柄杜鹃 kuan bing du juan

Shrubs or small trees, 5–6 m tall, branches stout, rough, 10–15 mm in diam. below inflorescence, usually gray-brown tomentose. Petiole flattened, winged, 10–20 mm; leaf blade leathery, obovate-elliptic or obovate-lanceolate, 20–28 × 7–14 cm; base cuneate, decurrent to winged; apex obtuse, apiculate; abaxial surface with brownish, 2-layered, indumentum, upper layer agglutinated, patchy, hairs cup-shaped, lower layer grayish, thin and compacted; adaxial surface green, glabrous, midrib and lateral veins raised abaxially, flat adaxially; lateral veins 12–17-paired. Inflorescence 12–17-flowered; rachis stout, 15–20 mm, tomentose. Pedicel ca. 3 cm, brownish tomentose; calyx ca. 1 mm, tomentose; corolla obliquely campanulate, pale yellow, with a purple basal blotch, 3.5–4.5 cm; lobes 8, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 16, 1.5–2.5 cm, filaments pubescent at base; ovary ovoid, ca. 10 × 5–7 mm, densely tomentose; style ca. 3.5 cm, glabrous. Capsule curved, ca. 25 × 10 mm.

• Mixed forests; 3700–4000 m. NW Yunnan.

**247. *Rhododendron semnoides*** Tagg & Forrest, *Notes Roy. Bot. Gard. Edinburgh* 15: 116. 1926.

圆头杜鹃 yuan tou du juan

Small trees or shrubs; branches stout, 8–10 mm in diam.

below inflorescence, grayish tomentose. Petiole flattened and winged, 10–15 mm, tomentose; leaf blade leathery, obovate-elliptic or narrowly oblanceolate, broadest above middle, 17–24 × 5–9.5 cm; base cuneate, decurrent; apex rounded, apiculate; abaxial surface with whitish to buff, 2-layered indumentum, upper layer of narrowly cup-shaped hairs, lower layer compacted and thin; adaxial surface green, glabrous; midrib flat or grooved adaxially; lateral veins 13–15-paired. Inflorescence racemose-umbellate, 15–20-flowered; rachis stout, 20–30 mm, tomentose. Pedicel 3–4 cm, brown tomentose; calyx lobes 8, 1–2 mm, triangular; corolla obliquely campanulate, white to pink, with a purple basal blotch, 4.5–5 cm, lobes 8, suborbicular, ca. 1 × 1.5 cm, emarginate; stamens 16, 2–3 cm, filaments puberulous at base; ovary conoid, ca. 10 × 6 mm, densely brownish tomentose; style ca. 2.5 cm, glabrous. Capsule 25–35 × ca. 10 mm, densely tomentose. Fl. May–Jun, fr. Sep–Oct.

• *Pinus* or *Rhododendron* forests; 3500–3900 m. SE Xizang, NW Yunnan.

**248. *Rhododendron basilicum*** I. B. Balfour & W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 9: 214. 1916.

粗枝杜鹃 cu zhi du juan

*Rhododendron megaphyllum* I. B. Balfour & Forrest; *R. regale* I. B. Balfour & Kingdon Ward.

Shrubs or small trees, 3–10 m tall; branchlets stout, usually 8–15 mm in diam., grayish or whitish tomentose, glabrescent. Petiole flattened, winged, 15–35 mm, glabrescent; leaf

blade leathery, broadly obovate to oblanceolate, broadest above middle, 10–32 × 5–17 cm; base cuneate; apex rounded, apiculate; abaxial surface with 2-layered indumentum, upper thick, grayish or rufous, hairs broadly cup-shaped, hardly fimbriate, lower layer compacted and thin; adaxial surface green, glabrous, midrib prominent abaxially, plane or impressed adaxially; lateral veins 12–15-paired, prominent abaxially. Inflorescence 15–25-flowered, rachis stout, 35–55 mm, sparsely tomentose. Pedicel 2.5–5 cm, brownish tomentose; calyx teeth 7 or 8, small, tomentose; corolla obliquely campanulate, pale yellow, with crimson basal blotch, 3.5–4.5 cm, lobes 8, suborbicular, ca. 1 × 1.2 cm, emarginate. Stamens 16, 1.5–2.5 cm; filaments glabrous; ovary ovoid, 8–10 mm, brown tomentose; style 2.5–3.5 cm, glabrous, stigma a swollen disk. Capsule cylindrical, 25–40 × 8–10 mm, densely rufous-tomentose. Fl. May–Jun, fr. Oct–Nov.

Mixed or *Abies* forests; 2400–3700 m. W Yunnan [NE Myanmar].

**249. *Rhododendron rex*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 340. 1914.

大王杜鹃 da wang du juan

Small trees, usually 5–7 m tall, branchlets stout, 10–15 mm in diam. below inflorescence; young shoots grayish tomentose, glabrescent. Petiole terete, 25–30 mm, densely grayish tomentose; leaf blade leathery, obovate-elliptic to elliptic, 17–27 × 4–13 cm; base cuneate; apex obtuse; abaxial surface with persistent, 2-layered indumentum, upper layer fawn to rufous, hairs cup-shaped, only slightly fimbriate, lower layer thin, appressed; adaxial surface green, glabrous, midrib prominent abaxially, grooved adaxially, lateral veins 20–24-paired, regular, prominent abaxially. Inflorescence 15–20(–30)-flowered; rachis 20–25 mm. Pedicel sparsely pale brown-tomentose; calyx teeth 8, 1–2 mm; corolla obliquely campanulate, creamy-white, pale yellow to pink, with a crimson basal blotch, ca. 5 cm, lobes 8, suborbicular, ca. 1.5 cm; stamens 16, 2–3.5 cm, filaments pubescent at base; ovary conoid, ca. 12 mm, pale brown tomentose; style ca. 4 cm, glabrous, stigma swollen. Capsule curved, 25–40 × 6–10 mm, densely tomentose. Fl. May–Jun, fr. Aug–Sep.

*Pinus* forests, *Rhododendron* thickets; 2300–4000 m. SW Sichuan, SE Xizang, N and W Yunnan [NE Myanmar].

- 1a. Leaves smaller, indumentum discontinuous, sometimes quickly lost ..... 249b. subsp. *gratum*
- 1b. Leaves larger, indumentum persistent.
  - 2a. Leaf blade usually obovate, with grayish or brownish indumentum .... 249a. subsp. *rex*
  - 2b. Leaf blade usually elliptic, with rufous brown indumentum ..... 249c. subsp. *fictolacteum*

**249a. *Rhododendron rex*** subsp. **rex**

大王杜鹃(原亚种) da wang du juan (yuan ya zhong)

Leaf blade usually large and broad, obovate; abaxial surface indumentum persistent, pale brown or gray. Fl. May–Jun, fr. Aug–Sep.

• Forests; 2300–3300 m. SW Sichuan, N Yunnan.

**249b. *Rhododendron rex*** subsp. **gratum** (T. L. Ming) M. Y. Fang, Bull. Bot. Res., Harbin 12: 216. 1992.

可爱杜鹃 ke ai du juan

*Rhododendron gratum* T. L. Ming, Acta Bot. Yunnan. 3: 118. 1981.

Leaf blade usually elliptic; abaxial surface indumentum usually discontinuous, transparent or translucent, sometimes quickly lost. Corolla without color flecks. Fl. Apr–May.

• *Rhododendron* thickets; ca. 3200 m. W Yunnan.

Field observations at the type locality suggest that subsp. *gratum* is a form of *Rhododendron basilicum* with only slightly winged petioles; this fits reasonably well with the distribution of the latter species.

**249c. *Rhododendron rex*** subsp. **fictolacteum** (I. B. Balfour) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 330. 1979.

假乳黄叶杜鹃 jia ru huang ye du juan

*Rhododendron fictolacteum* I. B. Balfour, Gard. Chron., ser. 3, 59: 168. 1916; *R. fictolacteum* var. *miniforme* Davidian; *R. lacteum* Franchet var. *macrophyllum* Franchet.

Leaf blade narrow, elliptic or obovate-elliptic to oblanceolate, 4–8 cm wide; abaxial surface indumentum persistent, rufous to brown. Fl. Apr–Jun, fr. Sep–Oct.

*Pinus* forests, *Rhododendron* thickets; 2900–4000 m. SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**250. *Rhododendron arizelum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 90. 1920.

夺目杜鹃 duo mu du juan

*Rhododendron rex* H. Léveillé subsp. *arizelum* (I. B. Balfour & Forrest) D. F. Chamberlain.

Shrubs or small trees, 3–7 m tall; branchlets stout, rough, usually ca. 10 mm in diam.; young shoots pale brown tomentose, glabrescent. Petiole terete, 20–30 mm, tomentose, glabrescent; leaf blade leathery, obovate or obovate-elliptic, broadest above middle of blade, 9–19 × 4–8 cm; base cuneate; apex rounded, emarginate; abaxial surface with pale brown or rufous, 2-layered indumentum, upper layer brown, hairs narrowly cup-shaped, strongly fimbriate, lower layer thin, compacted, gray; adaxial surface deep green, glabrous, midrib prominent abaxially, flat or slightly impressed adaxially, lateral veins 10–13-paired, prominent abaxially. Inflorescence 15–20-flowered; rachis 15–25 mm, densely tomentose. Pedicel 1.2–2 cm, densely tomentose; calyx oblique; teeth 8, ca. 1 mm; corolla campanulate, white, pale yellow or pink, with crimson basal blotch, 3.5–4.5 cm, lobes 8, suborbicular, ca. 1 × 1.5 cm, emarginate; stamens 16, 1.5–2.5 cm, filaments glabrous or puberulent at base; ovary terete, densely tomentose; style glabrous. Capsule 30–40 × ca. 10 mm, tomentose. Fl. May–Jun, fr. Aug–Sep.

*Pinus* forests, *Rhododendron* thickets; 2500–4000 m. SE Xizang, W Yunnan [NE Myanmar].

*Rhododendron arizelum* var. *rubicosum* Cowan & Davidian (Rhododendron Year book 8: 79. 1953), described from NW Yunnan, is a rich red- to purple-flowered form, which may be intermediate between *R. arizelum* and *R. rex* subsp. *fictolacteum*.

**251. *Rhododendron preptum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 149. 1920.

复毛杜鹃 fu mao du juan

Shrubs or small trees, 5–7 m tall; older branches glabrous; branchlets stout, usually 8–10 mm in diam.; young shoots grayish to brownish tomentose. Petiole terete, 15–20 mm, tomentose, glabrescent; leaf blade leathery, obovate-elliptic, 11–16 × 4–7 cm; base cuneate; apex obtuse or rounded, apiculate; abaxial surface with pale brown, 2-layered indumentum, upper layer of cup-shaped slightly fimbriate hairs, lower layer thin, compacted; adaxial surface glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 13–15-paired, prominent abaxially. Inflorescence ca. 20-flowered; rachis stout, ca. 20 mm, slightly tomentose. Pedicel ca. 2 cm, brown-tomentose; calyx saucer-shaped; teeth short, ca. 1 mm, with similar hairs; corolla obliquely campanulate, white (in cultivation) or perhaps creamy-white, with crimson basal blotch, ca. 3.5 cm, lobes 8, orbicular, ca. 1 × 1.5 cm; stamens 16, 1.5–2.5 cm, filaments pubescent at base; ovary conoid, ca. 7 mm, densely brown-tomentose; style ca. 2.5 cm, glabrous, stigma swollen. Capsule not known. Fl. May.

Mixed forests, *Rhododendron* thickets; 3200–3300 m. SW Yunnan [NE Myanmar].

*Rhododendron preptum* is a doubtful species and may be a hybrid of *R. arizelum* and/or *R. coriaceum*. It is known only from two wild-collected specimens.

**252. *Rhododendron galactinum*** I. B. Balfour ex Tagg, Notes Roy. Bot. Gard. Edinburgh 15: 103. 1926.

乳黄叶杜鹃 ru huang ye du juan

Shrubs or small trees, 5–8 m tall; older branches smooth, glabrous; young shoots grayish tomentose, glabrescent. Petiole terete, 25–30 mm, tomentose, glabrescent; leaf blade thick, leathery, oblong-elliptic, oblong-obovate or broadly lanceolate, broadest above middle of blade, 11–22 × 5–7 cm; base broadly cuneate or rounded; apex obtuse; abaxial surface with dense, brown, 2-layered, indumentum, upper layer of narrowly cup-shaped strongly fimbriate hairs, lower layer whitish and compacted; adaxial surface deep green, glabrous, midrib plane adaxially; lateral veins 18–19-paired, impressed adaxially. Inflorescence ca. 15-flowered; rachis pubescent. Pedicel 3–3.5 cm, sparsely tomentose; calyx teeth 7, ca. 1 mm; corolla campanulate, pale rose, with a crimson basal blotch, ca. 3 cm, lobes 7, suborbicular, ca. 1 cm; stamens 14, 1–2.2 cm, filaments pubescent at base; ovary conoid, 5–6 × 2–3 mm, glabrous; style slender, 3–3.5 cm, glabrous. Capsule not known. Fl. May–Jun.

• Thickets, mountain slopes, stream banks; 2900–3500 m. W Sichuan.

*Rhododendron peregrinum* Tagg (Notes Roy. Bot. Gard. Edinburgh 16: 202. 1931), which is unknown in the wild, is almost certainly a hybrid of *R. galactinum*.

**253. *Rhododendron coriaceum*** Franchet, J. Bot. (Morot) 12: 258. 1898.

革叶杜鹃 ge ye du juan

*Rhododendron foveolatum* Rehder & E. H. Wilson.

Small trees or shrubs, 3–10 m tall; older branches rough, glabrous; branchlets stout, usually ca. 10 mm in diam., grayish white tomentose. Petiole terete, 20–30 mm, sparsely tomentose; leaf blade leathery, obovate-elliptic to oblanceolate, broadest above middle of blade, 9–19 × 4–8 cm; base cuneate; apex obtuse or rounded, apiculate; abaxial surface foveolate, with dense, 2-layered, indumentum, upper layer of broadly cup-shaped non-fimbriate hairs, lower layer compacted; adaxial surface green, glabrous, midrib plane or slightly grooved adaxially; lateral veins 10–13-paired, obscure adaxially. Inflorescence racemose-umbellate, 8–16-flowered; rachis 10–15 mm, tomentose. Pedicel stout, 2–3 cm, sparsely tomentose; calyx ca. 1 mm; corolla funnel-campanulate, white or white-flushed rose, with a crimson basal blotch, 3–3.5 cm, lobes (5–)7; stamens 14, 1–2 cm, unequal, filaments pubescent at base; ovary ovoid, ca. 8 × 4 mm, densely rufous-tomentose. Capsule curved, 25–35 mm. Fl. May, fr. Jul–Sep.

• *Rhododendron* forests, thickets; 2900–3400 m. SE Xizang, NW Yunnan.

**254. *Rhododendron hodgsonii*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 2: t. 15. 1851 [“*hodgsoni*”].

多裂杜鹃 duo lie du juan

Shrubs or small trees, 3–7 m tall; branchlets stout, 10–15 mm in diam. below inflorescence, grayish tomentose when young, glabrescent. Petiole terete, 40–50 mm, tomentose when young, glabrescent; leaf blade leathery, oblong-elliptic to oblanceolate, 16–30 × 5–12 cm; base broadly cuneate to rounded; apex obtuse or rounded, sometimes emarginate; abaxial surface with pale brown, 2-layered, indumentum, upper layer of broadly cup-shaped slightly fimbriate hairs, lower layer thin, compacted; adaxial surface rugose, glabrous; midrib raised abaxially, grooved adaxially; lateral nerves 14–16 on each side, raised abaxially. Inflorescence 15–20-flowered; rachis 20–50 mm, puberulent. Pedicel slender, 2–4 cm, tomentose; calyx teeth 7, minute; corolla tubular-campanulate, magenta to purple, with darker basal blotch, 3.5–4 cm, lobes 7 or 8, suborbicular, ca. 1 × 1.3–1.5 cm, emarginate; stamens 15–18, 2.5–3.5 cm, filaments glabrous; ovary conoid, ca. 10 mm, tomentose; style 2–2.5 cm, glabrous. Capsule curved, 30–40 × ca. 7 mm, tomentose. Fl. May–Jun, fr. Aug–Sep.

*Abies* forests, thickets; 3500–4000 m. S Xizang [Bhutan, N India, Nepal, Sikkim].

**255. *Rhododendron sinofalconeri*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 9: 272. 1916.

宽杯杜鹃 kuan bei du juan

Shrubs or small trees, 3–10 m tall; branchlets stout, 8–12 mm, grayish tomentose when young, glabrescent. Petiole terete, 15–25 mm, sparsely tomentose; leaf blade thick, leathery, oblong-elliptic, broadest above middle of blade, 17–32 × 11–16

cm; base wide, cuneate or rounded; apex obtuse; abaxial surface with soft and spongy, 2-layered indumentum, pale cinnamon, upper layer of broad cup-shaped fimbriate hairs, lower layer thin, compacted; adaxial surface green, glabrous; midrib prominent abaxially, flat adaxially; lateral veins 16–19-paired, prominent abaxially. Inflorescence 15–20-flowered; rachis ca. 35 mm, tomentose. Pedicel 2–3 cm, with similar hairs; calyx

teeth 6–8, 1–2 mm, tomentose; corolla obliquely campanulate, pale yellow, 3.5–5 cm, lobes 8, suborbicular, ca. 1 × 1.5 cm; stamens 16, 1–3 cm, filaments pubescent at base; ovary terete, 8–10 mm, densely fulvous woolly-tomentose; style ca. 2.5 cm, glabrous. Capsule 30–40 mm, tomentose. Fl. Mar–Apr, fr. Oct.

Mixed forests, thickets; 1600–2500 m. S Yunnan [N Vietnam].

**5. *Rhododendron* subsect. *Williamsiana*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 478. 1982.

圆叶杜鹃亚组 *yuan ye du juan ya zu*

Fang Mingyuan (方明渊); David F. Chamberlain

Small shrubs, short; bark smooth; young shoots long-glandular-hairy. Leaf blade leathery, broadly ovate or suborbicular; abaxial surface sparsely setose on midrib; adaxial surface glabrous. Inflorescences short, 2–5-flowered; pedicels stout; calyx small; corolla broadly campanulate, 5–6-lobed, pinkish or purplish red; stamens 10–12(–14); filaments glabrous or hairy; ovary ovate, setose and glandular-hairy; style smooth or glandular.

• Two species: China.

1a. Young branches with a few long glandular hairs; leaf blade broadly ovate or suborbicular; petiole and pedicels sparsely long glandular-hairy; corolla pinkish, 5- or 6-lobed; ovary glandular-hairy; style glandular ..... 256. *R. williamsianum*

1b. Young branches setose; leaf blade elliptic or obovate; petiole and pedicels densely setose; corolla purplish red, 5-lobed; ovary setulose, with curved hairs; style glabrous ..... 257. *R. leishanicum*

**256. *Rhododendron williamsianum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 538. 1913.

圆叶杜鹃 *yuan ye du juan*

Shrubs, 1–2 m tall; older shoots brownish, glabrous; branches slender, 3–5 mm in diam.; young shoots greenish or purplish, with a few glands. Petiole rounded abaxially, flat adaxially, 10–15 mm, sparsely glandular-hairy; leaf blade leathery, broadly ovate or suborbicular, 2.5–5 × 2–4 cm; base cordate or subrounded; apex rounded, with a small cusp; abaxial surface grayish white, with small projections; adaxial surface deep green, glabrous; midrib and lateral veins raised on both surfaces; lateral veins 11–12-paired, veinlets reticulate, obvious abaxially. Inflorescence racemose-umbellate, 2–6-flowered; rachis 5–8 mm, sparsely glandular. Pedicel 2–3 cm, stout, with long-glandular hairs; calyx discoid; lobes 6, 1–2 mm, broadly triangular, outer surface and margin shortly glandular-hairy; corolla broadly campanulate, reddish, 3.5–4 × 4–4.5 cm; lobes 5 or 6, suborbicular, 1–1.5 × ca. 2 cm, emarginate; stamens 10–12(–14), unequal, 1.8–3 cm, filaments glabrous, anthers ovate, deep purple-red; ovary ovate, ca. 5 mm, glandular; style ca. 3.5 cm, nearly equal to corolla, usually glandular, stigma capitate. Capsule cylindrical, 15–25 × ca. 6 mm, glandular. Fl. Apr–May, fr. Aug–Sep.

• Open forests on mountain slopes, rocks; 1800–2800 m. W Guizhou, SW Sichuan, SE Xizang, NE Yunnan.

**257. *Rhododendron leishanicum*** W. P. Fang & X. S. Zhang, Acta Phytotax. Sin. 21: 468. 1983.

雷山杜鹃 *lei shan du juan*

Shrubs, ca. 3 m tall; bark gray, dehiscent on drying; branchlets terete, 3–4 mm in diam., setose when young, gradually glabrescent; bud scales membranous, long-ovate, 1–1.5 × 0.5–0.7 cm, apex rounded or with short cusp, with yellowish hairs on outer surface, inner surface glabrous. Petiole rounded abaxially, furrowed adaxially, 5–12 mm, densely setose; leaf blade thickly leathery, elliptic or obovate, 4–6 × 2.5–3 cm; base rounded or subcordate; apex rounded; abaxial surface deep green, with small projections, glabrous or sometimes sparsely hairy on midrib; adaxial surface flat, sparsely glandular; midrib impressed abaxially, lateral veins 11–15-paired, inconspicuous on both sides. Inflorescence racemose-umbellate, 3–5-flowered; rachis 5–7 mm, tomentose. Pedicel ca. 1 cm, densely setose-tomentose; calyx discoid; lobes 5, ca. 2 mm; corolla campanulate, purple-red, with deep purple-red spots, 3–3.5 cm, lobes 5, suborbicular, ca. 1.5 cm; apex emarginate; stamens 10, unequal, 1–2 cm, filaments broader and glabrous at base; ovary cone-shaped, ca. 5 mm, densely setose and tomentose; style 2.5–3 cm, glabrous, stigma slightly expanded. Capsule not known. Fl. Apr.

• Mixed forests, mountain slopes; 1800–1900 m. E Guizhou.

**6. *Rhododendron* subsect. *Campylocarpa*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 547. 1949.

弯果杜鹃亚组 *wan guo du juan ya zu*

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Campylocarpa* Tagg in J. B. Stevenson, Sp. Rhodod. 698. 1930 [*“Campylocarpum”*].

Shrubs; young shoots glabrous or glandular-hairy. Leaf blade leathery, elliptic, ovate to suborbicular; base shallowly cordate or rounded, apex obtuse, with small cusp; both surfaces glabrous. Inflorescences sparse, 5–15-flowered. Calyx large or small; corolla funnellform-campanulate, broadly campanulate, cup-shaped or saucer-shaped, 5-lobed, yellow, pinkish or white, without nectar

pouches; stamens 10; ovary densely glandular; style glandular or glabrous. Capsule slender and long, curved.

Six species: Bhutan, China, India, Myanmar, Nepal, Sikkim; six species (four endemic) in China.

- 1a. Corolla cup- or saucer-shaped; style glandular to tip.  
 2a. Corolla cup-shaped, bright yellow or pure white, 4–5 cm wide; petiole glabrous ..... 260. *R. wardii*  
 2b. Corolla bowl- or saucer-shaped, white or pinkish, 5–6 cm wide; petiole glandular when young ..... 261. *R. souliei*  
 1b. Corolla broadly campanulate or funnellform-campanulate; style without glands or with glands only at base.  
 3a. Calyx 5–10 mm; corolla 4–4.5 cm; petiole 3–4 cm ..... 262. *R. longicalyx*  
 3b. Calyx 1–3 mm; corolla 2.5–3 cm; petiole 1–2.5 cm.  
 4a. Inflorescence 12–13-flowered, rachis 10–15 mm, hairy ..... 263. *R. henanense*  
 4b. Inflorescence 5–7-flowered, rachis 2–7 mm, without hairs, sometimes glandular.  
 5a. Leaf blade broadly ovate or suborbicular; corolla white or pink; ovary 10–15 mm ..... 258. *R. callimorphum*  
 5b. Leaf blade elliptic or oblong-elliptic; corolla clear yellow; ovary 5–7 mm ..... 259. *R. campylocarpum*

**258. *Rhododendron callimorphum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 89. 1917.

卵叶杜鹃 luan ye du juan

Shrubs, ca. 3 m tall; older shoots grayish white, bark flaking; young shoots with short glandular hairs, smooth later. Petiole terete, 10–25 mm, sparsely glandular; leaf blade leathery to thickly leathery, broadly ovate or suborbicular, 4–7 × 3–4 cm; base truncate or subcordate; apex rounded, apiculate; abaxial surface greenish, glabrous; adaxial surface dark green, glabrous; midrib raised abaxially, impressed adaxially; lateral veins 9–14-paired, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 5–7-flowered; rachis 2–5 mm, glandular. Pedicel 1–2.5 cm, densely glandular; calyx lobes 5, 1–3 mm, ovate or triangular, margin glandular; corolla funnellform-campanulate, white or pink, 3–4 cm, lobes 5, suborbicular, 1–1.5 × 1.5–2 cm, apex emarginate; stamens 10, unequal, 1.5–2.5 cm; filaments slender, glabrous; anthers ovate, ca. 2 mm; ovary cylindrical, 5-lobed at maturity, 10–15 mm, glands persistent; style 1.5–2 cm. Fl. May–Jun, fr. Aug–Sep.

Thickets, mountain slopes; 3000–4000 m. W Yunnan [NE Myanmar].

- 1a. Leaf blade leathery; corolla pink ..... 258a. var. *callimorphum*  
 1b. Leaf blade thickly leathery; corolla white ..... 258b. var. *myiagram*

**258a. *Rhododendron callimorphum* var. *callimorphum***

卵叶杜鹃(原变种) luan ye du juan (yuan bian zhong)

*Rhododendron cyclium* I. B. Balfour & Forrest.

Leaf blade leathery. Corolla pink.

• Thickets, mountain slopes; 3000–4000 m. W Yunnan.

**258b. *Rhododendron callimorphum* var. *myiagram*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 116. 1978.

白花卵叶杜鹃 bai hua luan ye du juan

*Rhododendron myiagram* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 52. 1920.

Leaf blade thickly leathery. Corolla white.

Thickets; ca. 3000 m. NW Yunnan [NE Myanmar].

**259. *Rhododendron campylocarpum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 30. 1851.

弯果杜鹃 wan guo du juan

Shrubs 2–3 m tall; old branches grayish white, bark flaking; young shoots greenish. Petiole terete, furrowed above, 15–20 mm, sparsely long-glandular-hairy; leaf blade leathery, suborbicular or ovate-elliptic to oblong-elliptic, 4–8.5 × 2.5–4 cm; base subcordate or subrounded; margin slightly reflexed; apex rounded, apiculate; abaxial surface greenish; adaxial surface green, slightly shiny; midrib prominently raised abaxially, impressed adaxially; lateral veins 9–14-paired, inconspicuous on both surfaces. Inflorescence terminal, umbellate, 6- or 7-flowered, rachis short, conical, ca. 7 mm, glabrous. Pedicel slender, 1.5–2.5 cm, sparsely long-glandular-hairy; calyx lobes 5, 1–2 mm, outside and margin with short glandular hairs; corolla campanulate, bright yellow, 3–4 × ca. 4 cm; lobes 5, suborbicular, ca. 1.5 × 2 cm, apex emarginate; stamens 10, unequal, 1.2–2.5 cm, filaments entirely glabrous or pubescent only at base, anthers oblong, brownish yellow, ca. 3 mm; ovary columnar-conical, 5–7 mm, sparsely shortly glandular-hairy; style ca. 2 cm, base glandular, otherwise glabrous, stigma slightly expanded. Capsule slender, curved, 25–30 × ca. 4 mm, glands persistent. Fl. May–Jun, fr. Aug–Oct.

*Abies* forests, open forests, *Rhododendron* scrub, mountain slopes; 3000–4000 m. E and S Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

- 1a. Leaf blade ovate-elliptic to oblong-elliptic, 6–8.5 × 2.5–3.5 cm; filaments pubescent at base ..... 259a. subsp. *campylocarpum*  
 1b. Leaf blade suborbicular, 4–6 × 3.5–4 cm; filaments usually entirely glabrous ..... 259b. subsp. *caloxanthum*

**259a. *Rhododendron campylocarpum* subsp. *campylocarpum***

弯果杜鹃(原亚种) wan guo du juan (yuan ya zhong)

Leaf blade ovate-elliptic to oblong-elliptic, 6–8.5 × 2.5–3.5 cm. Filaments pubescent at base. Fl. May–Jun, fr. Aug–Sep.

*Abies* forests, open forests; 3000–4000 m. E and S Xizang [Bhutan, NE India, Nepal, Sikkim].

**259b. *Rhododendron campylocarpum* subsp. *caloxanthum*** (I. B. Balfour & Farrer) D. F. Chamberlain, Notes Roy. Bot.



Gard. Edinburgh 36: 116. 1978.

美丽弯果杜鹃 mei li wan guo du juan

*Rhododendron caloxanthum* I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 13: 238. 1922; *R. campylocarpum* var. *orbiculare* Demoly; *R. campylocarpum* subsp. *telopeum* (I. B. Balfour & Forrest) D. F. Chamberlain; *R. telopeum* I. B. Balfour & Forrest.

Leaf blade suborbicular, 4–6 × 3.5–4 cm. Filaments usually entirely glabrous. Fl. May–Jun, fr. Sep–Oct.

*Rhododendron* scrub, mountain slopes; 3000–3700 m. E Xizang, NW Yunnan [Myanmar].

**260. *Rhododendron wardii*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 205. 1914.

黄杯杜鹃 huang bei du juan

Shrubs ca. 3 m tall; old branches grayish white, bark sometimes flaking; young shoots greenish, glabrous. Petiole slender, furrowed above, 20–30 mm, glabrous; leaf blade leathery, narrowly ovate to oblong-elliptic or broadly ovate-elliptic, 5–8 × 3–4.5 cm; base subcordate; apex obtuse, apiculate; abaxial surface greenish or grayish green; adaxial surface deep green, midrib raised abaxially, flat or slightly concave adaxially; lateral veins 9–13-paired, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 5–8(–14)-flowered; rachis 5–15 mm, with short glandular hairs. Pedicel 2–4 cm, usually sparsely glandular; calyx membranous, lobes 5, 5–8(–12) × 3–5 mm, unequal, ovate or ovate-elliptic, margin densely glandular; corolla cup-shaped, bright yellow or pure white, 3–4 × 4–5 cm; lobes 5, suborbicular, ca. 1.5 cm, apex emarginate; stamens 10, unequal, 1–1.8 cm, filaments glabrous; anthers ovate, yellow, ca. 2 mm; ovary cone-shaped, ca. 5 mm, densely glandular; style 1.5–2 cm, usually glandular, stigma capitate. Capsule cylindrical, slightly curved, 20–25 × ca. 7 mm, glandular-hairy, calyx usually persistent, leaflike at maturity. Fl. Jun–Jul, fr. Aug–Sep.

• *Abies* forests, *Picea* forests, scrub, meadows, mountain slopes, open places; 3000–4600 m. SW Sichuan, SE Xizang, NW Yunnan.

1a. Leaf blade oblong-elliptic to broadly ovate-elliptic; corolla yellow ..... 260a. var. *wardii*

1b. Leaf blade narrowly ovate; corolla pure white ..... 260b. var. *puralbum*

**260a. *Rhododendron wardii* var. *wardii***

黄杯杜鹃(原变种) huang bei du juan (yuan bian zhong)

*Rhododendron astrocalyx* I. B. Balfour & Forrest; *R. croceum* I. B. Balfour & W. W. Smith; *R. gloeoblastum* I. B. Balfour & Forrest; *R. litiense* I. B. Balfour & Forrest; *R. oresterum* I. B. Balfour & Forrest; *R. prasinocalyx* I. B. Balfour & Forrest.

Leaf blade oblong-elliptic to broadly ovate-elliptic. Corolla bright yellow.

• *Abies* forests, *Picea* forests, mountain slopes, open places; 3000–4000 m. SW Sichuan, SE Xizang, NW Yunnan.

Among the yellow-flowered forms of this species, the specimens from around “Li-ti-ping” in NW Yunnan have characteristically narrow

leaves, which have a marked glaucous bloom as they flush. These forms have been referred to *Rhododendron litiense*, a taxon recognized by some as distinct. There is, however, considerable overlap between *R. wardii sensu stricto* and *R. litiense*.

**260b. *Rhododendron wardii* var. *puralbum*** (I. B. Balfour & W. W. Smith) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 116. 1978.

纯白杜鹃 chun bai du juan

*Rhododendron puralbum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 266. 1916.

Leaf blade narrowly ovate. Corolla pure white. Fl. May–Jun.

• Scrub, meadows, mountain slopes; 3400–4600 m. SW Sichuan, NW Yunnan.

**261. *Rhododendron souliei*** Franchet, J. Bot. (Morot) 9: 393. 1895.

白碗杜鹃 bai wan du juan

*Rhododendron cordatum* H. Léveillé.

Shrubs, 1.5–2 m tall; old branches grayish white, glabrous, bark sometimes flaking; young shoots greenish, with sparse red glands. Petiole terete, deep purplish green, 10–25 mm, glandular-hairy when young, glabrescent; leaf blade leathery, ovate to oblong-elliptic, 3.5–7.5 × 2–4.5 cm; base subcordate or suborbicular; apex rounded, apiculate; abaxial surface greenish or grayish green; adaxial surface deep green; midrib raised abaxially, flat adaxially; lateral veins 10–14 pairs, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 5–7-flowered; rachis 5–10 mm, shortly glandular-hairy. Pedicel 1.5–3 cm, densely glandular; calyx membranous, lobes 5, 5–8 × 2–5 mm, unequal, ovate, outside sparsely glandular, margin shortly glandular-hairy; corolla campanulate, bowl-shaped or saucer-shaped, broad in the middle part, white or pink, 2.5–3.5 × 5–6 cm; lobes 5, suborbicular, ca. 1.5 × 2 cm, apex emarginate; stamens 10, unequal, 0.8–1.5 cm, filaments white, glabrous, anthers oblong, deep purplish red, 3–4 mm; ovary cone-shaped, 4–5 mm, usually densely purplish red glandular; style 1.5–2 cm, stigma capitate. Capsule cylindrical, usually curved at maturity, 20–25 × 5–7 mm, glands persistent. Fl. Jun–Jul, fr. Aug–Sep.

• *Abies* forests, scrub, mountain slopes; 3000–3800 m. SW Sichuan, E Xizang.

**262. *Rhododendron longicalyx*** M. Y. Fang, Acta Phytotax. Sin. 26: 67. 1988.

长萼杜鹃 chang e du juan

Shrubs or small trees, 2–3 m tall; old branches glabrous; branches stout, brownish; young shoots slightly pubescent. Petiole terete, 30–40 mm, glabrous; leaf blade leathery, ovate or broadly elliptic, 9–12 × 5–7 cm; base rounded, asymmetrical; apex obtuse or rounded, apiculate; both surfaces glabrous; abaxial surface slightly colored; adaxial surface deep green; midrib raised abaxially, shallowly impressed adaxially; lateral veins 13–17-paired, inconspicuous on both surfaces. Inflores-

cence racemose-umbellate, 9–13-flowered; rachis 10–15 mm, sparsely pubescent and with long glandular hairs. Pedicel stout, 2.5–4 cm, sparsely shortly glandular-hairy; calyx lobes 5, 5–10 mm, unequal, elliptic-lanceolate, abaxially densely glandular at base, sparsely so in the upper part, margin glandular; corolla campanulate, reddish, 4–4.5 cm, lobes 5, suborbicular, 1–1.5 cm, apex emarginate; stamens 10, unequal, 1.5–2.5 cm, filaments pubescent at base; anthers larger, purplish red, to 3 mm; ovary ovate, ca. 5 mm, densely shortly glandular-hairy; style ca. 3 cm, glabrous; stigma expanded. Capsule not seen. Fl. May.

- Scrub, streamsides; ca. 2900 m. W Sichuan.

**263. *Rhododendron henanense*** W. P. Fang, Acta Phytotax. Sin. 21: 457. 1983.

河南杜鹃 he nan du juan

Shrubs, 3–5 m tall; branches stout, greenish or brownish, ca. 5 mm in diam. below inflorescence, glabrous. Petiole slender, flat adaxially, rounded abaxially, 15–25 mm, glandular; leaf blade thinly leathery or leathery, elliptic to oblong-elliptic or obovate-elliptic, 5–9 × 2.5–5 cm; base subcordate or rounded; margin reflexed; apex rounded, apiculate; both surfaces glabrous; abaxial surface yellowish green; adaxial surface deep green; midrib slightly raised abaxially, slightly grooved adaxially; lateral veins 14–18-paired, inconspicuous abaxially, slightly prominent adaxially. Inflorescence racemose-umbellate, 12- or 13-flowered; rachis 15–20 mm, yellowish hairy. Pedicel ca. 2 cm, with branched setae; calyx lobes 5, ca. 1.5 mm, triangular, outer surface setose; corolla funnellform-campanulate, base nar-

row, white, with or without purplish red spots, 2.5–3 cm, lobes 5, suborbicular, ca. 1 × 1.5 cm, apex rounded; stamens 10, unequal, 1.5–2 cm, filaments pilose at base; ovary cone-shaped, ca. 6 mm, densely setose; style ca. 2 cm, glabrous; stigma slightly expanded. Capsule terete, usually curved, 15–20 × 5–6 mm. Fl. May-Jun.

- Mixed forests; 1800–1900 m. N and W Henan.

- 1a. Leaf blade elliptic to oblong-elliptic, leathery; corolla 2.5–3 cm, with purplish red spots ..... 263a. subsp. *henanense*
- 1b. Leaf blade elliptic or obovate-elliptic, subleathery; corolla ca. 2.5 cm, without spots ..... 263b. subsp. *lingbaoense*

**263a. *Rhododendron henanense*** subsp. *henanense*

河南杜鹃(原亚种) he nan du juan (yuan ya zhong)

Leaf blade leathery, elliptic to oblong-elliptic, 7–9 × 3–5 cm. Corolla with purplish red spots, 2.5–3 cm. Fl. May.

- Mixed forests; 1800–1900 m. N Henan.

**263b. *Rhododendron henanense*** subsp. *lingbaoense* W. P. Fang, Acta Phytotax. Sin. 21: 459. 1983.

灵宝杜鹃 ling bao du juan

Leaf blade thinly leathery, elliptic or obovate-elliptic, 5–9 × 2.5–4.5 cm. Corolla without dark spots, ca. 2.5 cm. Fl. Jun.

- W Henan.

**7. *Rhododendron*** subsect. *Maculifera* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 544. 1949.

麻花杜鹃亚组 ma hua du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Maculifera* Tagg in J. B. Stevenson, Sp. Rhodod. 144. 1930 [*“Maculiferum”*].

Shrubs or small trees; bark rough; young shoots tomentose, also with bristles or glandular-setae, bud scales often persistent. Leaf blade oblong-elliptic, oblong-lanceolate or oblanceolate; apex acute apiculate; abaxial surface with a persistent or evanescent stellate tomentum and bristles, more so on the midrib. Inflorescence lax, 5–20-flowered; rachis 2–20 mm. Calyx minute, 2 mm, (8–13 mm in *R. longesquamatum*); corolla widely or narrowly campanulate, funnel- or tubular-campanulate, 5-lobed, white, pink or deep red; stamens 10(12–14); ovary tomentose glandular-hairy, rarely glabrous.

- Thirteen species: China.

- 1a. Calyx 8–12 mm; young shoots with persistent bud scales, densely rufous-tomentose and with dendroid bristles ..... 264. *R. longesquamatum*
- 1b. Calyx 1–3 mm; young shoots without persistent bud scales, without dendroid bristles.
  - 2a. Inflorescence rachis 4–5 cm; leaf blade 12–15(–20) × 4–5(–7) cm ..... 266. *R. polytrichum*
  - 2b. Inflorescence rachis 0.5–2.5 cm; leaf blade 4–12(–16) × 1.2–4.2 cm.
    - 3a. Inflorescence 3–5-flowered; rachis 5–6 mm.
      - 4a. Style densely stipitate-glandular above, brown-lanate-tomentose below; corolla funnellform, ca. 4.2 cm ..... 275. *R. pilostylum*
      - 4b. Style glabrous; corolla campanulate, 3–3.5 cm.
        - 5a. Corolla purple to pink, with deep purple basal blotch, ca. 3.5 cm; leaf apex obtuse, apiculate ..... 271. *R. oligocarpum*
        - 5b. Corolla pale pink to white or creamy white with purple flecks, ca. 3 cm; leaf apex acute or acuminate, apiculate.
          - 6a. Petiole with verrucose spots; pedicel puberulent ..... 272. *R. ziyuanense*
          - 6b. Petiole sparsely floccose; pedicel glabrous ..... 270. *R. pachyphyllum*

- 3b. Inflorescence 5–20-flowered, if less than 7-flowered then rachis more than 10 mm.
  - 7a. Rachis ca. 6 mm; corolla crimson, without markings ..... 267. *R. ochraceum*
  - 7b. Rachis 10–20 mm; corolla white to pink, sometimes deep red, mostly with dark basal blotches and/or darker flecks.
    - 8a. Corolla tubular-campanulate, often deep red, less often red or white; abaxial leaf surface setose, setae glandular or branched at the tip, and persistent, especially near the base, sometimes restricted to midrib ..... 265. *R. strigillosum*
    - 8b. Corolla funnelform to campanulate or broadly campanulate, white to pink; abaxial leaf surface tomentose or floccose at least along midrib.
      - 9a. Corolla funnelform, lobes ca. 2 × 2.3 cm; stamens 10–14, 3.7–4.8 cm ..... 276. *R. morii*
      - 9b. Corolla campanulate or broadly campanulate, lobes 1–1.5 × 1.2–2 cm.
        - 10a. Ovary pale brown or rufous tomentose or glabrous.
          - 11a. Corolla campanulate; young shoots densely floccose-tomentose or setose ..... 268. *R. pachytrichum*
          - 11b. Corolla broadly campanulate; young shoots tomentose ..... 274. *R. maculiferum*
        - 10b. Ovary glandular.
          - 12a. Adaxial leaf surface grayish floccose and glandular-hairy, glabrescent; inflorescence 5–10-flowered ..... 269. *R. pseudochrysanthum*
          - 12b. Adaxial leaf surface glabrous; inflorescence 10–20-flowered ..... 273. *R. pachysanthum*

**264. *Rhododendron longesquamatum*** C. K. Schneider, Ill. Handb. Laubholz. 2: 483. 1909.

长鳞杜鹃 chang lin du juan

*Rhododendron brettii* Hemsley & E. H. Wilson; *R. longesquamatum* var. *glabristylum* Y. Y. Geng & Z. L. Zhao.

Shrubs or small trees, 1–6 m tall; bark grayish; young shoots stout, with persistent perulae and densely shaggy, hairs coarse, branched. Petiole stout, 10–20 mm, tawny shaggy; leaf blade leathery, oblong-oblancheolate to narrowly obovate, 5.5–15.5 × 2–4.5 cm; base rounded to subcordate; margin revolute; apex acute; abaxial surface pale green, midrib tawny shaggy, otherwise glabrous when mature; adaxial surface dark green, glandular-hairy and rufous-tomentose, midrib prominent abaxially, grooved adaxially; lateral veins 12–14-paired. Inflorescence racemose-umbellate, 6–12-flowered; rachis 3–6 mm, rufous-tomentose. Pedicel 2–3.5 cm, glandular-hairy; calyx cupular; lobes 5, 8–13 mm, unequal, lingulate, glandular-hairy, 6–12 mm; corolla open-campanulate, rose-pink, with deep crimson basal blotches, ca. 4 cm, lobes 5, suborbicular, ca. 1.3 × 2.2 cm, emarginate; stamens 10, unequal, 2–2.5 cm, filaments pubescent at base; ovary ovate, 4–5 mm, glandular-hairy; lower half of style glandular-hairy. Capsule cylindrical, curved, ca. 20 × 6 mm. Fl. Jun, fr. Sep.

- Usually in *Abies* forests; 2300–3400 m. W Sichuan.

Plants with the leaf blade midrib generally glabrescent, calyx lobes tomentose, eglandular, and style glabrous have been described as var. *glabristylum* Y. Y. Geng & Z. L. Zhao (Acta Phytotax. Sin. 41: 197. 2003).

**265. *Rhododendron strigillosum*** Franchet, Bull. Soc. Bot. France 33: 232. 1886.

芒刺杜鹃 mang ci du juan

Shrubs, rarely small trees, 2–5(–10) m tall; bark grayish; young shoots densely glandular-setose. Petiole stout, 10–20 mm, glandular-setose mixed with branched hairs; leaf blade leathery, oblong-lanceolate to oblanceolate, 8–16 × 2.2–4 cm; base cuneate or subcordate; margin revolute, ciliate; apex acuminate

or cuspidate; abaxial surface with setae that are glandular or branched at the tip and persistent, especially near base, sometimes restricted to midrib, midrib with stouter setae, rufous-setose near base; adaxial surface green, glabrous when mature; midrib prominent abaxially, deeply grooved adaxially; lateral veins 15–18-paired. Inflorescence 8–12-flowered; rachis ca. 15 mm, glandular. Pedicel 0.6–1.5 cm, glandular-setose; calyx ca. 2 mm, ciliate; corolla tubular-campanulate, fleshy, deep red, red, or white, with black-crimson basal blotch, 4–4.5 cm, with 5 black crimson nectar pouches at base; lobes 5, suborbicular, 1.3–1.5 × 1.8–2 cm, emarginate; stamens 10, unequal, 2–3.4 cm, filaments glabrous; ovary ovoid, ca. 5 mm, densely glandular-setose; style ca. 3.5 cm, glabrous. Capsule cylindrical, 10–20 × 6–7 mm, densely setose. Fl. Apr–Jun, fr. Sep–Oct.

- Forests, *Rhododendron* thickets, rocky slopes; 1600–3800 m. Sichuan, Yunnan.

- 1a. Abaxial leaf surface with persistent setae that are glandular or branched at tip ..... 265a. var. *strigillosum*
- 1b. Abaxial leaf surface glandular-strigose along midrib, otherwise glabrous ..... 265b. var. *monosematum*

**265a. *Rhododendron strigillosum* var. *strigillosum***

芒刺杜鹃(原变种) mang ci du juan (yuan bian zhong)

Abaxial leaf surface ± uniformly persistently setose. Corolla deep red. Fl. Apr–Jun, fr. Sep–Oct.

- *Abies* forests, rocky slopes; 1600–3600 m. SW Sichuan, NE Yunnan.

**265b. *Rhododendron strigillosum* var. *monosematum*** (Hutchinson) T. L. Ming, Acta Bot. Yunnan. 6: 155. 1984.

紫斑杜鹃 zi ban du juan

*Rhododendron monosematum* Hutchinson, Bot. Mag. 142: t. 8675. 1916; *R. pachytrichum* Franchet var. *monosematum* (Hutchinson) D. F. Chamberlain.

Abaxial leaf surface mostly glabrous, glandular-strigose only on prominent midrib. Corolla red or white.

- Forests, *Rhododendron* thickets; 2000–3800 m. Sichuan, Yunnan.

It is almost certain that var. *monosematum* is a hybrid between *Rhododendron strigillosum* and *R. pachytrichum*. The plate accompanying the original description illustrates a plant that is very close to *R. pachytrichum*, with pale flowers but with a long-stipitate-glandular indumentum. These features may be seen in naturally occurring populations of var. *monosematum* on Emei Shan in Sichuan. Therefore, it may be better to treat this taxon as a variety of *R. pachytrichum*. Plants resembling the photograph in Fang (Sichuan *Rhododendron* of China, 83. 1986) also occur there and are assumed to be back crosses with *R. strigillosum*.

**266. *Rhododendron polytrichum*** W. P. Fang, Acta Phytotax. Sin. 21: 459. 1983.

多毛杜鹃 duo mao du juan

Shrubs, usually ca. 2 m tall; bark gray, smooth; older branches glabrous; branchlets stout; young shoots densely brown glandular-setose. Petiole 15–30 mm, with scattered glandular setae; leaf blade leathery, narrowly elliptic to oblong-elliptic, 12–15(–20) × 4–5(–7) cm; base cuneate or subrounded; apex acute or acuminate; adaxial surface dark green; midrib grooved, prominent; lateral veins 16–18-paired. Inflorescence 7–9-flowered; rachis 40–50 mm, setose. Pedicel 2.5–4 cm, brown glandular-setose; calyx cupular, outer surface setose; corolla tubular-funnelform, rose, 3.5–4 cm, lobes 5, obovate, ca. 1.5 cm, emarginate; stamens 10, unequal, 2.5–3.5 cm, filaments glabrous; ovary ovoid, densely glandular and tomentose; style setose at base, stigma capitate. Capsule ovoid ca. 15 × 8 mm, persistently hairy. Fl. Apr, fr. Jul.

- Forests; ca. 1100 m. NE Guangxi, SW Hunan.

**267. *Rhododendron ochraceum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 534. 1913.

峨马杜鹃 e ma du juan

Shrubs, 2–6 m tall; older branches glabrescent; young shoots glandular-setose and sparsely tomentose. Petiole 10–15 mm, glandular-hairy and pubescent; leaf blade subleathery, oblanceolate, 5–8.5 × 1.2–2.5 cm; base cuneate or rounded; apex cuspidate or acuminate, shortly cuspidate; abaxial surface indumentum 1-layered, loosely woolly or spongy, midrib glandular-hairy and floccose; adaxial surface almost glabrous, midrib glandular and with vestigial hairs; midrib prominent abaxially, grooved adaxially; lateral veins 11–13-paired. Inflorescence 8–12-flowered; rachis ca. 6 mm, pubescent. Pedicel 0.6–1.2 cm, densely glandular-hairy; calyx red, cupular; teeth 5, ca. 1.5 mm, puberulent; corolla open-campanulate, crimson, without spots, 2.7–4 cm, glabrous; lobes 5, suborbicular, ca. 1 × 1.2 cm, emarginate; stamens 10–12, unequal, 1.2–1.9 cm, filaments glabrous; ovary conoid, ca. 3.5 × 3 mm, densely glandular-setose; style glabrous. Capsule cylindrical, 18–25 × 3–5 mm, persistently glandular-setose. Fl. May–Jul, fr. Aug–Sep.

- Forests, thickets; 1700–3000 m. Chongqing (Nanchuan), Sichuan, NE Yunnan.

1a. Abaxial leaf surface with a loosely

woolly tomentum; corolla 2.7–3 cm; capsule 18–25 × ca. 3–5 mm ..... 267a. var. *ochraceum*

- 1b. Abaxial leaf surface with a thick spongy indumentum; corolla ca. 4 cm; capsule ca. 13 × 6 mm ..... 267b. var. *brevicarpum*

**267a. *Rhododendron ochraceum* var. *ochraceum***

峨马杜鹃(原变种) e ma du juan (yuan bian zhong)

Abaxial leaf surface loosely woolly-tomentose. Corolla open-campanulate, 2.7–3 cm. Capsule 18–25 × 3–5 mm.

- Evergreen forests, thickets; 1800–3000 m. S Sichuan, NE Yunnan.

**267b. *Rhododendron ochraceum* var. *brevicarpum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 56. 1988.

短果杜鹃 duan guo du juan

Abaxial leaf surface indumentum thick, spongy. Corolla narrowly campanulate, ca. 4 cm. Capsule ca. 13 × 6 mm, persistently glandular-setose.

- Forests, bamboo forests; 1700–3000 m. Chongqing (Nanchuan).

**268. *Rhododendron pachytrichum*** Franchet, Bull. Soc. Bot. France 33: 231. 1886.

绒毛杜鹃 rong mao du juan

Shrubs, 1.5–5 m tall; older branches glabrous; young shoots tomentose. Petiole 15–20 mm, tomentose and glandular-hairy, rapidly glabrescent; leaf blade leathery or subleathery, oblong-elliptic or oblanceolate to obovate, 5–14 × 2–4.5 cm; base cuneate or rounded; margin ciliate when young; apex obtuse to acuminate, sometimes cuspidate; abaxial surface hairs short-branched; adaxial surface green, glabrous, midrib prominent abaxially, floccose-tomentose, grooved adaxially; lateral veins 14–19-paired. Inflorescence racemose-umbellate, 7–10-flowered; rachis 15–20 mm, pubescent. Pedicel 1–1.5 cm, tomentose; calyx teeth 5, ca. 2 mm, triangular; corolla campanulate, white to pink, with deep purple basal blotch, 3–4.5 cm, lobes 5, suborbicular, 1–1.5 × 1.3–2 cm, emarginate; stamens 10, unequal, 2–2.5 cm; filaments pubescent at base; ovary conoid, ca. 7 mm; ovary densely rufous-tomentose; style 2–4.5 cm, glabrous. Capsule 15–26 × 4–5 mm, ferruginous-tomentose or glabrescent. Fl. May–Jun, fr. Aug–Sep.

- Forests; 1700–3500 m. Chongqing, S Shaanxi, SW Sichuan, NE Yunnan.

- 1a. Leaf blade 7–14 × 2–4.5 cm; style 2–2.5 cm ..... 268a. var. *pachytrichum*
- 1b. Leaf blade 5–8.5 × 1.8–2.7 cm; style to 4.5 cm ..... 268b. var. *tenuistylosum*

**268a. *Rhododendron pachytrichum* var. *pachytrichum***

绒毛杜鹃(原变种) rong mao du juan (yuan bian zhong)

Leaf blade leathery, narrowly oblong or oblanceolate to obovate, 7–14 × 2–4.5 cm; base cuneate or rounded. Style 2–2.5 cm. Fl. May–Jun, fr. Aug–Sep.

- Evergreen broad-leaved forests, *Abies* forests; 1700–3500 m. ?Chongqing, S Shaanxi, SW Sichuan, NE Yunnan.

**268b. *Rhododendron pachytrichum* var. *tenuistylusum* W. K. Hu, Acta Phytotax. Sin. 26: 304. 1988.**

瘦柱绒毛杜鹃 shou zhu rong mao du juan

Leaf blade subleathery, oblong-elliptic, 5–8.5 × 1.8–2.7 cm; base cuneate. Style to 4.5 cm. Capsule furrowed, densely tomentose.

- Forests; 2100–2200 m. Chongqing.

This variety was wrongly cited in FRPS (57(2): 86. 1994) as var. "*tenuistylum*." There is a case for treating it as a subspecies, rather than a variety, as it appears to have a more easterly distribution than var. *pachytrichum*.

**269. *Rhododendron pseudochrysanthum* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 154. 1908.**

阿里山杜鹃 a li shan du juan

*Rhododendron nankotaisanense* Hayata; *R. pseudochrysanthum* var. *nankotaisanense* (Hayata) T. Yamazaki.

Low shrubs, 0.5–3 m tall; older branches shoots pale gray-brown, glabrous; young shoots gray tomentose, mixed with glandular hairs. Petiole 10–20 mm, densely tomentose, also glandular-hairy; leaf blade rigid, oblong-lanceolate or ovate-elliptic, 4–8 × 1.5–3.5 cm; base rounded; apex acute or acuminate; abaxial surface pale green, ± persistently floccose, tomentose; adaxial surface dark green, grayish floccose and glandular-hairy, glabrescent; midrib raised abaxially, grooved adaxially; lateral veins 15-paired. Inflorescence 5–10-flowered; rachis 10–20 mm. Pedicel 2–2.5 cm, sparsely glandular-hairy; calyx teeth 5, 1–2 mm, triangular, margin glandular; corolla campanulate, pink, with deeper rose lines outside and crimson flecks within, 3–4 cm, lobes 5, obovate, ca. 1.5 cm; stamens 10, 1–2 cm, filaments pubescent at base; ovary conoid, ca. 5 mm, densely glandular; style ca. 3 cm, glabrous or glandular for 1/3 of its length; stigma swollen. Capsule ca. 20 × 5 mm with persistent glands and style. Fr. Jul.

- Forests; 3000–3200 m. Taiwan.

Authors from Taiwan include this variety within *Rhododendron morii*, with which it apparently intergrades in the wild. However, the two taxa remain distinct in cultivation.

**270. *Rhododendron pachyphyllum* W. P. Fang, Acta Phytotax. Sin. 21: 460. 1983.**

厚叶杜鹃 hou ye du juan

*Rhododendron ziyuanense* P. C. Tam var. *pachyphyllum* (W. P. Fang) G. Z. Li.

Small trees, ca. 8 m tall; older branches grayish, glabrous; young shoots pale purple, scattered floccose. Petiole 10–15 mm, sparsely floccose; leaf blade thick, leathery, oblong to oblong-elliptic, rarely oblong-obovate, 5.5–6.5(–8.5) × 1.6–2.5 (–3.2) cm; base rounded or cuneate; apex acute, apiculate; abaxial surface floccose near base, glabrescent; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins obscure on both surfaces. Inflorescence 4- or 5-flowered; rachis ca. 5 mm, glabrous. Pedicel 1.5–2.5 cm, glabrous; calyx cupular; lobes 5, ca. 1 mm; corolla campanulate,

creamy-white, with purple flecks, ca. 3 cm, lobes 5, obovate, ca. 1.5 cm, emarginate; stamens 10, unequal, 1–2 cm, filaments pubescent at base; ovary ovoid, ca. 5 mm, purple, glandular; style ca. 2 cm, glabrous; stigma swollen, disk-shaped, ca. 2.6 mm in diam. Capsule ca. 20 × 5 mm, calyx and style persistent. Fl. May.

- Forests; 1800–1900 m. NE Guangxi, SW Hunan.

**271. *Rhododendron oligocarpum* W. P. Fang & X. S. Zhang, Acta Phytotax. Sin. 21: 466. 1983.**

稀果杜鹃 xi guo du juan

Shrubs or small trees, 4–6 m tall; older branches pale gray-brown, glabrescent; young shoots white-tomentose. Petiole 8–15 mm, tomentose; leaf blade leathery, oblong, or oblong-elliptic, rarely obovate-elliptic, 4–6.3 × 2–3 cm; base rounded, rarely subcordate; margin revolute, ciliate; apex obtuse, apiculate; abaxial surface pale green, midrib brownish pubescent near base; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 13–15-paired, obscure on both surfaces. Inflorescence 3- or 4-flowered; rachis 5–6 mm, sparsely tomentose. Pedicel 1–2 cm, densely tomentose; calyx teeth 5, 1–2 mm; corolla campanulate, purple to pink, with deep purple basal blotch, ca. 3.5 cm; lobes 5, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.3–2.6 cm, filaments pubescent at base; ovary ovoid, 4–5 × ca. 3 mm, densely woolly-tomentose; style ca. 2.5 cm, glabrous. Capsule cylindrical, 20–25 × ca. 7 mm, rough. Fl. Apr–May, fr. Sep–Oct.

- Forests, thickets; 1800–2500 m. NE Guangxi, NE Guizhou.

**272. *Rhododendron ziyuanense* P. C. Tam, Guihaia 2: 70. 1982.**

资源杜鹃 zi yuan du juan

Trees or shrubs, ca. 5 m tall; branches stout, brown; branchlets pale gray-brown, glandular setose when young. Petiole stout, 7–12 mm, with verrucose spots; leaf blade leathery, rigid, oblong-lanceolate, 5–7 × 1.5–2.5 cm; base cuneate; margin revolute; apex acuminate, apiculate; abaxial surface pale green, midrib with verrucose spots; adaxial surface dull green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 14-paired. Inflorescence 3–5-flowered. Pedicel slender, ca. 1.5 cm, puberulent; calyx saucer-shaped; lobes 5, puberulent, margin undulate; corolla campanulate, pale pink to white, with purple-red flecks on lobes, ca. 3 cm; lobes 5, ± ovate, ca. 1.2 × 1.5 cm; stamens 10, unequal, 0.9–2 cm, filaments pale rufous tomentose at base; ovary cylindrical, ca. 4 mm, ferruginous-glandular; style ca. 2.5 cm, glabrous. Capsule cylindrical, 15–20 mm, rough, glabrescent. Fl. May, fr. Oct.

- Forests; ca. 1700 m. NE Guangxi.

**273. *Rhododendron pachysanthum* Hayata, Icon. Pl. Formos. 3: 140. 1913.**

台湾山地杜鹃 tai wan shan di du juan

*Rhododendron pseudochrysanthum* Hayata f. *rufovelutinum* T. Yamazaki; *R. pseudochrysanthum* var. *rufovelutinum*

(T. Yamazaki) T. Yamazaki; *R. rufum* Batalin var. *pachysanthum* (Hayata) S. S. Ying.

Shrubs; young shoots tomentose. Petiole ca. 15 mm, tomentose; leaf blade leathery, oblong-elliptic, 6–9 × 2.5–3.5 cm; base rounded; apex acute, apiculate; abaxial surface persistently pale white-brown to rufous tomentose, sometimes only on the midrib, hairs branched; adaxial surface rugose or smooth, glabrous. Inflorescence 10–20-flowered; rachis 10–20 mm. Pedicel ca. 2.5 cm, glandular-pubescent; calyx lobes ca. 1 mm, rounded, glandular especially on margin; corolla widely campanulate, white to pale pink, with or without flecks, ca. 4 cm; ovary densely glandular-hairy; style glabrous. Capsule ca. 15 × 5 mm.

- Forests. Taiwan.

Li et al. (in T. C. Huang, Fl. Taiwan, ed. 2, 4: 31. 1998) considered that *Rhododendron pachysanthum* and the synonyms cited above are synonymous with *R. hyperythrum*. See also the comment under *R. hyperythrum* below.

**274. *Rhododendron maculiferum*** Franchet, J. Bot. (Morot) 9: 393. 1895.

麻花杜鹃 ma hua du juan

Shrubs, evergreen, 1.5–5 m tall; bark gray-black, usually falling off in flakes; young shoots brown, pale white tomentose. Petiole 13–22 mm, white-tomentose when young; leaf blade leathery, oblong-elliptic, elliptic, obovate, ovate-lanceolate or ovate-elliptic, 4–11 × 2.5–4.2 cm; base rounded, rarely slightly cordate; margin ciliate; apex obtuse or rounded, apiculate; abaxial surface glabrous at maturity, midrib densely tomentose near base; adaxial surface green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 12–17-paired. Inflorescence 7–10-flowered; rachis 12–25 mm, densely tomentose. Pedicel 1.4–2.5 cm, tomentose or glabrous; calyx teeth 5, 2–3 mm, tomentose or glabrous; corolla open-campanulate, white to pale pink, with purple blotch and a few flecks, 3.7–4 cm, lobes 5, ca. 1 × 1.2–1.3 cm; stamens 10, unequal, 1.6–2.7 cm, filaments pubescent at base; ovary conoid, ca. 4.2 mm, pale brown-tomentose or glabrous; style ca. 2.6 cm, glabrous. Capsule cylindrical, curved, 15–20 × 4–5 mm, rufous-tomentose or glabrous. Fl. May–Jun, fr. Sep–Oct.

- Forests, forest margins; 700–3400 m. Anhui, Chongqing, S Gansu, Guangxi, E Guizhou, W Hubei, Hunan, Jiangxi, SW Shaanxi, N Sichuan, Zhejiang.

- 1a. Pedicel, calyx and ovary tomentose ..... 274a. subsp. *maculiferum*
- 1b. Pedicel, calyx and ovary glabrous ..... 274b. subsp. *anhweicense*

**274a. *Rhododendron maculiferum*** subsp. *maculiferum*

麻花杜鹃(原亚种) ma hua du juan (yuan ya zhong)

Leaf blade oblong-elliptic, elliptic or obovate. Pedicel 1.4–2 cm, densely tomentose; calyx and ovary densely tomentose. Fl. May–Jun, fr. Sep–Oct.

- Forests; 1600–3400 m. Chongqing, S Gansu, E Guizhou, W Hubei, SW Shaanxi, N Sichuan.

**274b. *Rhododendron maculiferum*** subsp. *anhweicense* (E. H. Wilson) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 118. 1978 [*anhweicense*].

黄山杜鹃 huang shan du juan

*Rhododendron anhweicense* E. H. Wilson, J. Arnold Arbor. 6: 163. 1925.

Leaf blade ovate-lanceolate or ovate-elliptic. Pedicel 1.7–2.5 cm, glabrescent; calyx and ovary glabrous.

- Forest margins; 700–1700 m. Anhui, Guangxi, Hunan, Jiangxi, Zhejiang.

*Rhododendron anhweicense* may in fact be a species clearly distinct from *R. maculiferum*, as originally described.

**275. *Rhododendron pilostylum*** W. K. Hu, Bull. Bot. Res., Harbin 8(3): 49. 1988.

金平毛柱杜鹃 jin ping mao zhu du juan

Trees; shoots ca. 3.5 mm in diam. below inflorescence; young shoots sparsely glandular. Petiole cylindrical, 10–12 mm, pubescent and glandular; leaf blade subleathery, oblong-elliptic to oblanceolate, 8.5–8.8 × 2.5–3.2 cm; base cuneate or rounded; margin revolute; apex acuminate, caudate; abaxial surface pale green, glabrescent, with sparse red verruculose spots, midrib tomentose near base; adaxial surface green, glabrous; midrib raised abaxially, narrow and grooved adaxially; lateral veins ca. 15-paired. Inflorescence 4- or 5-flowered; rachis ca. 6 mm, pubescent. Pedicel 1–1.5 cm, densely brown-pubescent and shortly glandular-hairy; calyx lobes 5, ca. 2 mm; outer surface pubescent; corolla funnellform, ca. 4.2 cm, with 5 basal nectar pouches; lobes 5, suborbicular, ca. 1.5 cm; stamens 10, unequal, 2–3.3 cm, filaments red, glabrous; ovary elliptic, narrow, ca. 7 × 3 mm, densely woolly-tomentose; style red, densely glandular-hairy above, brown-woolly-tomentose below; stigma small. Capsule not known. Fl. Mar.

- Evergreen forests; ca. 2500 m. SE Yunnan.

Judging from the original description, this species probably belongs to *Rhododendron* subsect. *Irrorata*. The red verruculose spots on the abaxial surface of the leaves may well equate to the punctate glands that occur in several members of that subsection but do not occur in any of the species in *R.* subsect. *Maculifera*.

**276. *Rhododendron morii*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 173. 1911.

玉山杜鹃 yu shan du juan

*Rhododendron morii* var. *taitunense* (T. Yamazaki) D. F. Chamberlain; *R. pseudochrysanthum* Hayata subsp. *morii* (Hayata) T. Yamazaki; *R. pseudochrysanthum* var. *taitunense* T. Yamazaki.

Shrubs or trees, evergreen, 4.5–7.6 m tall; bark brown, smooth; older branches glabrous; young shoots pubescent; bud scales ovate, ca. 1.5 × 0.6 cm, glabrescent. Petiole 20–30 mm, ± floccose and glandular-hairy; leaf blade leathery, oblong-elliptic to oblong-ovate, 6.5–12 × 1.8–3.3 cm; base cuneate to rounded;

apex acute or acuminate, apiculate; abaxial surface pale green, densely brownish tomentose when young, glabrescent; adaxial surface green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 14–16 on each side, obscure. Inflorescence 10–15-flowered; rachis ca. 20 mm, glandular. Pedicel 2.5–4 cm, glandular-hairy; calyx teeth 5, 1.5–3 mm; margin fringed with glands; corolla funnelform, white to pink, with crimson flecks

and basal blotch, ca. 5 cm, lobes 5, suborbicular, ca. 2 × 2.3 cm, emarginate; stamens 10–14, 3.7–4.8 cm, filaments pubescent at base; ovary conoid, ca. 7 mm, glandular-hairy and tomentose; style glandular and tomentose at base, otherwise glabrous. Capsule 13–16 × 5–6 mm; style persistent. Fl. Apr, fr. Oct–Nov.

• Forests; 1830–3040 m. C Taiwan.

**8. Rhododendron** subsect. **Selensia** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 547. 1949.

漏斗杜鹃亚组 lou dou du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Selensia* Tagg in J. B. Stevenson, Sp. Rhodod. 710. 1930 [“*Selense*”].

Shrubs or small trees; young shoots glandular-hairy. Leaf blade thinly leathery or leathery, rarely papery, elliptic or long-obovate; abaxial surface glabrous or with thin indumentum. Inflorescence (1–)2–11-flowered, rachis short, less than 5 mm. Calyx small, 1–5(–10) mm, lobes unequal; corolla funnelform, base narrow, 5-lobed, white to rose-pink, often with dark spots; stamens 10; ovary glandular or setose; style smooth (glandular to apex in *R. ×erythrocalyx*). Capsule slender, curved.

About nine species: China, Myanmar; nine species (seven endemic) in China.

- 1a. Leaf blade obovate or elliptic, apex rounded, abaxial surface glabrous; ovary glandular.
- 2a. Leaves 2.5–3 × 1.5–2 cm, elliptic; petiole 5–7 mm; inflorescence 2–3-flowered ..... 281. *R. martinianum*
- 2b. Leaves 4–8 × 2.5–4 cm; petiole 10–20 mm; inflorescence 3–7-flowered.
  - 3a. Calyx 2–3 mm; corolla 2.5–3.5 cm, pinkish to rose; style glabrous; leaf blade base rounded ..... 280. *R. selense*
  - 3b. Calyx 4–7 mm; corolla 3.5–4 cm, milky-white to yellowish; style base glandular; leaf blade base ± cordate ..... 285. *R. ×erythrocalyx*
- 1b. Leaf blade narrowly elliptic, apex acute, abaxial surface hairy at least on midrib.
  - 4a. Young shoots, petioles, and pedicels with shortly stipitate or sessile glands, rarely glabrous.
    - 5a. Leaf blade leathery; calyx 3–7(–10) mm; ovary densely glandular ..... 282. *R. esetulosum*
    - 5b. Leaf blade thinly leathery; calyx 2–3 mm; ovary glandular and hairy ..... 277. *R. calvescens*
  - 4b. Young shoots, petioles, and pedicels glandular-setose.
    - 6a. Leaf blade abaxially shortly setose at least on base of midrib; calyx lobes elliptic, obovate-elliptic or ovate, apex rounded.
      - 7a. Leaf blade 4–5.5 cm wide; young shoots and petioles with glandular setae 3–7 mm ..... 283. *R. hirtipes*
      - 7b. Leaf blade 2–3.5 cm wide; young shoots and petioles with glandular setae less than 2 mm ..... 278. *R. dasycladoides*
    - 6b. Leaf blade abaxially with downy indumentum; calyx lobes lanceolate or ovate to oblong, apex acute.
      - 8a. Leaf blade base cordate, abaxial indumentum olivaceous or brownish; corolla yellow or white, with red spots ..... 279. *R. bainbridgeanum*
      - 8b. Leaf blade base cuneate or rounded, abaxial indumentum yellowish brown or brownish; corolla white to pinkish, with deep red lines ..... 284. *R. setiferum*

**277. Rhododendron calvescens** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 29. 1919.

变光杜鹃 bian guang du juan

Shrubs, 1–2 m; old branches coarse, bark flaking, with leaf scars; branchlets stout; young shoots with a thin very short-lived indumentum. Petiole adaxially flat and shallowly grooved, abaxially rounded, 10–15 mm, sparsely pubescent; leaf blade thinly leathery, lanceolate, elliptic or oblong-elliptic, 6–13 × 1.7–4 cm; base rounded, truncate or subcordate, bilaterally asymmetrical; apex apiculate; abaxial surface brownish hairy; adaxial surface green, sometimes rugulose, glabrous, midrib prominently raised abaxially, impressed adaxially; lateral veins 12–14-paired, flat on both surfaces. Inflorescence racemose-umbellate, 3–8-flowered; rachis short, conical, 3–5 mm. Pedicel stout or slender, 1–2.5 cm, sparsely hairy and glandular; calyx cup-shaped; lobes 5, 2–3 mm, unequal, lanceolate, base glandular, margin ciliate; corolla campanulate, rose, with purple lines

in the lower part, 3–3.5 cm; lobes 5, orbicular, 1.5–1.8 cm, apex emarginate; stamens 10, unequal, 1.2–2.5 cm, filaments hairy at base, anthers purplish red; ovary ovate, ca. 5 mm, glandular and pubescent or downy; style stout, glabrous. Capsule cylindrical, slightly curved, ca. 20 × 5 mm. Fl. Jun–Jul, fr. Oct–Nov.

• *Abies* forests, *Picea* forests, rocky slopes; 3300–3600 m. E Xizang, NW Yunnan.

- 1a. Leaf blade 6–9 × 3–4 cm; pedicel stout, 1–1.3 cm, with sparse eglandular hairs; ovary glandular and pubescent ..... 277a. var. *calvescens*
- 1b. Leaf blade 7–13 × 1.7–3 cm; pedicel slender, 1.5–2.5 cm, without eglandular hairs; ovary downy ..... 277b. var. *duseimatum*

**277a. Rhododendron calvescens** var. *calvescens*

变光杜鹃(原变种) bian guang du juan (yuan bian zhong)

Leaf blade 6–9 × 3–4 cm; abaxial surface brownish hairy. Pedicel stout, 1–1.3 cm, with sparse eglandular hairs; ovary glandular and pubescent.

• *Abies* forests, *Picea* forests, rocky slopes; ca. 3300 m. E Xizang, NW Yunnan.

**277b. *Rhododendron calvescens* var. *duseimatum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 119. 1978.

长梗变光杜鹃 chang geng bian guang du juan

*Rhododendron duseimatum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 41. 1920; *R. selense* Franchet subsp. *duseimatum* (I. B. Balfour & Forrest) Tagg; *R. selense* var. *duseimatum* (I. B. Balfour & Forrest) Cowan & Davidian.

Leaf blade 7–13 × 1.7–3 cm; abaxial surface sparsely hairy; adaxial surface rugulose. Pedicel slender, 1.5–2.5 cm, without eglandular hairs; ovary downy. Fl. Jul.

• *Abies* forests; ca. 3600 m. SE Xizang.

**278. *Rhododendron dasycladoides*** Handel-Mazzetti, Symb. Sin. 7: 781. 1936.

漏斗杜鹃 lou dou du juan

Shrubs or small trees, 2–5 m tall; old branches grayish white, glabrous; shoots stout, 3–4 mm in diam. below inflorescence; young shoots greenish, densely glandular-hairy. Petiole stout and short, 10–15 mm, densely glandular-setose; leaf blade thinly leathery, narrowly ovate-elliptic to long-elliptic, 4–10 × 2–3.5 cm; base rounded or subcordate; apex acute or acuminate, apiculate; abaxial surface greenish, sparsely glandular-hairy when young, glabrescent, midrib densely glandular-setose; adaxial surface deep green, densely rugulose, glabrous; midrib raised abaxially, impressed adaxially; lateral veins 14–16-paired, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 5–8-flowered; rachis conical, 2–5 mm, densely pubescent. Pedicel stout, 1–1.2 cm, with long-glandular hairs; calyx lobes 5, large, oblong-elliptic or ovate-elliptic, apex rounded, outer surface and margin sparsely setose, 5–8 × 2–4 mm; corolla funnelform, rose-pink, throat with purple spots, 2.8–3.5 cm, lobes 5, rounded, ca. 1.2 cm, apex emarginate; stamens 10, unequal, 1.2–2.2 cm, filaments slightly hairy, anthers oblong-elliptic, ca. 3 mm; ovary ovate, 4–5 mm, densely setose; style 2.5–3 cm, slightly longer than corolla, glabrous; stigma not expanded. Capsule cylindrical, curved, ca. 30 × 5 mm. Fl. May.

• Forests; 3000–4000 m. SW Sichuan, NW Yunnan.

**279. *Rhododendron bainbridgeanum*** Tagg & Forrest in J. B. Stevenson, Sp. Rhodod. 133. 1930.

毛萼杜鹃 mao e du juan

Shrubs, 1–2 m tall; old branches grayish white, glabrous; young shoots greenish, sparsely glandular-hairy. Petiole terete, adaxially flat, grooved, 10–15 mm, glabrous, abaxially conspicuously glandular hairy; leaf blade leathery, oblong-elliptic to obovate, 6–10 × 2–4.5 cm; base cordate; apex mucronate; abaxial surface indumentum persistent, thin, olivaceous or brownish

yellow; adaxial surface green, densely rugulose, glabrous or hairy on midrib; midrib prominent abaxially, impressed adaxially; lateral veins 12–14-paired, slightly raised abaxially, slightly impressed adaxially. Inflorescence racemose-umbellate, 4–8-flowered; rachis ca. 5 mm, pilose. Pedicel slender, 1.5–2.5 cm, densely glandular-hairy; calyx membranous, lobes 5, 4–5(–9) mm, ovate to oblong, outer surface and margin with glandular hairs; corolla campanulate, white to cream, base with deep red spots, 2.5–3.5 cm, lobes 5, suborbicular, ca. 1.5 × 1.5–2 cm, apex emarginate; stamens 10, unequal, 1.5–2.5 cm, filaments pubescent at base; anthers ovate; ovary ovate, ca. 4 mm, glandular hairy; style ca. 2 cm, as long as corolla, base with slightly glandular hairs, stigma slightly expanded. Capsule cylindrical, curved, ca. 20 × 4 mm. Fl. May–Jun, fr. Aug–Sep.

Coniferous forests, scrub, mountain slopes; 3300–3700 m. SE Xizang, NW Yunnan [Myanmar].

**280. *Rhododendron selense*** Franchet, J. Bot. (Morot) 12: 257. 1898.

多变杜鹃 duo bian du juan

Shrubs, 1–2 m tall, old branches grayish white, glabrous; shoots stout; young shoots greenish, with sessile glands or short to long glandular hairs. Petiole 10–20 mm, indument similar to young shoots; leaf blade thinly leathery or papery, oblong-elliptic or obovate to broadly elliptic, 4–8 × 2–4 cm; base rounded, asymmetrical; apex apiculate; both surfaces glabrous; midrib slightly raised abaxially, slightly impressed adaxially; lateral veins 9–13-paired, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 4–7-flowered; rachis 20–40 mm, glabrous. Pedicel 1–2 cm, indument similar to young shoots; calyx usually lobes 5, 2–5 mm, rounded, outer surface and margin with glands; corolla funnelform, narrow at base, pink to rose, 2.5–3.5 cm, lobes 5, suborbicular, ca. 1 cm, apex emarginate; stamens 10, unequal, 1.5–2.5 cm, filaments slightly hairy at base, anthers oblong, ca. 2 mm; ovary cylindrical, ca. 4 mm, densely glandular; style ca. 2.5 cm, glabrous and glandular. Capsule cylindrical, usually curved, 12–25 × 3–4 mm. Fl. Apr–Jun, fr. Jul–Oct.

• Montane coniferous forests, *Rhododendron* thickets; 2700–4000 m. SW Sichuan, E Xizang, W Yunnan.

- 1a. Young shoots, petiole and pedicel with glandular hairs to 2–3 mm ..... 280b. subsp. *dasycladum*
- 1b. Young shoots, petiole and pedicel with short glandular hairs or sessile glands.
  - 2a. Abaxial leaf surface greenish; calyx less than 2 mm ..... 280a. subsp. *selense*
  - 2b. Abaxial leaf surface with frosting; calyx 2–5 mm ..... 280c. subsp. *jucundum*

**280a. *Rhododendron selense* subsp. *selense***

多变杜鹃(原亚种) duo bian du juan (yuan ya zhong)

*Rhododendron axium* I. B. Balfour & Forrest; *R. chalarocladum* I. B. Balfour & Forrest; *R. metrium* I. B. Balfour & Forrest; *R. nanothamnum* I. B. Balfour & Forrest; *R. pagophilum* I. B. Balfour & Kingdon Ward; *R. probum* I. B. Balfour & For-



rest; *R. selense* var. *pagophilum* (I. B. Balfour & Kingdon Ward) Cowan & Davidian; *R. selense* var. *probum* (I. B. Balfour & Forrest) Cowan & Davidian.

Young shoots, petioles, and pedicels with short glandular hairs or sessile glands. Leaf blade broadly elliptic or obovate, 5–8 × 2.5–4 cm; abaxial surface greenish. Calyx less than 2 mm. Fl. May–Jun, fr. Jul–Aug.

• Montane *Abies* forests, *Rhododendron* thickets; 2800–4000 m. SW Sichuan, E Xizang, NW Yunnan.

**280b. *Rhododendron selense* subsp. *dasycladum*** (I. B. Balfour & W. W. Smith) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 118. 1978.

毛枝多变杜鹃 mao zhi duo bian du jian

*Rhododendron dasycladum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 98. 1917; *R. dolerum* I. B. Balfour & Forrest; *R. rhaibocarpum* I. B. Balfour & W. W. Smith; *R. selense* var. *dasycladum* (I. B. Balfour & W. W. Smith) T. L. Ming.

Young shoots, petioles, and pedicels with glandular hairs to 2–3 mm. Leaf blade long-elliptic, 5–8 × 2–3.5 cm. Fl. Apr–Jun, fr. Jul–Oct.

• Montane coniferous forests, *Rhododendron* thickets; 2700–3600 (–4000) m. SW Sichuan, E Xizang, NW Yunnan.

**280c. *Rhododendron selense* subsp. *jucundum*** (I. B. Balfour & W. W. Smith) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 118. 1978.

粉背多变杜鹃 fen bei duo bian du jian

*Rhododendron jucundum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 242. 1916; *R. blandulum* I. B. Balfour & W. W. Smith; ?*R. hedythamnum* I. B. Balfour & Forrest; *R. selense* var. *jucundum* (I. B. Balfour & W. W. Smith) T. L. Ming.

Young shoots, petioles, and pedicels with short glandular hairs or sessile glands. Leaf blade broadly elliptic, 5–7 × 3–4 cm; abaxial surface with obvious frosting. Pedicel with glandular hairs; calyx 2–5 mm. Fl. May, fr. Oct.

• *Abies* forests, *Rhododendron* thickets; 3200–3600 m. W Yunnan.

The type of *Rhododendron hedythamnum* has calyx lobes quite well-developed and the leaves shorter than is usual in *R. selense* subsp. *jucundum*.

**281. *Rhododendron martinianum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 96. 1919.

少花杜鹃 shao hua du jian

Shrubs, 1–2 m tall; old branches grayish white, glabrous, usually with longitudinal lines; branches slender; young branches greenish, with short-glandular hairs and setae. Petiole stout and short, adaxially flat, abaxially rounded, 3–5 mm; leaf blade leathery, elliptic or ovate-elliptic, 2–3.5 × 1.5–2 cm; base rounded; apex mucronate or rounded and apiculate; both surfaces glabrous; abaxial surface greenish; adaxial surface deep

green; midrib raised abaxially, impressed adaxially; lateral veins 9–11-paired, inconspicuous on both surfaces. Inflorescence 2- or 3-flowered; rachis ca. 2 mm, glabrous. Pedicel 1.5–3 cm, sparsely shortly glandular-hairy; calyx discoid, with 5 wavy projections, small, margin with short glandular hairs; corolla funnellform, milky white, or yellowish to rose pink, 3–3.5 × 3–4 cm; lobes 5, rounded, ca. 1.5 × 1.8 cm, apex emarginate; stamens 10, unequal, 1.2–3 cm, filaments pubescent at base, anthers ovate, brown, ca. 2 mm; ovary cone-shaped, 3–4 mm, densely glandular-hairy; style 2–2.5 cm, as long as corolla, base glandular, smooth in the upper part; stigma expanded. Capsule cylindrical, curved, 20–25 × 4–6 mm, glandular-hairy. Fl. Jun, fr. Aug.

Open coniferous forests; 3000–3500 m. E Xizang, NW Yunnan [Myanmar].

**282. *Rhododendron esetulosum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 42. 1920.

喙尖杜鹃 hui jian du jian

*Rhododendron manopeplum* I. B. Balfour & Forrest.

Shrubs, 1–2 m tall; old branches smooth; shoots stout, 5–7 mm in diam. below inflorescence; young branches densely glandular. Petiole stout, adaxially flat, abaxially rounded, 15–20 mm, glabrous; leaf blade leathery, long-elliptic to ovate-elliptic, 6–10 × 3–5 cm; base rounded, truncate or subcordate; apex acute, apiculate; abaxial surface yellowish green, indumentum gauzelike; adaxial surface green, glabrous; midrib obviously raised abaxially, impressed adaxially; lateral veins 14–16-paired, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 7–11-flowered; rachis conical, 5–10 mm, densely glandular. Pedicel stout, 2–2.5 cm, shortly glandular-hairy, glabrous; calyx lobes 5, 3–7(–10) mm, ovate; outer surface and margin glandular; corolla funnellform, pink, throat with purple spots, ca. 4 cm, lobes 5, suborbicular, 2–2.5 × 1.5–2 cm, apex emarginate, margin slightly wavy; stamens 10, unequal, 1.5–2.5 cm, filaments pubescent at base, anthers ovate, ca. 3 mm; ovary cylindrical, ca. 5 mm, densely glandular; style smooth or with a few glands at base, stigma expanded. Capsule cylindrical, ca. 20 × 10 mm. Fl. Jun, fr. Aug–Oct.

• Thicket margins, gravelly mountain slopes; 3000–4200 m. SE Xizang, NW Yunnan.

**283. *Rhododendron hirtipes*** Tagg in J. B. Stevenson, Sp. Rhodod. 140. 1930.

硬毛杜鹃 ying mao du jian

*Rhododendron xizangense* W. P. Fang & W. K. Hu ex Q. Z. Yu.

Shrubs or small trees, 2–4 m tall; older branches grayish white, usually glabrous; young shoots green or brownish when young, ca. 3 mm in diam., densely glandular-setose, setae 3–5 (–7) mm, very short-lived. Petiole terete, shallowly impressed adaxially, 15–30 mm, densely glandular-setose; leaf blade leathery, long-elliptic to obovate-elliptic, broadest above the middle, 6–10 × 4–5.5 cm; base rounded to subcordate; apex rounded, apiculate; abaxial surface greenish, sparsely glandular, midrib glandular-setose; adaxial surface deep green, glabrous except

for glandular setae near base of midrib; midrib prominently raised abaxially, impressed adaxially; lateral veins 12–15-paired, flat and visible on both surfaces. Inflorescence racemose-umbellate, 2–5-flowered; rachis short, 1–3 mm, glandular-setose. Pedicel 1–2 cm, densely glandular-setose; calyx membranous, cup-shaped; lobes 5, 8–12 mm, unequal, elliptic or ovate, outer surface shortly glandular-hairy at base and on margin, 5–10 × 3–4 mm; corolla funnelform-campanulate, pink, throat with deep purple spots, 3.5–4 cm, lobes 5, unequal; filaments pubescent at base; anthers long-elliptic, ca. 2.5 mm; ovary cylindrical-conical, ca. 5 mm, densely glandular-hairy; style 3–3.5 cm, as long as corolla, glandular-hairy towards base; stigma expanded, slightly lobed. Capsule cylindrical, slightly curved, 15–22 × ca. 6 mm. Fl. May, fr. Jul.

- Wet coniferous forests, riversides; 3300–3700 m. E Xizang.

**284. *Rhododendron setiferum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 137. 1919.

刚刺杜鹃 gang ci du juan

*Rhododendron selense* Franchet subsp. *setiferum* (I. B. Balfour & Forrest) D. F. Chamberlain; *R. vestitum* Tagg & Forrest.

Shrubs, 2–3 m tall; old branches smooth, bark usually flaking when dry; branchlets stout, ca. 5 mm in diam., young branches densely glandular. Petiole terete, 10–20 mm, with glandular hairs; leaf blade leathery, oblong-elliptic or elliptic, 5.5–10 × 1.8–4 cm; base rounded; margin thin, reflexed downward; apex obtuse or acute, apiculate; abaxial surface indumentum thin, yellowish brown or brownish; adaxial surface green, glabrous; midrib prominently raised abaxially, grooved adaxially; lateral veins 12–15-paired, flat on both surfaces, inconspicuous. Inflorescence racemose-umbellate, 6–10-flowered; rachis ca. 5 mm, glandular hairy and with a discontinuous indumentum. Pedicel slender, 1.5–2 cm, glandular-hairy and pubescent; calyx membranous, lobes 5, large, lanceolate, apex acuminate, outer surface and margin sparsely glandular-hairy, 5–7 × 2–3 mm; corolla funnelform, white or pink, base with deep red lines, 3.5–4 × ca. 3.5 cm; lobes 5, rounded, ca. 1 × 1.5 cm, apex emarginate; stamens 10, unequal, 1.3–2.5 cm, filaments slightly puberulent at base; anthers oblong-elliptic, 2–3 mm; ovary ovate, 3–4 mm, densely glandular-setose; style 2.6–2.7 cm, as long as corolla, base glandular-hairy, glabrous above, stigma slightly expanded. Capsule slender, curved, 15–25 × ca. 4 mm, persistently glandular-setose. Fl. Apr–May, fr. Jul–Aug.

**9. *Rhododendron* subsect. *Glischra*** (Tagg) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 116. 1978.

粘毛杜鹃亚组 nian mao du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Glischra* Tagg in J. B. Stevenson, Sp. Rhodod. 135. 1930 [*“Glischrum”*].

Dwarf shrubs or small trees, bark rough; young shoots densely glandular-setose and long-glandular-hairy; bud scales persistent or deciduous. Leaf blade herbaceous to leathery, oblong, ovate or elliptic to lanceolate; abaxial surface with stipitate-glands or bristles; adaxial surface glabrous or with persistent bristles, even when mature. Inflorescence lax, 6–14-flowered; rachis 5–15 mm; calyx large, 5–15 mm, lobes ± rounded, lingulate; corolla campanulate to funnel-campanulate, 5-lobed, white flushed pink to pink, usually with a purple basal blotch and flecks, lacking nectar pouches; stamens 10; ovary densely glandular-hairy to glandular-setose; style glabrous or glandular or tomentose only at base.

- *Abies* forests, *Rhododendron* thickets; 3300–3700 m. SE Xizang, NW Yunnan.

**285. *Rhododendron ×erythrocalyx*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 110. 1920, pro sp.

显萼杜鹃 xian e du juan

*Rhododendron beimaense* I. B. Balfour & Forrest; *R. cymbomorphum* I. B. Balfour & Forrest; *R. erythrocalyx* subsp. *beimaense* (I. B. Balfour & Forrest) Tagg; *R. erythrocalyx* subsp. *docimum* I. B. Balfour ex Tagg; *R. erythrocalyx* subsp. *eucallum* (I. B. Balfour & Forrest) Tagg; *R. erythrocalyx* subsp. *truncatulum* (I. B. Balfour & Forrest) Tagg; *R. eucallum* I. B. Balfour & Forrest; ?*R. panteumorphum* I. B. Balfour & W. W. Smith; *R. truncatulum* I. B. Balfour & Forrest.

Shrubs, 2–3 m tall; old branches grayish white, smooth, sometimes with bark flaking; young branches glandular-hairy. Petiole terete, 10–15 mm, glabrous; leaf blade leathery, ovate-elliptic or oblong-elliptic, 6–8 × 2.5–4 cm; base rounded or subcordate, usually asymmetrical; margin thin, usually revolute; apex mucronate; both surfaces glabrous; abaxial surface grayish white; adaxial surface deep green; midrib raised abaxially, flat adaxially; lateral veins 15–18-paired, visible adaxially, inconspicuous abaxially. Inflorescence racemose-umbellate, 3–7-flowered; rachis ca. 3 mm, glabrous. Pedicel slender, 2–3 cm, sparsely glandular, glabrous; calyx lobes 5, large, ovate, outside nearly glabrous, margin glandular, 4–7 × ca. 4 mm; corolla funnelform-campanulate, milky-white or pink, rarely yellowish, 3.5–4 × ca. 4 cm; lobes 5, suborbicular, ca. 1.5 × 2 cm, apex emarginate; stamens 10, unequal, 1.2–2.5 cm, filaments glabrous, anthers large, oblong, ca. 3 mm; ovary cylindrical, ca. 5 mm, densely glandular; style ca. 2.5 cm, nearly equal to corolla, lower part glandular, stigma slightly expanded. Capsule slender, cylindrical, curved, ca. 2 × 0.5 mm, with short glandular hairs. Fl. May–Jun, fr. Aug–Oct.

- Coniferous forests, *Rhododendron* thickets; 3000–3900 m. E Xizang, NW Yunnan.

Field observations on Baima Shan in NW Yunnan, the type locality of *Rhododendron ×erythrocalyx* and several of the cited synonyms, indicate that this entity is a hybrid between *R. selense* and *R. wardii*. It is intermediate between, and occurs in mixed populations with, both parents.

If *Rhododendron panteumorphum* is indeed a synonym of *R. ×erythrocalyx*, then the former name would have priority (I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 257. 1916).

Six species; China, India, Myanmar; six species (three endemic) in China.

- 1a. Branchlets with persistent bud scales; leaf blade abaxially thickly white and brown tomentose and sparsely glandular ..... 291. *R. crinigerum*
- 1b. Branchlets without persistent bud scales; leaf blade abaxially not thickly tomentose.
- 2a. Corolla campanulate.
- 3a. Corolla pink, with purple basal blotch inside, 3.5–4 cm; leaf blade 14–22 cm ..... 286. *R. glischrum*
- 3b. Corolla white flushed rose, with or without purple flecks inside at base, ca. 5 cm; leaf blade 9–12 cm ..... 287. *R. habrotrichum*
- 2b. Corolla funnel-campanulate.
- 4a. Pedicels densely tomentose; calyx lobes unequal; leaf blade oblong to obovate, abaxial surface glabrescent ..... 290. *R. ×diphrocalyx*
- 4b. Pedicels densely glandular-setose; calyx lobes well-developed, regular; leaf blade ovate, elliptic, lanceolate or oblong-lanceolate to oblanceolate, abaxial surface hairy at least on veins.
- 5a. Leaf blade ovate, lanceolate or elliptic, abaxial surface setulose and tomentose ..... 288. *R. adenosum*
- 5b. Leaf blade oblong-lanceolate to oblanceolate, abaxial surface with vesicular hairs on the veins ..... 289. *R. vesiculiferum*

**286. *Rhododendron glischrum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 229. 1916.

粘毛杜鹃 nian mao du juan

Shrubs or small trees, 2.4–7 m tall; older branches stout, grayish, glabrous, shoots ca. 8 mm in diam. below inflorescence; young shoots with glutinous glandular setae. Petiole stout, 18–25 mm, densely glandular-setose; leaf blade subleathery, oblong to broadly oblanceolate, 14–22 × 4.6–6.5 cm; base cuneate or narrowly rounded to subcordate; margin herbaceous, ciliate; apex obtuse or acute; abaxial surface smooth to rugose, setose, glandular-setose and tomentose; adaxial surface smooth to rugose, glabrous except for glandular-setose midrib near base, or setose; midrib raised abaxially, grooved adaxially; lateral veins 13–17 on each side. Inflorescence 10–12-flowered; rachis ca. 15 mm, densely glandular and tomentose. Pedicel 3–4.2 cm, glandular-setose; calyx lobes 5, ca. 1.3 cm, unequal, lingulate, densely glandular-setose, ciliate; corolla campanulate, pink, with purple flecks and basal blotch, 3.5–4 cm, lobes 5, emarginate; stamens 10, 1–3 cm, filaments pubescent at base; ovary conoid, ca. 5 mm, densely glandular-hairy; style 3–4 cm, glabrous or glandular at base. Capsule ca. 15 mm, base enclosed by persistent calyx. Fl. May–Jun, fr. Sep–Oct.

Forests, forest margins, thickets; 2400–3600 m. S Xizang, NW Yunnan [NE India, Myanmar].

- 1a. Leaf blade with both surfaces glabrous except for glandular-setose base of midrib, abaxial surface smooth to rugose ..... 286a. subsp. *glischrum*
- 1b. Leaf blade with both surfaces persistently setose ..... 286b. subsp. *rude*

**286a. *Rhododendron glischrum*** subsp. *glischrum*

粘毛杜鹃(原亚种) nian mao du juan (yuan ya zhong)

Leaf blade with both surfaces glabrous except for glandular-setose base of midrib; abaxial surface smooth to rugose. Fl. May–Jun, fr. Sep–Oct.

Forest margins, thickets; 2500–3300 m. S Xizang, NW Yunnan [Myanmar].

**286b. *Rhododendron glischrum*** subsp. *rude* (Tagg & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 117. 1978.

红粘毛杜鹃 hong nian mao du juan

*Rhododendron rude* Tagg & Forrest in J. B. Stevenson, Sp. Rhodod. 141. 1930.

Leaf blade with both surfaces persistently setose.

Forests, thickets; 2400–3600 m. SE Xizang, NW Yunnan [NE India].

**287. *Rhododendron habrotrichum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 232. 1916.

粗毛杜鹃 cu mao du juan

Shrubs, 1.2–3.5 m tall; older branches grayish brown, glabrous, 4–5 mm in diam. below inflorescence; young shoots glandular-setose. Petiole stout, 10–20 mm, densely brown-glandular-setose; leaf blade subleathery, oblong-elliptic to obovate, 9–12 × 4.5–6.5 cm; base rounded or slightly cordate; margin ciliate-setulose; apex acute; abaxial surface pale green, glabrous except for glandular-setose midrib and veins; adaxial surface smooth, green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 15–16-paired, impressed adaxially. Inflorescence 10-flowered; rachis ca. 10 mm. Pedicel stout, ca. 2 cm, densely glandular-setose; calyx red; lobes 5, ca. 1.5 mm, rounded, with similar hairs, ciliate; corolla campanulate, white flushed rose to pink, with or without purple flecks and basal blotch, ca. 5 cm, lobes 5, ca. 1.5 × 2.5 cm, emarginate; stamens 10, unequal, 2.5–3.5 cm, filaments pubescent at base; ovary cylindrical, ca. 5 mm, densely glandular-setose; style ca. 3.5 cm, glandular-setose at base. Capsule cylindrical, ca. 20 × 6 mm, setose, calyx persistent. Fl. Jun–Jul, fr. Aug–Oct.

*Rhododendron* thickets, rocky slopes; 2700–3400 m. W Yunnan [NE Myanmar].

**288. *Rhododendron adenosum*** (Cowan & Davidian) Davidian, Quart. Bull. Amer. Rhododendron Soc. 32: 81. 1978.

枯鲁杜鹃 ku lu du juan

*Rhododendron glischrum* I. B. Balfour & W. W. Smith

var. *adenosum* Cowan & Davidian, Notes Roy. Bot. Gard. Edinburgh 21: 147. 1953; *R. kuluense* D. F. Chamberlain, nom. illeg. superfl.

Shrubs; young shoots densely glandular-setose. Petiole densely glandular-setose; leaf blade leathery, ovate to lanceolate or elliptic, 7–10.5 × 2.4–3.4 cm; margin cartilaginous, papillate; apex acute to acuminate; abaxial surface setose and sparsely tomentose, tomentum quickly lost at least towards apex, or persistent, midrib densely glandular-setose; adaxial surface with a few setae on midrib, glabrous when mature. Inflorescence lax, 6–8-flowered; rachis ca. 5 mm. Pedicel 1.5–2.5 cm, densely glandular-setose; calyx ca. 7 mm, densely glandular-setose; corolla funnel-campanulate, pale pink with purple flecks, 3.5–5 cm; ovary densely glandular-setose; style glabrous. Capsule curved, ca. 20 × 4 mm.

- *Picea* forests; 3300–3600 m. SW Sichuan (Muli).

In the protologue of *Rhododendron adenosum* the earlier name *R. glischrum* var. *adenosum* (based on the same type: *J. F. C. Rock* 18228) was cited, but without a full bibliographic reference. *Rhododendron adenosum* was nevertheless validly published as a new combination under Art. 33.2 of the Saint Louis Code because otherwise it would be validly published as the name of a new taxon. The name *R. kuluense* was published as a *nomen novum* for *R. glischrum* var. *adenosum*, but slightly later in 1978 (18 May) than was *R. adenosum* (before 16 May); *R. kuluense* is therefore illegitimate under Art. 52.1 because it was nomenclaturally superfluous when published.

**289. *Rhododendron vesiculiferum*** Tagg in J. B. Stevenson, Sp. Rhodod. 143. 1930.

泡毛杜鹃 pao mao du juan

Shrubs or small trees, 1.5–3 m tall, older branches pale brown, glabrous; young shoots pale purple, 3–4 mm in diam., densely glandular-setose. Petiole 10–20 mm, densely glandular-setose; leaf blade leathery, oblong-lanceolate or oblanceolate, 7.8–16.5 × 3–4.5 cm; base rounded or subcordate; margin ciliate; apex acute; abaxial surface glandular-setose, hairs vesicular; adaxial surface rugose to bullate, glabrous or with a few bristles at base when mature; midrib raised abaxially; lateral veins 20–24-paired, raised abaxially, strongly impressed adaxially. Inflorescence 10–15-flowered; rachis ca. 10 mm, tomentose. Pedicel 1.5–2.5 cm, densely glandular-setose, also with short vesicular hairs; calyx lobes 5, ca. 10 mm, glandular-setose; margin ciliate; corolla funnel-campanulate, white to rose-purple, with purple flecks and a purple basal blotch, 3–3.5 cm; stamens 10, 1.5–2.5 cm, filaments pubescent at base; ovary ovoid, ca. 5 mm, densely glandular-setose, and with short vesicular hairs; style glabrous, with similar hairs at the base. Capsule cylindrical, ca. 16 × 6 mm, base with persistent calyx. Fr. Aug.

Forests, rocky slopes; 2400–3300 m. SE Xizang, W Yunnan [NE Myanmar].

**290. *Rhododendron ×diphrocalyx*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 11: 55. 1919.

腾冲杜鹃 teng chong du juan

*Rhododendron burriflorum* I. B. Balfour & Forrest.

Shrubs, 1–5 m tall; older branches brownish and rough; shoots ca. 5 mm in diam. below inflorescence; young shoots with glandular and eglandular setae. Petiole 10–20 mm, glandular-setose; leaf blade subleathery, oblong-elliptic or broadly elliptic to obovate, 7–12 × 2.5–5 cm; base rounded; margin revolute; apex obtuse, cuspidate; both surfaces glabrous except for glandular-setose midrib and main veins, setae towards base; abaxial surface glaucous; adaxial surface green, glabrous when mature, midrib raised abaxially, grooved adaxially; lateral veins 12–14-paired. Inflorescence 10–20-flowered; rachis red, tomentose. Pedicel stout, 1.5–2 cm, persistently tomentose, not glandular; calyx red, large and one-sided, fleshy; lobes 5, 6–25 mm, unequal, rounded, ciliate; corolla funnel-campanulate, pale to deep crimson, with crimson spots and basal blotch; lobes 5, rounded, ca. 1.5 cm, emarginate; stamens 10, unequal, 2–3 cm, filaments pubescent at base; ovary conoid, ca. 6 mm, densely tomentose; style base densely tomentose. Capsule curved, ca. 25 × 4 mm.

- Forests, thickets; 3000–3400 m. W Yunnan.

This entity is evidently a hybrid, probably between *Rhododendron habrotrichum* and a species in *R.* subsect. *Neriiflora*.

**291. *Rhododendron crinigerum*** Franchet, J. Bot. (Morot) 12: 260. 1898.

长粗毛杜鹃 chang cu mao du juan

Shrubs 1–6 m tall; bark dark gray; young shoots with sparse short-glandular hairs; bud scales persistent for some years. Petiole 10–20 mm, densely glandular-setose; leaf blade leathery, lanceolate or oblanceolate, 9–20 × 1.5–3(–6) cm; base obtuse; margin revolute; apex acuminate; abaxial surface usually densely fawn to red-brown tomentose, interspersed with glandular hairs, midrib densely glandular and tomentose; adaxial surface glabrous when mature, rugose, midrib sparsely glandular and hairy; midrib prominent abaxially, grooved adaxially; lateral veins 15–19-paired. Inflorescence 7–16-flowered; rachis 10–15 mm, pubescent. Pedicel 2–3 cm, densely glandular-setose and sparsely tomentose; calyx cup-shaped; lobes 5, 5–10 mm, irregular, densely glandular-setose; corolla campanulate, white to pink, with purple flecks and basal blotch, 3–3.5 cm, lobes 5, rounded, ca. 1.5 cm, emarginate; stamens 10, unequal, 1.5–3 cm, filaments pubescent at base; ovary ovoid, ca. 4 mm, glandular-hairy; style glandular at base. Capsule cylindrical, 15–20 × ca. 7 mm, glandular, calyx persistent. Fl. May–Jun, fr. Aug–Sep.

- Forests, valleys, rocky slopes, cliffs; 2200–4200 m. NW Sichuan, SE Xizang, NW Yunnan.

- 1a. Abaxial leaf surface sparsely glandular, with a dense matted indumentum .... 291a. var. *crinigerum*
- 1b. Abaxial leaf surface densely glandular, with a thinner indumentum ..... 291b. var. *euadenium*

**291a. *Rhododendron crinigerum* var. *crinigerum***

长粗毛杜鹃(原变种) chang cu mao du juan (yuan bian zhong)

*Rhododendron ixeticum* I. B. Balfour & W. W. Smith.

Abaxial leaf surface indumentum densely matted, interspersed with sparse glands. Fl. May–Jun, fr. Aug–Sep.

• Forests, rocky slopes; 2200–4200 m. NW Sichuan, SE Xizang, NW Yunnan.

Forrest, Notes Roy. Bot. Gard. Edinburgh 16: 190. 1931.

腺背长粗毛杜鹃 xian bei chang cu mao du juan

Abaxial leaf surface sparsely tomentose and densely glandular.

• Valleys, cliffs; 3600–3700 m. NW Yunnan.

**291b. *Rhododendron crinigerum* var. *euadenium* Tagg &**

**10. *Rhododendron* subsect. *Irrorata* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 548. 1949.**

露珠杜鹃亚组 lu zhu du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Irrorata* Tagg in J. B. Stevenson, Sp. Rhodod. 332. 1930 [*“Irroratum”*].

Shrubs or small trees; young shoots mostly glabrous or glabrescent, occasionally glandular or tomentose. Leaf blade leathery, lanceolate or elliptic-lanceolate; apex acute; abaxial surface usually glabrous when mature, more rarely with a veil of persistent thin indumentum at maturity (*R. agastum*, *R. leptopeplum*, and *R. tanastylum* var. *pennivenium*). Inflorescence 2–21-flowered; rachis 5–40 mm. Calyx usually reduced to a rim; corolla campanulate or tubular- to open-campanulate, 5-lobed, (7-lobed in *R. anthosphaerum*), pink, white, yellow or deep crimson, with darker flecks and also sometimes with nectar pouches at the base; stamens 10–14; ovary glabrous, tomentose or glandular-hairy; style glabrous or glandular to tip. Capsule oblong-cylindric, 1–2.5 cm.

About 24 species: Bhutan, China, India, Indonesia (Sumatra), Malaysia, Myanmar, Vietnam; 21 species (14 endemic) in China.

Some species are important horticultural plants in China, e.g., *Rhododendron annae* and *R. irroratum*.

- 1a. Abaxial leaf surface with persistent thin indumentum, or at least with hairs on midrib.
  - 2a. Leaf blade 13–17(–20.5) cm, adaxial surface with strongly impressed lateral veins, abaxial surface with scattered setose glands ..... 300. *R. gongshanense*
  - 2b. Leaf blade never exceeding 15 cm, adaxial surface with at most lightly impressed lateral veins, abaxial surface without setose glands.
    - 3a. Abaxial leaf surface with persistent thin indumentum; ovary tomentose and stipitate-glandular.
      - 4a. Leaf blade elliptic or elliptic-lanceolate; style glandular to tip ..... 299. *R. agastum*
      - 4b. Leaf blade lanceolate or long-elliptic; style glabrous or glandular only at base ..... 295. *R. leptopeplum*
    - 3b. Abaxial leaf surface with only midrib hairy, otherwise glabrous.
      - 5a. Leaf blade subleathery, lanceolate or oblanceolate, base cuneate; corolla rose.
        - 6a. Pedicels, ovary, and style glabrous; leaf blade narrowly lanceolate, abaxial surface of midrib with a thin woolly tomentum ..... 303. *R. araiophyllum*
        - 6b. Pedicels, ovary, and lower part of style with dense hairs; leaf blade obovate, abaxial surface of midrib with dense brown hairs ..... 307. *R. pingbianense*
      - 5b. Leaf blade leathery, lanceolate or long-elliptic, base rounded; corolla yellowish or deep crimson.
        - 7a. Pedicel and ovary glabrous; leaf blade 3–4.5 cm wide, abaxial surface of midrib with brown hairs; corolla deep crimson ..... 301. *R. ramsdenianum*
        - 7b. Pedicel and ovary densely hairy; leaf blade 1.5–3.5 cm wide, abaxial surface of midrib thinly rufous tomentose or stellate-tomentose; corolla yellowish or purplish.
          - 8a. Leaf blade 1.5–2.5 cm wide, abaxial surface of midrib thinly tomentose, base symmetrical; corolla yellowish ..... 308. *R. laojunshanense*
          - 8b. Leaf blade 2.5–3.5 cm wide, abaxial surface of midrib stellate-tomentose, base asymmetrical; corolla purplish with purple blotch and flecks ..... 310. *R. sikangense*
- 1b. Abaxial leaf surface glabrous, though sometimes with sessile punctate glands on midribs and lateral veins.
  - 9a. Ovary eglandular, tomentose or glabrous; style usually glabrous, rarely tomentose at base.
    - 10a. Calyx usually ca. 10 mm; ovary and style base tomentose ..... 312. *R. dimitrum*
  - 10b. Calyx 1–3 mm; ovary and style usually glabrous or puberulent.
    - 11a. Leaves subleathery, lanceolate or oblanceolate, apex obtuse or acute; corolla 6–7-lobed ..... 292. *R. anthosphaerum*
    - 11b. Leaf blade leathery; apex acute; corolla 5-lobed.
      - 12a. Rachis stout, 5–20 mm, glabrous; inflorescence 5–10-flowered.
        - 13a. Rachis 0.5–1 cm; corolla fleshy, deep crimson; leaves elliptic-lanceolate ..... 293. *R. tanastylum*
        - 13b. Rachis 1.5–2 cm; corolla not fleshy, purplish crimson; leaves oblanceolate ..... 297. *R. spanotrichum*
      - 12b. Rachis slender, 15–35 mm, tomentose; inflorescence usually 8–15-flowered.
        - 14a. Ovary strigose; leaves lanceolate or elliptic-lanceolate, adaxial surface not wax-coated ..... 302. *R. kendrickii*
        - 14b. Ovary glabrous; leaves oblanceolate, adaxial surface usually wax-coated ..... 294. *R. lukiangense*

- 9b. Ovary glandular, or glandular-setose and tomentose; style glandular or glabrous.
- 15a. Ovary glandular or glandular-setose; style glabrous or glandular only in lower half.
- 16a. Leaf blade long-elliptic or obovate-elliptic, 8–13 cm; apex obtuse or rounded; corolla 4.5–5 cm; pedicel and ovary with dense dendritic hairs; calyx lobes rounded, ca. 3 × 4 mm ..... 296. *R. papillatum*
- 16b. Leaf blade elliptic-lanceolate or ovate-lanceolate, 5–10 cm, apex cuspidate; corolla 2.5–4 cm; pedicel and ovary without dendritic hairs; calyx 1–3.5 mm.
- 17a. Ovary and lower part of style glandular-hairy; pedicel glandular-setose ..... 309. *R. brevinerve*
- 17b. Ovary glandular-setose; style glabrous; pedicel sparsely stipitate-glandular ..... 306. *R. guizhouense*
- 15b. Ovary glandular; style glandular to tip.
- 18a. Corolla tubular-campanulate, reddish purple; leaves narrowly lanceolate, 8–17 × 2–3 cm; petiole and pedicel densely glandular-setose ..... 311. *R. mengtzensense*
- 18b. Corolla campanulate or open-campanulate; leaves lanceolate to elliptic-lanceolate, not more than 12 cm; petiole and pedicel glabrous.
- 19a. Corolla campanulate, 3.5–5 cm, white to yellow ..... 298. *R. irroratum*
- 19b. Corolla open-campanulate or cup-shaped, 2–3(–4) cm, white or rose.
- 20a. Leaf blade thick, leathery, 2.5–5 cm ..... 304. *R. aberconwayi*
- 20b. Leaf blade subleathery, 7–10 cm ..... 305. *R. amnae*

**292. *Rhododendron anthosphaerum*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 215. 1912.

团花杜鹃 tuān huā dù juān

*Rhododendron anthosphaerum* var. *eritimum* (I. B. Balfour & W. W. Smith) Davidian; *R. anthosphaerum* subsp. *hylothreptum* (I. B. Balfour & W. W. Smith) Tagg; *R. chawchiense* I. B. Balfour & Farrer; *R. eritimum* I. B. Balfour & W. W. Smith; *R. eritimum* subsp. *chawchiense* (I. B. Balfour & Farrer) Tagg; *R. eritimum* subsp. *gymnogynum* (I. B. Balfour & Forrester) Tagg; *R. eritimum* subsp. *heptamerum* (I. B. Balfour) Tagg; *R. eritimum* subsp. *persicinum* (Handel-Mazzetti) Tagg; *R. gymnogynum* I. B. Balfour & Forrester; *R. heptamerum* I. B. Balfour; *R. hylothreptum* I. B. Balfour & W. W. Smith; *R. persicinum* Handel-Mazzetti.

Shrubs or small trees, 2–7 m tall; young branches stout, glabrous. Leaf blade thinly leathery or leathery, elliptic-oblongate or long-elliptic, 8–14 × 2.5–3.5 cm; base cuneate; margin revolute; apex acuminate to acute, apiculate; abaxial surface pale, thinly clad with scattered hairs; midrib prominent; lateral veins 17–24-paired. Inflorescence racemose-umbellate, 8–10-flowered; rachis 5–10 mm, floccose. Pedicel 1–1.5 cm, sparsely rufous-tomentose or glabrescent; calyx cupular, lobes 6 or 7, ca. 1 mm; corolla tubular-campanulate, rose-magenta or crimson to magenta-blue, with a basal black-crimson blotch, 3–3.5 cm, nectar pouches present; lobes 6 or 7, suborbicular, ca. 1 × 1–1.5 cm, emarginate, crenate; stamens 13–14, unequal, 1.5–2.5 cm, filaments slender, glabrous or puberulent at base; ovary cylindrical, ca. 5 × 2.5 mm, glabrous; style as long as corolla, glabrous, stigma small. Capsule 15–25 × 6–8 mm, glabrous, 7–8-lobed at apex when dry. Fl. Apr–May, fr. Jul–Aug.

Mixed *Pinus*-broad-leaved forests, open slopes; 2000–3500 m. SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**293. *Rhododendron tanastylum*** I. B. Balfour & Kingdon Ward, Trans. Bot. Soc. Edinburgh 27: 217. 1917.

光柱杜鹃 guāng zhū dù juān

Small trees or shrubs, 2–6 m tall; older shoots glabrous; young shoots glabrescent. Petiole stout, terete, 10–15 mm, glabrous; leaf blade leathery, sometimes thinly so, ovate-lanceolate

to elliptic, 6–17 × 2.5–5.5 cm; base rounded or broadly cuneate; margin not undulate; apex acuminate or obtuse; both surfaces glabrous; abaxial surface paler; adaxial surface matt at maturity; midrib raised; lateral veins 17–20-paired. Inflorescence racemose-umbellate, 4–8-flowered; rachis 10–20 mm, glabrous. Pedicel ca. 1 cm; calyx cupular, lobes 5, 1–3 mm, ovate or triangular, glabrous; corolla tubular campanulate, fleshy, white or pink to deep crimson, with darker spots, 4–4.5 cm, 5 black nectar pouches at base; lobes 5, orbicular, 2–2.5 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous or puberulent at base; ovary conical, 5–8 × ca. 3 mm, glabrous or slightly pubescent; style stout, 3–3.5 cm, glabrous, stigma discoid. Capsule oblong, blunt, ca. 17 × 7 mm, glabrous. Fl. Mar–May, fr. Sep–Nov.

Evergreen broad-leaved forests, *Pinus* forests, thickets, valleys; 1700–3700 m. E Xizang, W Yunnan [NE India, NE Myanmar].

- 1a. Leaf blade leathery, ovate-lanceolate or elliptic, 6–11 × 2.5–4 cm; corolla pink or deep crimson; ovary glabrous ..... 293a. var. *tanastylum*
- 1b. Leaf blade thinly leathery, oblong-elliptic, 10–17 × 3.5–5.5 cm; corolla white or pink; ovary slightly pubescent ..... 293b. var. *lingzhiense*

**293a. *Rhododendron tanastylum* var. *tanastylum***

光柱杜鹃(原变种) guāng zhū dù juān (yuán biàn zhǒng)

*Rhododendron cerochitum* I. B. Balfour & Forrester; *R. ombrochares* I. B. Balfour & Kingdon Ward.

Leaf blade leathery, ovate-lanceolate or elliptic, 6–11 × 2.5–4 cm. Corolla pink or deep crimson; ovary glabrous. Fl. Mar–May, fr. Sep–Nov.

Evergreen broad-leaved forests, *Pinus* forests; 1700–3300 m. W Yunnan [NE India, NE Myanmar].

**293b. *Rhododendron tanastylum* var. *lingzhiense*** M. Y. Fang, Bull. Bot. Res., Harbin 12: 221. 1992.

林芝光柱杜鹃 lín zhī guāng zhū dù juān

*Rhododendron rubropunctatum* T. L. Ming, Acta Bot. Yunnan. 6: 150. 1984 [“*rubro-punctata*”], not H. Léveillé & Vaniot (1911), nor Hayata (1913).

Leaf blade thinly leathery, oblong-elliptic, 10–17 × 3.5–5.5 cm. Corolla white or pink; ovary slightly pubescent. Fl. May.

- Thickets, valleys; ca. 3700 m. E Xizang.

**294. *Rhododendron lukiangense*** Franchet, J. Bot. (Morot) 12: 257. 1898.

蜡叶杜鹃 *la ye du juan*

*Rhododendron admirabile* I. B. Balfour & Forrest; *R. adroserum* I. B. Balfour & Forrest; *R. ceraceum* I. B. Balfour & W. W. Smith; *R. gymnanthum* Diels; *R. lukiangense* subsp. *admirabile* (I. B. Balfour & Forrest) Tagg; *R. lukiangense* subsp. *adroserum* (I. B. Balfour & Forrest) Tagg; *R. lukiangense* subsp. *ceraceum* (I. B. Balfour & W. W. Smith) Tagg; *R. lukiangense* subsp. *gymnanthum* (Diels) Tagg.

Shrubs or small trees, 2–4 m tall; older branches gray, bark exfoliating; young shoots stout, glabrous. Petiole cylindrical, 10–20 mm, glabrous; leaf blade leathery, elliptic to oblanceolate, 8–14 × 2.5–4.5 cm; base cuneate; margin entire or slightly undulate; apex acuminate; both surfaces glabrous; abaxial surface pale green, glabrous; adaxial surface dark green, with thin wax-coating at maturity, somewhat shiny, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 22–24-paired, distinct abaxially, obscure adaxially. Inflorescence racemose-umbellate, 7–13-flowered; rachis 15–30 mm, pubescent. Pedicel 1–1.5 cm, usually glabrous; calyx lobes 5, 1–2 mm, ovate-triangular, glabrous; corolla tubular-campanulate, pale to deep magenta rose, with purple flecks and basal blotch, 3–4.5 cm, lobes 5, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, 1.5–3 cm unequal, filaments glabrous; ovary narrowly cylindrical, 5–7 × ca. 2 mm, glabrous; style 3.5–4 cm, glabrous, stigma small. Capsule narrowly cylindrical, ca. 30 × 5 mm, glabrous and smooth; calyx persistent, ca. 3 mm at maturity. Fl. Apr–May.

- *Pinus* forests, mixed woodlands, thickets, valleys, stream banks; 2600–3500 m. SW Sichuan, SE Xizang, NW Yunnan.

**295. *Rhododendron leptopeplum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 82. 1919.

腺绒杜鹃 *xian rong du juan*

Shrubs or small trees, 6–9 m tall; branches stout; young shoots glandular and pubescent at first, later smooth and glabrous. Petiole cylindrical, 10–20 mm, glandular and floccose; leaf blade leathery, oblanceolate to oblong-elliptic, 6–12.5 × 2–3.5 cm; base rounded or broadly cuneate; apex acute to obtuse; abaxial surface pale, persistently thinly loosely whitish-tomentose; adaxial surface green, smooth, glabrous or with vestiges of juvenile hairs on the midrib; midrib prominent abaxially, grooved adaxially; lateral veins 17–19-paired, obscure. Inflorescence racemose-umbellate, 10–12-flowered; rachis 10–15 mm, pubescent. Pedicel 1–1.5 cm, glandular-hairy; calyx lobes 5, 4–6 mm, rounded, membranous, glabrous except for glandular margin; corolla campanulate, milky white to rose, with crimson flecks at base, ca. 4–4.5 cm, lobes 5, orbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.5–3 cm, filaments pubescent at base; ovary conoid, ca. 5 mm, densely glandular; style ca. 3 cm, glabrous; stigma slightly swollen. Capsule not known. Fl. Mar.

- *Rhododendron* thickets, slopes; 3000–4000 m. NW Yunnan.

**296. *Rhododendron papillatum*** I. B. Balfour & R. E. Cooper, Notes Roy. Bot. Gard. Edinburgh 13: 282. 1922.

乳突杜鹃 *ru tu du juan*

*Rhododendron epapillatum* I. B. Balfour & R. E. Cooper.

Shrubs or small trees, 2–5 m tall; young shoots glabrescent. Petiole cylindrical, 10–25 mm, glabrous; leaf blade subleathery, oblong-elliptic or oblanceolate, broadest above middle of blade, 8–13 × 2–4 cm; base rounded to broadly cuneate; margin revolute; apex acute or obtuse; abaxial surface pale, papillate, indumentum very thin, veil-like, detersile; adaxial surface green, glabrous; midrib prominent abaxially, deeply impressed adaxially; lateral veins 14–17-paired. Inflorescence racemose-umbellate, 5–9-flowered; rachis 20–35 mm, whitish tomentose. Pedicel 1.5–2.5 cm, densely glandular and dendroid-tomentose; calyx fleshy; lobes 5, 2–3 mm, rounded or triangular, margin glandular; corolla campanulate, pale cream to pink, with purple flecks, blotched at base, 4.5–5 cm, glabrous inside; lobes 5, rounded, ca. 2 × 2.5 cm, emarginate; stamens 10, 2–4 cm, unequal, filaments pubescent at base; ovary conoid-cylindrical, 5–6 mm, dendroid-tomentose and glandular-hairy; style 3.5–4 cm, glabrous except for a few glands; stigma small, lobulate. Capsule not known. Fl. Apr.

- Abies* forests, *Rhododendron* thickets; 2400–3000 m. SE Xizang [Bhutan, NE India].

**297. *Rhododendron spanotrichum*** I. B. Balfour & W. W. Smith, Trans. Bot. Soc. Edinburgh 27: 214. 1917.

红花杜鹃 *hong hua du juan*

Small trees, 6–7 m tall; branches usually stout, 3–5 mm in diam. below inflorescence. Petiole cylindrical, 10–15 mm, glabrous; leaf blade leathery, obovate-elliptic to oblanceolate, 7–9 × 2–4 cm; base cuneate; margin revolute; apex acuminate; abaxial surface yellowish green, with red punctate bases of fallen glands or hairs, glabrous at maturity; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 14–20-paired, obscure. Inflorescence racemose-umbellate, 7–10-flowered; rachis 15–20 mm, glabrous. Pedicel 0.7–1 cm, puberulent or glabrous; calyx cupular; lobes 5, 1–1.5 mm, glabrous; corolla campanulate, crimson, with a dark blotch at base, 4–4.5 cm, lobes 5, suborbicular, 2–2.5 cm, emarginate, crenulate; stamens 10, unequal, 2.5–3 cm, filaments glabrous; ovary conoid-cylindrical, slightly grooved, 7–8 mm, glabrous though with apex sparsely hairy; style ca. 2.5 cm, glabrous, stigma slightly swollen. Capsule not known. Fl. Mar.

- Evergreen broad-leaved forests; 1500–2300 m. SE Yunnan.

**298. *Rhododendron irroratum*** Franchet, Bull. Soc. Bot. France 34: 280. 1887.

露珠杜鹃 *lu zhu du juan*

Shrubs or small trees, 2–9 m tall; young shoots thinly tomentose and with glandular hairs that soon wither. Petiole cylindrical, 10–20 mm, glabrescent; leaf blade leathery, oblanceolate to narrowly elliptic, 7–14 × 2–4 cm; base rounded or broadly cuneate; margin entire or undulate; apex acuminate; both surfaces glabrous when mature; midrib distinct and promi-

ment abaxially, deeply grooved adaxially; lateral veins 17–20-paired, impressed. Inflorescence laxly racemose-umbellate, 7–15-flowered; rachis 20–40 mm, pubescent and rufous glandular-hairy. Pedicel stout, 1–2 cm, densely glandular-hairy, sometimes tomentose; calyx lobes 5, ca. 2 mm, rounded or broadly triangular, margin glandular; corolla tubular-campanulate, white or creamy yellow to violet-rose, with greenish or purple flecks, 3–4 cm, 5 nectar pouches at base; lobes 5, orbicular, 2–2.5 × ca. 3 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments pubescent at base; ovary conoid, 5–6 mm, 8–10-lobed, densely glandular-hairy; style sometimes glandular to the tip, stigma small. Capsule oblong-cylindric, 15–20 × 6–10 mm. Fl. Mar–May, fr. Sep–Oct.

Evergreen broad-leaved forests, mixed forests; 1700–3500 m. W Guizhou, SW Sichuan, N and SE Yunnan [N Vietnam].

- 1a. Corolla yellowish, cream or pinkish, without tomentum; calyx, ovary, and style glandular-hairy only ..... 298a. subsp. *irroratum*
- 1b. Corolla pink, pubescent within; calyx, ovary, and style glandular-hairy and tomentose ..... 298b. subsp. *pogonostylum*

**298a. *Rhododendron irroratum* subsp. *irroratum***

露珠杜鹃(原亚种) lu zhu du juan (yuan ya zhong)

*Rhododendron maximowiczianum* H. Léveillé; *R. ningyuenense* Handel-Mazzetti.

Pedicel, calyx and ovary glandular but not tomentose; corolla usually yellow or pinkish, rarely cream, without tomentum; style glandular to tip. Fl. Mar–May, fr. Sep–Oct.

• Evergreen broad-leaved forests, mixed forests; 1800–3500 m. NW Guizhou, SW Sichuan, N Yunnan.

**298b. *Rhododendron irroratum* subsp. *pogonostylum*** (I. B. Balfour & W. W. Smith) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 117. 1978.

红花露珠杜鹃 hong hua lu zhu du juan

*Rhododendron pogonostylum* I. B. Balfour & W. W. Smith, Trans. Bot. Soc. Edinburgh 27: 210. 1917; *R. adenostemonum* I. B. Balfour & W. W. Smith.

Pedicel, calyx, ovary, and style tomentose and glandular-hairy; corolla usually cream to deep pink, pubescent below within. Fl. Mar–Apr.

Evergreen broad-leaved forests; 1700–3000 m. W Guizhou, SE Yunnan [N Vietnam].

**299. *Rhododendron agastum*** I. B. Balfour & W. W. Smith, Trans. Bot. Soc. Edinburgh 27: 178. 1917.

迷人杜鹃 mi ren du juan

Shrubs, 2–3 m tall, older branches glabrescent, branches stout; young shoots thinly floccose and sparsely glandular. Petiole cylindrical, 10–20 mm, pubescent and glandular-hairy; leaf blade leathery, elliptic to ovate-elliptic, 7–12 × 2–5 cm; base rounded or cuneate; margin entire; apex obtuse or slightly cuspidate or acute to acuminate; abaxial surface indumentum thin,

pale olive to fawn, veil-like; adaxial surface green, glabrous, midrib prominently raised abaxially; lateral veins 12–13-paired, slightly impressed. Inflorescence racemose-umbellate, 5–10-flowered; rachis 15–30 mm, pubescent and glandular. Pedicel stout, 1–1.5 cm, glandular; calyx discoid; lobes 5–7, minute, glandular and gland-fringed; corolla tubular-campanulate, pink, with crimson blotch, 3.5–5 cm, nectar pouches at base, glabrous within, lobes 5–7, suborbicular, 1.5–1.7 × 2–2.2 cm, emarginate; stamens 10–14, unequal, 2–3 cm, filaments pubescent at base; ovary cylindric-conoid, ca. 6 mm, glandular-hairy, with a few strigose hairs or tomentose; style stout, 2.5–4 cm, glandular to tip or glabrous; stigma slightly swollen, discoid. Capsule curved, ca. 30 × 10 mm. Fl. Apr–May, fr. Jul–Aug.

Mixed forests, broad-leaved forests, valleys; 1900–3300 m. ?E Guizhou, N and W Yunnan [NE Myanmar].

*Rhododendron agastum* is probably a hybrid between *R. decorum* and *R. delavayi*, as suggested by field observations at the type locality (Yangbi, near Dali in W Yunnan) and as mentioned by George Forrest in the field notes accompanying the type specimen. This entity would not, therefore, belong in *R.* subsect. *Irrorata*, as given in FRPS (57(2): 130. 1994) and here.

- 1a. Leaf apex obtuse or rounded; filaments pubescent in lower half; style glandular to tip; corolla 5-lobed ..... 299a. var. *agastum*
- 1b. Leaf apex acute or acuminate, filaments and style glabrous; corolla 6–7-lobed ..... 299b. var. *pennivenium*

**299a. *Rhododendron agastum* var. *agastum***

迷人杜鹃(原变种) mi ren du juan (yuan bian zhong)

Leaf blade elliptic to elliptic-lanceolate, 2–5 cm wide; base rounded or broadly cuneate; apex obtuse, slightly cuspidate; corolla lobes 6 or 7; filaments pubescent in lower half; ovary glandular-hairy; style glandular to tip. Fl. Apr–May, fr. Jul–Aug.

• Evergreen broad-leaved forests, valleys; 1900–2500 m. ?E Guizhou, N and W Yunnan.

The occurrence of this variety in E Guizhou requires confirmation.

**299b. *Rhododendron agastum* var. *pennivenium*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 152. 1984.

光柱迷人杜鹃 guang zhu mi ren du juan

*Rhododendron pennivenium* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 55. 1920; *R. tanastylum* I. B. Balfour & Kingdon Ward var. *pennivenium* (I. B. Balfour & Forrest) D. F. Chamberlain.

Leaf blade narrow, oblong-elliptic to broadly lanceolate, 2.5–3.5 cm wide; base cuneate; apex acute to acuminate; corolla lobes 5; filaments glabrous; ovary densely tomentose and sparsely glandular-hairy; style glabrous. Fl. Mar–Apr.

Mixed forests, broad-leaved forests; 2400–3300 m. W Yunnan [NE Myanmar].

It is possible that var. *pennivenium* is a variety of *Rhododendron tanastylum*, not of *R. agastum* as given in FRPS (57(2): 130. 1994) and



here. The leaf indumentum does not indicate a close relationship with *R. agastum*.

**300. *Rhododendron gongshanense*** T. L. Ming, Acta Bot. Yunnan. 6: 151. 1984.

贡山杜鹃 gong shan du juan

Shrubs, 2–4 m tall; older branches glabrous; branches stout; young shoots usually ca. 5 mm in diam., glandular-hairy. Petiole 6–10 mm, glabrous; leaf blade leathery, oblanceolate or narrowly elliptic, 10–17 × 2.5–4 cm; base cuneate; apex acuminate, shortly cuspidate; abaxial surface greenish, hirsute-glandular, especially on veins; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 23–28-paired. Inflorescence racemose-umbellate, 17–21-flowered; rachis 15–20 mm, pubescent and glandular-hairy, glabrescent. Pedicel 0.5–0.7 cm, puberulent, glandular; calyx lobes 5, ca. 1.5 mm, glabrous; corolla tubular-campanulate, deep red, 3–3.5 cm, with 5 darker nectar pouches at base; lobes 5, suborbicular, ca. 1 cm, apex retuse; stamens 10, unequal, 2.5–3 cm, filaments reddish at base, glabrous; ovary cylindrical, 8–11 × ca. 2.5 mm, floccose; style 2.5–3 cm, glabrous; stigma small. Capsule cylindrical, ca. 20 × 4–5 mm, puberulent. Fl. Apr, fr. Oct.

• Broad-leaved forest margins, slopes; 2200–2500 m. NW Yunnan.

**301. *Rhododendron ramsdenianum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 183. 1936.

长轴杜鹃 chang zhou du juan

Shrubs, 2–10 m tall; older branches smooth, glabrous; young shoots stout, floccose. Petiole 10–15 mm, floccose when young, glabrescent; leaf blade leathery, broadly lanceolate or oblong-elliptic, 8–12 × 3–4.5 cm; base rounded or broadly cuneate; apex cuspidate or acute; both surfaces glabrous except for brownish pubescent midrib abaxially; midrib prominent abaxially, grooved adaxially; lateral veins 15–22-paired, slightly raised. Inflorescence dense, 15–20-flowered; rachis 10–25 (–30) mm, glabrous. Pedicel ca. 0.5 cm, slender, glabrous; calyx lobes 5, 1–2 mm, glabrous; corolla tubular-campanulate, scarlet to deep crimson, 3.5–4 cm, with 5 prominent nectar pouches at base; lobes 5, suborbicular, ca. 1 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary cylindrical, ca. 8 × 2 mm, glabrous; style 2.5–3 cm, glabrous, stigma capitate, small. Capsule cylindrical, 15–20 × ca. 5 mm, glabrous. Fl. Mar–May, fr. Aug–Oct.

• Mixed forests, forest margins; 2000–2800 m. SE Xizang.

**302. *Rhododendron kendrickii*** Nuttall, Ann. Mag. Nat. Hist., ser. 2, 12: 10. 1853.

多斑杜鹃 duo ban du juan

*Rhododendron pankimense* Cowan & Kingdon Ward; *R. shepherdii* Nuttall.

Small trees or shrubs, 1–3 m tall; older branches glabrous; young shoots stout, slightly floccose. Petiole cylindrical, 10–15 mm, glabrescent; leaf blade subleathery, narrowly elliptic to

lanceolate, 7–11 × 2–4 cm; base cuneate to rounded; margin revolute undulate; apex acuminate; abaxial surface woolly on midrib, otherwise glabrous; adaxial surface glabrous when mature; midrib prominent abaxially; lateral veins 17–24-paired, slightly raised abaxially, impressed adaxially. Inflorescence densely racemose-umbellate, 7–15-flowered; rachis 10–15 mm, densely tomentose. Pedicel 0.3–1 cm, puberulent; calyx discoid; lobes 5, minute, triangular, glabrous; corolla tubular-campanulate, fleshy, deep rose to scarlet, with dark flecks, 3–3.5 cm, with 5 nectar pouches at base, both surfaces glabrous, lobes ca. 1 cm, emarginate; stamens 10, unequal, 1.5–2.2 cm, filaments glabrous; ovary cylindrical-conoid, ca. 7 mm, sparsely strigose, eglandular; style ca. 2 cm, glabrous; stigma small. Capsule slightly curved, 15–25 × ca. 4 mm. Fl. Apr–May, fr. Aug–Oct.

Thickets, mixed forests on slopes; 2600–2700 m. E Xizang [Bhutan, NE India].

**303. *Rhododendron araiophyllum*** I. B. Balfour & W. W. Smith, Trans. Bot. Soc. Edinburgh 27: 184. 1917.

窄叶杜鹃 zhai ye du juan

Shrubs, 2–7 m tall, older branches glabrous; branchlets slender; young shoots glabrescent. Petiole cylindrical, ca. 10 mm, glabrescent; leaf blade subleathery, elliptic-lanceolate or narrowly lanceolate, broadest above middle of blade, 5–11 × 1.3–3 cm; base cuneate; margin undulate; apex acuminate or cuspidate; abaxial surface glabrous except sometimes for densely woolly midrib; adaxial surface glabrous, midrib conspicuously raised abaxially, grooved adaxially; lateral nerves 15–16-paired, obscure. Inflorescence racemose-umbellate, 5–10-flowered; rachis slender, 10–15 mm, woolly. Pedicel 1–1.5 cm, sparsely woolly; calyx lobes 5, 1–2 mm, rounded, glabrous to sparsely ciliate; corolla open-campanulate, fleshy, milky white to rose, with basal blotch, sometimes with purple flecks, 2.5–3.5 cm; lobes 5(or 6), suborbicular, ca. 1.3 × 1.5 cm, emarginate; stamens 10–12, 1.4–2.8 cm, filaments slender, pubescent at base; ovary conoid-cylindrical, 5–6 × ca. 2.5 mm, 5- or 6-locular, pubescent at base; style glabrous, stigma slightly swollen. Capsule oblong-cylindrical, 10–15 × ca. 4 mm, glabrous. Fl. Apr–May, fr. Oct–Nov.

*Pinus* forest margins, thickets; 1900–3400 m. NE and W Yunnan [NE Myanmar].

- 1a. Leaf blade elliptic-lanceolate, 5–11 × 2–3 cm; abaxial surface with woolly-tomentose midrib ..... 303a. subsp. *araiophyllum*
- 1b. Leaf blade narrowly lanceolate, 5.5–7.5 × 1.3–1.7 cm; abaxial surface entirely glabrous ..... 303b. subsp. *lapidosum*

**303a. *Rhododendron araiophyllum*** subsp. *araiophyllum*

窄叶杜鹃(原亚种) zhai ye du juan (yuan ya zhong)

Leaf blade elliptic-lanceolate, 5–11 × 2–3 cm; abaxial surface with densely woolly midrib. Fl. Apr–May, fr. Oct–Nov.

*Pinus* forest margins, thickets; 2600–3400 m. W Yunnan [NE Myanmar].

**303b. *Rhododendron araiophyllum* subsp. *lapidosum*** (T. L. Ming) M. Y. Fang, Proc. Fourth Int. Rhododendron Conf. 57. 1989.

石生杜鹃 shi sheng du juan

*Rhododendron lapidosum* T. L. Ming, Acta Bot. Yunnan. 3: 113. 1981.

Leaf blade narrowly elliptic-lanceolate, 5.5–7.5 × 1.3–1.7 cm; abaxial surface with glabrous midrib. Fl. Apr.

- Thickets on rocky or stony slopes; ca. 1900 m. NE Yunnan.

*Rhododendron lapidosum* requires further investigation and may not in fact be a subspecies of *R. araiophyllum*. The corolla shape is apparently tubular-campanulate, quite unlike that of subsp. *araiophyllum*.

**304. *Rhododendron aberconwayi*** Cowan, Roy. Hort. Soc. Rhododendron Year Book 1948: 42. 1948.

碟花杜鹃 die hua du juan

Shrubs, 1.5–2.5 m tall; older branches glabrous; branches slender; young shoots puberulent and glandular. Petiole cylindrical, 5–10 mm, sparsely tomentose; leaf blade thick, leathery, ovate-elliptic or ovate-lanceolate, 2.5–5 × 1–1.8 cm; base broadly cuneate or rounded; margin strongly revolute; apex acute; abaxial surface pale, with red punctate hair bases on veins; adaxial surface smooth, glabrous, midrib slightly raised abaxially, grooved adaxially; lateral veins 8–9-paired. Inflorescence racemose-umbellate, 7–11-flowered; rachis stout, 10–25 mm, densely tomentose, eglandular. Pedicel 1.5–3.5 cm, glandular-hairy; calyx discoid; lobes 5, ca. 1 mm; sparsely hairy, glandular-ciliate; corolla open-cup- or saucer-shaped, white or pink with purple flecks, 2–3 cm, without nectar pouches; lobes 5, orbicular, ca. 1.3 × 1.5 cm, emarginate; stamens 10, unequal, 1–1.5 cm, filaments glabrous; ovary conoid, ca. 4 × 2 mm, 9- or 10-locular; style ca. 1.3 cm, glandular-hairy to tip. Capsule 18–2 × ca. 10 mm. Fl. May, fr. Oct.

- Thickets on slopes; 2200–2500 m. NC Yunnan.

The present authors have seen no material of *Rhododendron maxiongense* C. Q. Zhang & D. Paterson (Novon 13: 156. 2003), described from NE Yunnan. It is very close to *R. aberconwayi*, but the trivial nature of the cited distinguishing features (plants lower, 0.6–0.9 m; corolla without dark flecks; stamens pilose below) suggests that the two species are conspecific.

**305. *Rhododendron annae*** Franchet, J. Bot. (Morot) 12: 258. 1898.

桃叶杜鹃 tao ye du juan

Shrubs, evergreen, 1.5–2 m tall; older branches glabrous; young shoots stout, puberulent, sparsely glandular. Petiole cylindrical, 10–20 mm, glabrous; leaf blade leathery, lanceolate or elliptic-lanceolate, 7–10 × 2–3.7 cm; base cuneate; margin slightly undulate; apex acuminate or obtuse; both surfaces glabrous; midrib slightly raised abaxially, deeply grooved adaxially; lateral veins 12–16-paired, obscure. Inflorescence racemose-umbellate, 6–12-flowered, rachis usually glabrous. Pedicel 1–3 cm, densely stipitate; calyx lobes 5, 1–2 mm, suborbicular, gland-fringed; corolla open-campanulate or cup-shaped, creamy-white

or pale rose, pure white or pink, with or without purple flecks, 2–3 cm, lacking nectar pouches; lobes 5, orbicular, 1.5–1.7 cm, emarginate; stamens 10, unequal, 1–2 cm, filaments glabrous; ovary conoid, 4–5 mm, densely glandular; style ca. 2 cm, glandular-hairy to tip. Capsule cylindrical, 15–25 × 8–12 mm, glandular. Fl. Jun–Jul, fr. Aug–Oct.

- Evergreen broad-leaved forests, forest margins, thickets; 1200–3000 m. C and W Guizhou, W Yunnan.

- 1a. Corolla 2–3 cm, white to purplish, usually with deep purple flecks; leaf apex acuminate ..... 305a. subsp. *annae*
- 1b. Corolla 3–4.5 cm, white to pink, without colored flecks; leaf apex obtuse ..... 305b. subsp. *laxiflorum*

**305a. *Rhododendron annae* subsp. *annae***

桃叶杜鹃(原亚种) tao ye du juan (yuan ya zhong)

Shoots stout. Leaf blade 7–10 × 2–3 cm; apex acuminate. Inflorescence 6–10-flowered. Pedicel 1–2 cm; corolla white to purple, with deep purple flecks, 2–3 cm. Fl. Jun–Jul, fr. Aug–Oct.

- Evergreen broad-leaved forests, thickets; 1200–1800 m. C and W Guizhou.

One of us (Chamberlain) has seen specimens originating from Guiyang, the type locality of subsp. *annae*, with flowers up to 4.5 cm and lacking flecks; both characters suggesting subsp. *laxiflorum*. There is also considerable overlap in the leaf dimensions. It is possible that subsp. *laxiflorum* is synonymous with subsp. *annae*.

**305b. *Rhododendron annae* subsp. *laxiflorum*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 149. 1984.

滇西桃叶杜鹃 dian xi tao ye du juan

*Rhododendron laxiflorum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 50. 1920; *R. hardingii* Forrest ex Tagg.

Leaf blade 8–12.5 × 2–3.7 cm; apex obtuse. Inflorescence usually lax, 8–12-flowered. Pedicel 2–3 cm; corolla pure white or pink, without color spots, 3–4.5 cm, densely glandular.

- Forest margins; 2000–3000 m. W Yunnan.

**306. *Rhododendron guizhouense*** M. Y. Fang, Proc. Fourth Int. Rhododendron Conf. 58. 1989.

贵州杜鹃 gui zhou du juan

Shrubs or small trees, 4–7 m tall; branchlets slender, glabrous. Petiole cylindrical, 10–15 mm, glabrous; leaf blade leathery, elliptic-lanceolate or ovate-lanceolate, 5–10 × 1.5–3.6 cm; base broadly cuneate or rounded; margin revolute; apex acuminate, oblique; both surfaces glabrous; midrib raised abaxially, grooved adaxially; lateral veins 10–12-paired, obscure. Inflorescence racemose-umbellate, 4–6-flowered; rachis ca. 5 mm, puberulent or glabrous. Pedicel 1–2 cm, sparsely glandular-hairy; calyx lobes 5, ca. 1 mm, glabrous; corolla openly campanulate or cup-shaped, creamy, with crimson basal blotch, 2.5–3 cm, lobes 5, suborbicular, ca. 1.5 × 1.7 cm, emarginate; stamens 10, unequal, 1–2 cm, filaments pubescent at base;

ovary cylindric-conoid, 3–4 mm, densely hirsute-glandular; style ca. 2.5 cm, glabrous, stigma swollen. Capsule not known. Fl. Apr–May.

- Mixed forests; 1700–2400 m. N Guangxi, E Guizhou, W Hunan.

**307. *Rhododendron pingbianense*** M. Y. Fang, Acta Phytotax. Sin. 22: 421. 1984.

屏边杜鹃 ping bian du juan

Shrubs or small trees, ca. 6 m tall; older branches gray; branchlets slender, brown, pubescent. Petiole cylindric, 10–15 mm, hirsute; leaf blade subleathery, ovate-elliptic or obovate-lanceolate, 7.5–10 × 2.3–3.5 cm; base cuneate; margin revolute; apex acuminate; abaxial surface sparsely glandular-hairy, midrib with brown dendroid hairs; adaxial surface green, glabrous, midrib conspicuous abaxially, grooved adaxially; lateral veins 12–17-paired, obscure on both surfaces. Inflorescence racemose-umbellate, 3–5-flowered; rachis 6–10 mm, yellowish pubescent. Pedicel ca. 1.2 cm, hirsute; calyx lobes 5, ca. 1.5 mm, ovate-triangular, glabrous; corolla funnelform, pinkish, 3.5–4 cm, lobes 5, ovate, 1.8–2 × 1.5–1.8 cm; stamens 10, unequal, 1.2–1.8 cm, filaments glabrous; ovary ca. 5 mm, with dendroid hairs; style ca. 3 cm, lower part glandular with some hairs, stigma slightly swollen. Capsule not known. Fl. Apr.

- Forests; ca. 1900 m. SE Yunnan.

**308. *Rhododendron laojunshanense*** M. Y. Fang, J. Sichuan Univ., Nat. Sci. Ed. 1984(2): 111. 1984.

老君山杜鹃 lao jun shan du juan

*Rhododendron laojunense* T. L. Ming.

Small trees or shrubs, 2–3 m tall; older branches roughish, glabrous; branchlets stout; young shoots grayish, densely tomentose. Petiole cylindric, 10–15 mm, thinly woolly; leaf blade leathery, elliptic or elliptic-lanceolate, 6–8 × 2–2.8 cm; base rounded; margin usually revolute or undulate; apex cuspidate or obtuse; abaxial surface pale green, verruculose, base thinly woolly; adaxial surface green, glabrous; midrib raised abaxially, grooved adaxially; lateral veins 11–13-paired. Inflorescence racemose-umbellate, 2–4-flowered; rachis 8–10 mm, densely brown-floccose. Pedicel 1–2 cm, with similar hairs; calyx lobes 5, ca. 2 mm, ovate-triangular, pubescent outside, glabrous within; corolla funnelform, pale yellow, 2–2.5 cm, lobes 5, suborbicular, ca. 1 × 1.2 cm, emarginate; stamens 10, unequal, 1–1.5 cm, filaments glabrous; ovary cylindric, ca. 5 mm, densely hirsute; style ca. 1.5 cm, glabrous, stigma slightly swollen. Capsule oblong-cylindric, base oblique, 15–20 × 6–7 mm, hirsute. Fl. May–Jun, fr. Jul–Aug.

- Stony forests, bamboo forests, thickets, mountain summits; 2400–2600 m. SE Yunnan (Maguan, Malipo).

**309. *Rhododendron brevinerve*** Chun & W. P. Fang, Acta Phytotax. Sin. 6: 167. 1957.

短脉杜鹃 duan mai du juan

Small trees, 4–5 m tall; branchlets slender, usually 2–3 mm in diam.; young shoots glandular-setose. Petiole 10–25 mm, glabrous; leaf blade leathery or thinly leathery, 10–15 × 2–4.5

cm; base broadly cuneate or rounded; apex acuminate; both surfaces glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 9–15-paired. Inflorescence a racemose umbel, 2–4-flowered; rachis ca. 5 mm, brownish pubescent. Pedicel stout, densely setose and glandular-hairy; calyx lobes 5, 2–3.5 mm, unequal, rounded, glandular-hairy outside, glabrous inside, margin gland-fringed; corolla broadly campanulate, purplish or pink, lacking flecks, 2.5–4 cm, lobes 5, ovate; apex obtuse or rounded, with one purple veinlet; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary conoid, ca. 7 mm, 10-locular, densely glandular-hairy; style 2.5–3 cm, proximally glandular-hairy; stigma swollen. Capsule cylindric, 15–20 × 6–8 mm, glandular-setose; style persistent. Fl. Mar–May, fr. Jul–Sep.

- Thickets, valleys; 800–1400 m. N Guangdong, N Guangxi, SE Guizhou, SW Hunan.

**310. *Rhododendron sikangense*** W. P. Fang, Acta Phytotax. Sin. 2: 81. 1952.

川西杜鹃 chuan xi du juan

Shrubs or small trees, 3–5 m tall; young shoots densely rufous- to white-tomentose, later glabrescent. Petiole cylindric, 10–15 mm, stellate-tomentose, glabrous when mature; leaf blade leathery, oblong-elliptic or elliptic-lanceolate, 7–12 × 2.5–5.5 cm; base broadly cuneate to rounded or truncate to slightly cordate; apex acute, apiculate; abaxial surface pale green, glabrous except for midrib rufous stellate-tomentose or floccose near base; adaxial surface green, papillose, glabrous; midrib conspicuously prominent abaxially; lateral veins 12–15-paired, obscure. Inflorescence 8–12-flowered; rachis 10–20 mm, white-tomentose. Pedicel 1–2 cm, with same hairs; calyx lobes 5, ca. 2 mm, triangular, apex acute, pubescent outside; corolla campanulate, white, or purple to pink, with deep purple flecks, 3–3.5 cm, nectar pouches lacking, lobes 5, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.5–3 cm, filaments pubescent at base; ovary oblong-ovate, ca. 5 mm, brown stellate-tomentose; style stout, glabrous, stigma slightly swollen, small. Capsule cylindric, 15–20 × 4–5 mm, clad with dense hairs. Fl. May–Jul, fr. Sep–Nov.

- Mixed forests, thickets, alpine slopes; 2800–4500 m. W Sichuan, NE Yunnan.

This species is distinctive within *Rhododendron* subsect. *Irrorata* on account of the stellate hairs at the base of the leaf blade abaxially and on the pedicels and ovary. The stellate indumentum on the petioles suggests that *R. sikangense* belongs to *R.* subsect. *Maculifera*.

- 1a. Leaf blade leathery, 8–12 × 2.5–3.5 cm; corolla purple or pink ..... 310a. var. *sikangense*
- 1b. Leaf blade thinly leathery, 7–9 × 3–5.5 cm; corolla white ..... 310b. var. *exquisitum*

**310a. *Rhododendron sikangense* var. *sikangense***

川西杜鹃(原变种) chuan xi du juan (yuan bian zhong)

*Rhododendron cookeanum* Davidian.

Leaf blade leathery, oblong-elliptic or elliptic-lanceolate, 8–12 × 2.5–3.5 cm; base broadly cuneate or rounded; abaxial surface midrib rufous tomentose near base, hairs stellate. Corolla usually purple or pink. Fl. Jun–Jul, fr. Sep.

- Thickets, alpine slopes; 2800–3100 m. (?S and) W Sichuan.

In *Rhododendron cookeanum* the corolla is white, which suggests that that taxon is instead synonymous with var. *exquisitum*. Their distributions are also a better match: *R. cookeanum* was described from S Sichuan, close to the border with NE Yunnan.

**310b. *Rhododendron sikangense* var. *exquisitum*** T. L. Ming, Acta Bot. Yunnan. 6: 165. 1984.

优美杜鹃 you mei du juan

*Rhododendron exquisitum* T. L. Ming, Acta Bot. Yunnan. 3: 121. 1981, not Hutchinson (1932).

Leaf blade thinly leathery, broadly elliptic, 7–9 × 3–5.5 cm; base truncate or slightly cordate; abaxial surface persistently rufous floccose at base. Corolla white. Fl. May–Jul, fr. Oct–Nov.

- Mixed forests; 3300–4500 m. NE Yunnan.

**311. *Rhododendron mengtszense*** I. B. Balfour & W. W. Smith, Trans. Bot. Soc. Edinburgh 27: 206. 1917.

蒙自杜鹃 meng zi du juan

Shrubs or small trees, 3–4 m tall; young branches stout, ca. 4 mm in diam., densely glandular-setose. Petiole cylindrical, 10–20 mm, glandular-setose; leaf blade leathery, narrowly lanceolate, 8–17 × 2–3 cm; base cuneate to obtuse; margin revolute; undulate and roughened; apex acuminate to cuspidate; abaxial surface paler, glabrous, midrib with minute setae and glands; adaxial surface matt, glabrous, midrib sometimes grooved towards base adaxially; lateral veins ca. 16-paired. Inflorescence racemose-umbellate, 5–10-flowered; rachis 5–10 mm, puberulent and glandular. Pedicel 2–3 cm, densely glandular-setose; calyx cupular; lobes 5, ca. 2 mm, glandular-setose; corolla campanulate or tubular, reddish purple, 3.5–4 cm, with 5

deep crimson nectar pouches at base; lobes 5, rounded, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary cylindrical, 7–8 mm, densely setose and glandular-setose; style glandular-setose throughout, stigma small. Capsule oblong, 10–12 × ca. 8 mm, setose. Fl. Mar–Apr, fr. Aug–Nov.

- Broad-leaved forests, mixed forests; 1000–2700 m. SE Yunnan.

**312. *Rhododendron dimitrum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 50. 1919.

苍山杜鹃 cang shan du juan

Shrubs, 2–4 m tall; branches stout; young shoots glabrescent. Petiole cylindrical, ca. 10 mm, glabrescent; leaf blade leathery, oblong-elliptic to lanceolate, 4–7 × 1.5–2.5 cm; base cuneate or obtuse, narrowly decurrent; margin revolute; apex cuspidate; both surfaces glabrous; abaxial surface glaucescent; adaxial surface green; midrib prominent abaxially, lateral veins 15–17-paired, obscure. Inflorescence racemose-umbellate, 10–12-flowered; rachis 7–10 mm, pubescent. Pedicel 0.5–1 cm, densely dendroid-pubescent, eglandular; calyx pink, cupular; lobes 5, 3–5(–10) mm, oblique, oblong, triangular or ovate, fringed at margin; corolla tubular-campanulate, fleshy, deep rose, with crimson flecks, 3–4 cm, with 5 deep purple nectar pouches, outer surface glabrous, lobes 5, rounded emarginate; stamens 10, unequal, 1–2 cm, filaments pubescent at base; ovary cylindrical-conoid, ca. 5 mm, densely tomentose; style 1.5–2 cm, lower 1/2 tomentose, stigma small. Capsule not known. Fl. Apr–May.

- Mixed forests, open thickets; 3000–3300 m. W Yunnan.

This species is distinctive within *Rhododendron* subsect. *Irrorata* on account of the large calyx and the densely tomentose ovary and proximal half of the style. It may have originated as a hybrid between *R. irroratum* and *R. neriiflorum*.

**11. *Rhododendron* subsect. *Pontica*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 546. 1949.

长序杜鹃亚组 chang xu du juan ya zu

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

*Rhododendron* ser. *Pontica* Tagg in J. B. Stevenson, Sp. Rhodod. 567. 1930 [*Ponticum*].

Shrubs, sometimes dwarf, rarely small trees; young shoots often glabrous. Leaf blade both surfaces glabrous at maturity, sometimes with persistent hair-bases or tomentose abaxially. Inflorescence terminal, lax or dense, 5–10-flowered; rachis 3–6 cm; pedicels elongating in fruit to 6 cm; calyx 5-lobed; corolla campanulate or funnellform-campanulate, lobes as long as corolla-tube, 5(–7)-lobed, white or yellow, with darker flecks; stamens 10; filaments pubescent at base; ovary tomentose, glandular or glabrous; style glabrous or glandular in lower half.

About 12 species: Asia, Europe, North America; two species (one endemic) in China.

- 1a. Bud-scales deciduous; abaxial leaf surface with punctate hair-bases; corolla white; ovary glandular ..... 313. *R. hyperythrum*  
 1b. Bud-scales persistent; abaxial leaf surface without punctate hair-bases; corolla yellow; ovary tomentose ..... 314. *R. aureum*

**313. *Rhododendron hyperythrum*** Hayata, Icon. Pl. Formos. 3: 133. 1913.

微笑杜鹃 wei xiao du juan

*Rhododendron rubropunctatum* Hayata (1913), not H. Léveillé & Vaniot (1911), nor T. L. Ming (1984).

Shrubs or small trees; young shoots glabrous. Petiole 15–

25 mm, glabrous; leaf blade leathery, elliptic-lanceolate to oblong-lanceolate, 7–12 × 2–3.5 cm; base cuneate; margin slightly revolute; apex acute to shortly acuminate; abaxial surface finely red-brown-punctate. Inflorescence racemose-umbellate, ca. 10-flowered; rachis 15–25 mm. Pedicel 3–4.5 cm, sparsely glandular and floccose; calyx lobes 5, ca. 2 mm; margin glandular-ciliate; corolla funnellform-campanulate, white with purple flecks, 3–5 × 3–5 cm; lobes 5, deep; stamens unequal, filaments pubes-

cent at base; ovary densely glandular, ca. 6 mm; style ca. 2.5 cm, glandular in lower half. Fl. Apr.

- Open areas. NC Taiwan.

Recent DNA evidence indicates that this species is not allied to the remaining members of *Rhododendron* subsect. *Pontica*. Further research is required to ascertain its true affinities.

There is clearly confusion in the interpretation of the type of *Rhododendron hyperythrum*. The sense in which the name is applied in this account follows that proposed by E. H. Wilson and most later authors, and refers to a plant characterized by persistent, red, punctate hair bases on the abaxial surface of the leaf blade. *Rhododendron rubropunctatum* Hayata belongs to this entity. If, as proposed by Li et al. (in T. C. Huang, Fl. Taiwan, ed. 2, 4: 31. 1998), *R. hyperythrum* is the correct name for the plant described in the present account as *R. pachysanthum* (in *R.* subsect. *Maculifera*), then a new name will be required for the illegitimate later homonym *R. rubropunctatum* Hayata.

**314. *Rhododendron aureum*** Georgi, Bemerk. Reise Russ. Reich 1: 214. 1775.

**12. *Rhododendron* subsect. *Argyrophylla*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 548. 1949.

银叶杜鹃亚组 yin ye du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Argyrophylla* Tagg in J. B. Stevenson, Sp. Rhodod. 20. 1930 [*“Argyrophyllum”*].

Shrubs, rarely small trees; young shoots pubescent or tomentose, often glabrescent, occasionally glandular or glabrous. Leaf blade lanceolate or elliptic-lanceolate; apex acuminate; abaxial surface with a thinly compacted silvery white or grayish 1-layered indumentum, or indumentum 2-layered, the upper layer loosely woolly-tomentose with branched hairs, fawn to yellow, the lower layer brownish or grayish and thinly tomentose. Inflorescence lax, 4–20-flowered; pedicels long and slender, rarely stout and short; calyx usually minute; corolla funnel-campanulate, base narrow, 5-lobed, white or pale pink to purple, nectar pouches usually absent (present in *R. brevipetiolatum* and *R. ririei*); stamens usually 10–14 (18–20 in *R. haofui*); ovary cylindrical or conical, tomentose, glandular or glabrous; style glandular to tip or glabrous. Capsule cylindrical.

- Twenty-one species: China.

- 1a. Leaf blade adaxially bullate, abaxially with woolly indumentum, midrib and lateral veins prominent; pedicels stout, 1–1.5 cm.
  - 2a. Leaf blade 7–8 cm, with dense gray-white woolly indumentum abaxially; corolla white ..... 321. *R. farinosum*
  - 2b. Leaf blade 10–15 cm, with loose woolly indumentum abaxially; corolla deep magenta or rose.
    - 3a. Leaf blade base broadly cuneate or unequally rounded, abaxial surface with yellowish indumentum; corolla rose ..... 320. *R. denudatum*
    - 3b. Leaf blade base cuneate, abaxial surface with gray-white indumentum; corolla magenta-rose ..... 319. *R. floribundum*
- 1b. Leaf blade adaxially flat, abaxially with thin indumentum, never woolly (but see *R. ebianense*); pedicels slender, (1.5–)2–4 cm (0.5–1 cm in *R. ririei*).
  - 4a. Leaf blade abaxially with silvery white or gray-white indumentum.
    - 5a. Inflorescence 12–22-flowered.
      - 6a. Corolla pinkish or rose, 3–3.5 cm ..... 330. *R. pingianum*
      - 6b. Corolla creamy-white or whitish with brownish crimson spots, 2.5–3 cm ..... 333. *R. coryanum*
    - 5b. Inflorescence 3–10-flowered.
      - 7a. Pedicel glabrous or eglandular.
        - 8a. Corolla purple-red, 4–6 cm ..... 322. *R. ririei*
        - 8b. Corolla white or pink, 2.5–3.5 cm.
          - 9a. Pedicel pubescent; stamens 12–15(–16) ..... 331. *R. argyrophyllum*
          - 9b. Pedicel glabrous; stamens 10 ..... 332. *R. hypoglaucom*
      - 7b. Pedicel glandular.
        - 10a. Style glabrous.
          - 11a. Inflorescence rachis 10–15 mm; pedicel 1–2.5 cm; corolla 4–4.5 cm ..... 315. *R. adenopodum*

牛皮杜鹃 niu pi du juan

*Rhododendron chrysanthum* Pallas; *R. officinale* Salisbury.

Dwarf shrubs, 0.1–1 m tall; stems horizontal with obliquely ascending branchlets; bud scales persistent. Petiole 5–10 mm, glabrous; leaf blade leathery, oblanceolate to obovate-oblong, 2.5–8 × 1–3.5 cm; base cuneate; apex obtuse or rounded, mucronate; both surfaces glabrous when mature, sometimes with vestiges of juvenile tomentum abaxially; reticulate veins distinct. Inflorescence corymbose, 5–8-flowered; rachis ca. 10 mm. Pedicel erect, ca. 3 cm, sparsely rufescent-hairy; calyx lobes 5, ca. 2 mm, floccose; corolla campanulate, yellow, with 1 upper lobe red-spotted, 2.5–3 cm; lobes 5, unequal; stamens 10, unequal, filaments pubescent at base; ovary ca. 5 mm, densely rufous-tomentose; style ca. 2.5 cm, glabrous, stigma small, 5-lobulate. Inflorescence erect; peduncle 4.5–6 cm. Capsule oblong-cylindrical, 5-valved, 10–14 × 5–6 mm. Fl. May–Jun, fr. Jul–Aug.

Grasslands, among bryophytes, alpine regions; 1000–2500 m. SE Jilin, Liaoning [Japan, Korea, Mongolia, Russia].

- 11b. Inflorescence rachis to 10 mm; pedicel 2.5–3 cm; corolla ca. 3.5 cm ..... 325. *R. shimenense*
- 10b. Styles with hairs and or glands towards base.
- 12a. Abaxial leaf indumentum silvery white; inflorescence rachis 5–10 mm; pedicel 1–2 cm ..... 335. *R. hunnewellianum*
- 12b. Abaxial leaf indumentum initially white, sometimes becoming tawny or grayish with age, upper layer loosely woolly; inflorescence rachis ca. 20 mm; pedicel 2–3.5 cm ..... 316. *R. ebianense*
- 4b. Leaf blade lamina abaxially with fawn or brownish indumentum.
- 13a. Leaf blade narrowly oblanceolate, 1.5–2(–2.5) cm wide; rachis 0.2–0.4 cm (NE Guizhou: Fanjing Shan) ..... 327. *R. oblanceolatum*
- 13b. Leaf blade elliptic or obovate-elliptic, 2–4 cm wide; rachis 1–4 cm.
- 14a. Corolla deep crimson, base broad, with nectar pouches; petiole stout, ca. 1 cm ..... 323. *R. brevipetiolatum*
- 14b. Corolla white or pink, base narrow, without nectar pouches; petiole 1.5–2.5 cm.
- 15a. Corolla pink; leaf blade long-elliptic or narrow-oblanceolate; apex acuminate; pedicels slender, ca. 1 mm wide.
- 16a. Leaf blade narrowly oblanceolate, 12–16 × 1.5–2.5 cm; bud scales persistent on the young shoots; pedicels, ovary, and style glandular ..... 334. *R. thayerianum*
- 16b. Leaf blade long-elliptic or elliptic-obovate, 8–10(–13) × 2.5–4 cm, bud scales not persistent on the young shoots; style glandular.
- 17a. Leaf indumentum abaxially with a coppery luster; stamens 10–14, filaments pubescent at the base; ovary woolly ..... 318. *R. insigne*
- 17b. Leaf indumentum abaxially brownish, thin not lustrous; stamens 12, filaments glabrous; ovary tomentose ..... 329. *R. longipes*
- 15b. Corolla white; leaf blade elliptic-obovate or long-elliptic; apex obtuse; pedicels stout, 2–3 mm wide.
- 18a. Leaf blade obovate or elliptic-ovate, 7–10 cm; rachis and pedicels glabrous ..... 324. *R. simiarum*
- 18b. Leaf blade narrowly elliptic, 12–16 cm; rachis densely hairy.
- 19a. Petiole glabrous; stamens 18–20 ..... 317. *R. haofui*
- 19b. Petiole floccose or tomentose; stamens 10–12.
- 20a. Adaxial leaf surface not waxy; inflorescence 5–10-flowered; pedicel 2–3 cm ..... 326. *R. formosanum*
- 20b. Adaxial leaf surface with thin layer of white wax; inflorescence 10–20-flowered; pedicel 1–1.5 cm ..... 328. *R. fangchengense*

**315. *Rhododendron adenopodum*** Franchet, J. Bot. (Morot) 9: 391. 1895.

弯尖杜鹃 *wan jian du juan*

*Rhododendron simiarum* Hance subsp. *youngiae* (W. P. Fang) D. F. Chamberlain; *R. youngiae* W. P. Fang.

Shrubs, evergreen, 2–3 m tall; bark gray; young shoots with a dense grayish tomentum and a few glandular hairs. Petiole 10–15 mm; leaf blade leathery, obovate-elliptic or long-obovate, 6–13 × 2–4 cm; base cuneate; apex acuminate, shortly curved-cuspidate; abaxial surface indumentum grayish to pale fawn; adaxial surface glabrous when mature; midrib prominent abaxially, grooved adaxially; lateral veins 10–12-paired, inconspicuous. Inflorescence a lax racemose corymb, 4–8-flowered; rachis 10–15 mm, with a fawn-tomentum. Pedicel 1–2.5 cm, with glandular hairs; calyx lobes 5, 3–5 mm, membranous glandular on the back, triangular-ovate, margin glandular-ciliate; corolla funnel-campanulate, pale rose, usually crimson-spotted, 4–4.5 cm, puberulent within at the base, outside glabrous, lobes 5, orbicular, ca. 1.5 × 2 cm; stamens 10, unequal, 1.5–3 cm, filaments densely hairy in lower 1/4; ovary ovoid, ca. 5 mm, ca. 5–6-locular, densely clad with long-glandular hairs; style slender, glabrous. Capsule oblong-cylindric, ca. 15 × 7 mm, glandular. Fl. Apr–May, fr. Jul–Aug.

• Thickets, mountain slopes, roadsides; 1000–2200 m. Chongqing, W Hubei.

**316. *Rhododendron ebianense*** M. Y. Fang, *Rhododendron Notes Rec.* 2: 23. 1988.

峨边杜鹃 *e bian du juan*

Shrubs or small trees, 0.5–3 m tall; shoots stout, ca. 5 mm in diam., with gray indumentum and dark glands when young, glabrescent. Petiole 10–15 mm; leaf blade leathery, oblong-elliptic or oblanceolate, 8–12 × 2–3 cm; base cuneate; apex acuminate; abaxial surface indumentum silvery-white; adaxial surface dark green, glabrous; lateral veins obscure. Inflorescence racemose-umbellate, 7–9-flowered; rachis ca. 20 mm, densely tomentose and glandular-hairy. Pedicel 2–3.5 cm, hairy and glandular-hairy; calyx greenish or slightly tinged with pink, membranous, lobes 5, 3–4 mm, rounded; corolla funnelform, pink, with yellow spots inside, 3.3–4.5 cm, lobes 5, suborbicular, ca. 1.2 × 1 cm; stamens 10, unequal, 2.2–4 cm, filaments with scurfy hairs on lower part; ovary cylindric, 6–7 mm, glandular-hairy and tomentose; style ca. 4 cm, with some glandular-hairs, tomentose in lower part, stigma slightly dilated. Capsule not known. Fl. Apr.

• Thickets in valleys, roadsides; ca. 1600 m. SC Sichuan (Ebian).

**317. *Rhododendron haofui*** Chun & W. P. Fang, Acta Phytotax. Sin. 6: 169. 1957.

光枝杜鹃 *guang zhi du juan*

Shrubs, 4–6 m tall; bark gray or brownish, exfoliating into thin and small irregular flakes; branchlets cylindrical; young shoots greenish then grayish, glabrous. Petiole 15–22 mm, glabrous; leaf blade leathery, lanceolate or obovate-lanceolate, 7–10 × 3–4 cm; base rounded or cuneate; apex acute or obtuse, apiculate; abaxial surface indumentum brownish, 2-layered; adaxial surface shiny, glabrous; lateral veins 14–18-paired, impressed adaxially. Inflorescence a lax racemose umbel, usually 5–9-flowered; rachis 5–10 mm, yellowish pilose. Pedicel 2–3.5 cm; calyx lobes 5, ca. 1 mm, villous; corolla broadly campanulate, white, sometimes flushed with rose, 4–4.5 cm, lobes 5, orbicular, ca. 1.5 × 2 cm; stamens 18–20, unequal, 1.5–3 cm, filaments villous below; ovary cylindrical, ca. 6 mm, densely whitish woolly-tomentose; style 2.5–3 cm, glabrous, stigma swollen. Capsule cylindrical, 15–25 × ca. 8 mm, brownish woolly-tomentose. Fl. May, fr. Oct.

• Thickets in valleys; 800–1900 m. N Guangxi, Guizhou, S Hunan, SW Jiangxi, E Yunnan.

**318. *Rhododendron insigne*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 113. 1910.

不凡杜鹃 *bu fan du juan*

Shrubs, 1.5–6 m tall; branchlets thick, straight, 7–8 mm in diam.; young shoots thinly tomentose, glabrescent. Petiole 15–25 mm; leaf blade leathery, obovate-elliptic, obovate-lanceolate, oblong or oblong-lanceolate, 8–13 × 2.5–4.5 cm; base cuneate; apex acuminate or cuspidate; abaxial surface indumentum white or silvery-white, sometimes fawn, sometimes later developing a coppery sheen; adaxial surface glabrous, midrib prominent abaxially, deeply grooved adaxially; lateral veins usually 18–21-paired. Inflorescence lax, 8–15-flowered; rachis 10–15 mm, glabrous. Pedicel stout, 2–5 cm, sparsely tomentose; calyx lobes 5, ca. 1.5 mm, triangular, abaxially floccose; corolla broadly campanulate, pale or deeper pink, with crimson median lines on petals and spotted at base inside, 3–3.5 cm; outer surface glandular-hairy, lobes 5, rounded, emarginate; stamens 13–15, unequal, 1.5–2 cm, filaments densely floccose at base or glabrous; ovary cylindrical, ca. 7 mm, 8–10-locular, white woolly-pilose; style stout, glabrous. Capsule cylindrical, stout, ca. 25 × 10 mm, densely brownish woolly-pilose. Fl. May, fr. Oct.

• Woodlands, thickets, stream banks; 700–2000 m. S Sichuan.

- 1a. Leaf blade usually obovate-elliptic; abaxial surface indumentum with coppery sheen when dry; pedicel 3–5 cm; stamen filaments densely floccose at base ..... 318a. var. *insigne*
- 1b. Leaf blade usually oblong-lanceolate; abaxial surface indumentum white not developing a coppery sheen; pedicel 2–2.5 cm; stamen filaments glabrous ..... 318b. var. *hejiangense*

**318a. *Rhododendron insigne*** var. *insigne*

不凡杜鹃(原变种) *bu fan du juan* (*yuan bian zhong*)

Leaf blade obovate-elliptic or oblong-lanceolate; abaxial surface indumentum white or silvery-white, developing a coppery sheen when dry. Inflorescence 8–10-flowered. Pedicel 3–5 cm; corolla broadly campanulate, pale or deeper pink, with crimson median lines on petals and spotted at base inside; stamen filaments densely floccose at base. Fl. May, fr. Oct.

• Woodlands, thickets, stream banks; 1200–2000 m. SW Sichuan.

**318b. *Rhododendron insigne*** var. *hejiangense* (W. P. Fang) M. Y. Fang, Bull. Bot. Res., Harbin 12: 219. 1992.

合江银叶杜鹃 *he jiang yin ye du juan*

*Rhododendron argyrophyllum* Franchet subsp. *hejiangense* W. P. Fang, Acta Phytotax. Sin. 21: 457. 1983.

Branchlets purple, glabrous. Leaf blade oblong or oblong-lanceolate; abaxial surface indumentum thin, silvery-white, never developing a coppery sheen. Inflorescence ca. 15-flowered. Pedicel 2–2.5 cm; corolla pink, with purple spots at base; outer surface glandular-hairy; stamen filaments glabrous. Fl. May.

• Thickets; 700–1700 m. S Sichuan.

**319. *Rhododendron floribundum*** Franchet, Bull. Soc. Bot. France 33: 232. 1886.

繁花杜鹃 *fan hua du juan*

Shrubs or small trees, 2–10 m tall; branchlets stout, ca. 5 mm in diam., pubescent when young, glabrescent. Petiole cylindrical, 10–15 mm; leaf blade leathery, elliptic-lanceolate or oblanceolate, 8–13 × 1.8–3.8 cm; base cuneate or rounded; apex acute; abaxial surface with indumentum 2-layered, upper layer loosely woolly, yellowish at first, becoming white or grayish, persistent, hairs stellate; lower layer appressed and pale gray-white; adaxial surface green, bullate, glabrous; midrib prominent abaxially, depressed adaxially; lateral veins 17–20-paired, prominent abaxially, depressed adaxially. Inflorescence 8–12-flowered; rachis 5–7 mm. Pedicel 1.5–2 cm, yellowish or whitish tomentose; calyx lobes 5, ca. 1.5 mm, narrowly triangular, acute, floccose; corolla broadly campanulate, at first magenta-rose, becoming paler pink, with crimson flecks and blotch at base within, 3.5–4 cm, lobes 5, orbicular, 1–1.5 × 1.5–2 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary oblong, ca. 5 mm, silky-hairy; style 3.5–4 cm, longer than corolla, glabrous, stigma dilated. Capsule cylindrical, 20–30 mm, yellowish, with gray pubescence. Fl. Apr–May, fr. Jul–Aug.

• Woodlands; 1400–2700 m. NW Guizhou, SW Sichuan, NE Yunnan.

**320. *Rhododendron denudatum*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 339. 1914.

皱叶杜鹃 *zhou ye du juan*

*Rhododendron xanthoneuron* H. Léveillé.

Shrubs or small trees, 3–6 m tall; branchlets stout, ca. 5 mm in diam., whitish or yellowish stellate tomentose when young, glabrescent. Petiole cylindrical, 10–20 mm; leaf blade leathery, elliptic-lanceolate to ovate-lanceolate, 10–16 × 2.5–5 cm; base cuneate; apex apiculate or acuminate; abaxial surface

loosely yellowish tomentose; adaxial surface rugose, glabrous, midrib prominent abaxially, impressed adaxially; lateral veins 16–18-paired, prominent abaxially, impressed adaxially. Inflorescence 8–12-flowered; rachis ca. 5 mm, tomentose. Pedicel stout, 1–2 cm, densely yellowish tomentose; calyx lobes 5, ca. 1 mm, triangular; corolla campanulate, rose, with deep crimson flecks within, 3.5–4 cm, lobes 5, suborbicular, 1.5–2 cm; stamens 10–13, 2–3 cm, filaments glabrescent; ovary cylindrical, 5–7 mm, yellowish tomentose; style 3–3.5 cm, glabrous. Capsule 15–20 × 6–8 mm, yellowish brown tomentose. Fl. Apr–May, fr. Aug–Sep.

• Thickets, mountain slopes; 2000–3300 m. NW Guizhou, SW Sichuan, E Yunnan.

**321. *Rhododendron farinosum*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 340. 1914.

钝头杜鹃 *dun tou du juan*

Shrubs, 1–2 m tall; shoots stout, 4–5 mm in diam. below inflorescence, thinly gray tomentose, later glabrescent. Petiole stout, ca. 10 mm; leaf blade leathery, obovate to oblong-elliptic, 5–8 × 2–3 cm; base cuneate; apex obtuse or blunt; abaxial surface with indumentum 2-layered, upper layer fawn woolly-tomentose; lower layer white and compacted; adaxial surface green, bullate, glabrous; midrib prominent abaxially, deeply impressed adaxially; lateral veins 12–14-paired. Inflorescence short, ca. 5- or 6-flowered; rachis ca. 5 mm, tomentose. Pedicel 1–1.5 cm, clad with whitish to tawny tomentum; calyx lobes 5, minute, triangular, rufous-tomentose; corolla campanulate, white, 3–3.5 cm, glabrous outside, puberulent on inside at base; lobes 5, orbicular, 1.5–2 cm, emarginate; stamens 1.5–2 cm, filaments pubescent at base; ovary ovoid or oblong-cylindrical, 5–7 mm, densely fawn tomentose; style glabrous. Capsule not known.

• Thickets; ca. 3200 m. NE Yunnan (Qiaojia).

**322. *Rhododendron ririei*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 111. 1910.

大钟杜鹃 *da zhong du juan*

Shrubs or small trees, 3–8 m tall; bark pale gray, exfoliating into thin and small irregular flakes; young shoots stout, pale green, glabrous. Petiole stout, 10–20 mm, glabrous; leaf blade oblong-elliptic to obovate-elliptic, 7.5–13 × 2.5–4 cm; base broadly cuneate or rounded; apex cuspidate and mucronate; abaxial surface indumentum silvery white, thin; adaxial surface dark green, glabrous, midrib prominent abaxially, impressed adaxially; lateral veins 13–14-paired, prominent abaxially. Inflorescence racemose-umbellate, 5–10-flowered; rachis 5–8 mm, whitish pilose. Pedicel 1–1.5 cm, with a white tomentum; calyx lobes 5, small, unequally triangular, sparsely pubescent; corolla campanulate, broad at base, purple-red, 4–6 cm, with 5 black-purple nectar pouches at the base of tube, lobes 5, orbicular, emarginate; stamens 10, subincluded in the corolla, 2.5–5.5 cm, filaments glabrous; ovary cylindrical or conoid, 5–8 mm, 10-locular, densely gray felted-tomentose; style 3–3.5 cm, glabrous. Capsule oblong-cylindrical, 2–3 × 9–12 mm, grayish tomentose when young, glabrescent. Fl. Mar–May, fr. Jul–Aug.

• Forests; 1700–1800 m. SW Sichuan.

*Rhododendron ririei* subsp. *leiboense* M. Y. Fang (Acta Phytotax. Sin. 30: 556. 1992), described from Sichuan (Leibo), is said to differ in having the leaf blade more narrowly oblanceolate to elliptic-lanceolate, less leathery, with a silvery indumentum abaxially and a cuneate base, pedicels more slender, and corolla with a narrower base. This taxon was not included in FRPS.

**323. *Rhododendron brevipetiolatum*** M. Y. Fang, Acta Phytotax. Sin. 22: 420. 1984.

短柄杜鹃 *duan bing du juan*

Shrubs, ca. 3 m tall; branches more than one year old grayish, glabrescent; shoots stout, ca. 5 mm in diam., branchlets of current year purplish or brownish, puberulent and glandular. Petiole stout, ca. 10 mm; leaf blade leathery, oblong or oblong-elliptic, 8–12 × 3–5 cm; base broadly cuneate or rounded; apex blunt or cuspidate; abaxial surface brownish, indumentum compact, thin, veins with thin indumentum; adaxial surface greenish, glabrous; midrib slightly raised abaxially, impressed adaxially; lateral veins 16–19-paired, slightly raised abaxially, impressed adaxially. Inflorescence usually 5–7-flowered; rachis 5–7 mm, densely gray tomentose. Pedicel stout, ca. 1 cm, whitish floccose and glandular-hairy; calyx lobes 5, 2–3 mm, ovate, puberulent outside; corolla campanulate, deep crimson, 4–4.5 cm, with 5 dark purple nectar pouches at base; lobes 5, orbicular, ca. 1.3 × 2–2.5 cm, emarginate; stamens 10, unequal, 2.5–3.5 cm; filaments slender, glabrous; ovary conical, 6–7 mm, with long-glandular hairs, also pubescent; style 3–3.5 cm, glabrous, stigma dilated. Capsule not known. Fl. Apr.

• Forests; ca. 1900 m. C Sichuan (Yingjin).

**324. *Rhododendron simiarum*** Hance, J. Bot. 19: 243. 1881.

猴头杜鹃 *hou tou du juan*

Shrubs, 2–5(–13) m tall; bark gray, exfoliating into thin small irregular flakes; branchlets stout, those more than one year old glabrescent, gray tomentose when young. Petiole cylindrical, 15–20 mm, thinly floccose-tomentose at first, glabrescent; leaf blade leathery or thickly leathery, oblanceolate to oblong-lanceolate or long-obovate or oblanceolate, 4–13 × 2–4 cm; base cuneate; apex obtuse or rounded; abaxial surface indumentum thin, grayish to fawn; adaxial surface green, glabrous; midrib impressed adaxially; lateral veins 10–12-paired, prominent or inconspicuous abaxially, ± obscure adaxially. Inflorescence terminal, racemose-umbellate, 5–9-flowered; rachis 10–25 mm, brownish pilose. Pedicel stout, 1.5–5 cm, whitish to rusty-floccose, or glabrescent; calyx discoid; lobes 5, minute, triangular; corolla funnelform-campanulate or funnelform, pink or white, with a few interior darker flecks, 2–4 cm, lobes 5, orbicular, emarginate; stamens 10–12, unequal, 1–3 cm, filaments sparsely tomentose in lower half; ovary cylindrical or conical, 5–6 mm, rufous stellate-tomentose and shortly glandular-hairy; style glabrous or with a few glands at base. Capsule cylindrical, 12–20 × ca. 8 mm, often rufous-pubescent. Fl. Apr–May, fr. Jul–Aug.

• Open forests, thickets; 500–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, S Hunan, Jiangxi, S Zhejiang.



The present authors have seen no material of var. *grandifolium* G. Z. Li (Guihaia 15: 295. 1995), described from Guangxi and Hainan. It is said to differ from var. *simiarum* in its larger leaf blade (12–17 × 3.5–5.5 cm), 8–12-flowered inflorescence, and 3–4 cm pedicel.

- 1a. Corolla 3.5–4 cm, pink; leaves 4–9 × 2–3 cm ..... 324a. var. *simiarum*  
1b. Corolla 2.5–2.8 cm, white; leaves 8–13 × 3–4 cm ..... 324b. var. *versicolor*

**324a. *Rhododendron simiarum* var. *simiarum***

猴头杜鹃(原变种) hou tou du juan (yuan bian zhong)

*Rhododendron fokiense* Franchet; *R. fordii* Hemsley; *R. simiarum* var. *deltoideum* P. C. Tam.

Leaf blade leathery, oblanceolate to oblong-lanceolate, 4–9 × 2–3 cm; lateral veins prominent abaxially. Pedicel 3.5–5 cm; corolla funnel-campanulate, pink, 3.5–4 cm. Fl. Apr–May, fr. Jul–Aug.

• Open forests, thickets; 500–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, S Hunan, Jiangxi, S Zhejiang.

*Rhododendron simiarum* var. *deltoideum* P. C. Tam, described from Hainan, was reported as differing from var. *simiarum* in its deltoid, reflexed calyx lobes. This feature occurs sporadically throughout the range of var. *simiarum* and is therefore considered to be of little taxonomic significance.

**324b. *Rhododendron simiarum* var. *versicolor*** (Chun & W. P. Fang) M. Y. Fang, Bull. Bot. Res., Harbin 12: 218. 1992.

变色杜鹃 bian se du juan

*Rhododendron versicolor* Chun & W. P. Fang, Acta Phytotax. Sin. 6: 172. 1957.

Leaf blade thickly leathery, long-obovate or oblanceolate, 8–13 × 3–4 cm; lateral veins inconspicuous abaxially. Pedicel 1.5–2.2 cm; corolla funnellform, narrowed at base, whitish or pale pink, 2–2.8 cm. Fl. Apr.

• Thickets; 800–1800 m. NE Guangxi (Longsheng).

**325. *Rhododendron shimenense*** Q. X. Liu & C. M. Zhang, Acta Phytotax. Sin. 29: 270. 1991.

石门杜鹃 shi men du juan

Shrubs, 3–6 m tall; young branches stout, blackish green; older branches grayish. Petiole robust, 10–16 mm, glabrous; leaf blade leathery, oblong-oblanceolate, 5–9 × 2–2.8 cm; base cuneate; apex acuminate; abaxial surface white or silvery floccose; adaxial surface glabrous; midrib impressed adaxially; lateral veins 12–15-paired, inconspicuous. Inflorescence racemose-umbellate, 3–5(–8)-flowered; rachis to 10 mm. Pedicel 2.5–3 cm, glandular; calyx lobes 5, ca. 2 mm, triangular, glandular; corolla campanulate, rose-pink, with purple spots on upper lobes, ca. 3.5 cm, lobes 5; stamens 10, unequal, 2–3 cm, filaments whitish puberulent at base; ovary oblong-ovoid, 5–6 mm, densely glandular-hairy; style ca. 3.5 cm, glabrous. Capsule cylindrical, 11–12 mm, densely glandular-hairy. Fl. May–Jul.

• 1500–1600 m. N Hunan (Shimen).

The original authors considered that this species was allied to

*Rhododendron simiarum*, but distinguished it by the eglandular, glabrous petioles, the shorter inflorescence rachis, and the densely stipitate-glandular ovary.

**326. *Rhododendron formosanum*** Hemsley, Bull. Misc. Inform. Kew 1895: 183. 1895.

台湾杜鹃 tai wan du juan

Shrubs or small trees, 2–6 m tall; branchlets ca. 4 mm in diam. below inflorescence. Petiole 10–20 mm, with a floccose indumentum; leaf blade thickly leathery, narrowly lanceolate or oblanceolate, base cuneate; margin slightly reflexed; apex obtuse; abaxial surface indumentum brown, compact; adaxial surface glabrous, midrib impressed, prominent adaxially; lateral veins 13–17 on each side, inconspicuous on both surfaces. Inflorescence racemose-umbellate, 10–20-flowered; rachis 15–20 mm, brownish pilose. Pedicel stout, 2–3 cm, rufous-brown pubescent; calyx teeth 5, ca. 1 mm, broadly rounded or triangular, puberulent outside; corolla widely funnellform, white or pink, with purple flecks, 4–4.5 cm, glabrous; lobes 5, rounded, ca. 2 cm, emarginate; stamens 10–12, unequal, 2–3 cm, filaments pubescent at base; ovary ovoid or cylindrical, ca. 14 mm, densely rufous-tomentose; style 2–3 cm, glabrous. Capsule cylindrical, ca. 10 × 4 mm, brownish tomentose. Fl. Apr, fr. Jul–Aug.

• Broad-leaved forests; 800–2300 m. S Taiwan.

**327. *Rhododendron oblancifolium*** M. Y. Fang, Rhododendron Notes Rec. 2: 25. 1988.

倒矛杜鹃 dao mao du juan

Shrubs, 2.5–5 m tall; those more than one year old glabrous; branchlets slender, those of the current year brownish green and puberulent. Petiole short, 5–10 mm, usually glabrous; leaf blade thinly leathery, oblanceolate, 6–10 × 1.5–2 cm; base cuneate; apex acuminate or acute, shortly caudate; abaxial surface indumentum brownish; adaxial surface green, glabrous; midrib prominent abaxially, impressed adaxially; lateral veins inconspicuous on both surfaces. Inflorescence racemose-umbellate, 3–5-flowered; rachis 2–4 mm, brownish pilose. Pedicel 1–2 cm, tomentose and glandular-hairy; calyx teeth less than 1 mm, rounded; corolla funnel-campanulate, white to pink, with purple spots within at upper part of the tube, 3–3.5 cm, lobes 5, rounded; stamens 7–13, unequal, 1.5–3 cm, puberulent at the base; ovary ovoid, ca. 4 mm, 6- or 7-loculed, glandular-puberulent; style 2.5–3 cm, glabrous. Capsule cylindrical, 8–15 × 4–5 mm, often rufous-pubescent. Fl. Apr, fr. Jul.

• Forests, open thickets, valleys; 500–1300 m. NE Guizhou (Fanjing Shan).

**328. *Rhododendron fangchengense*** P. C. Tam, Guihaia 2: 71. 1982.

防城杜鹃 fang cheng du juan

Shrubs, 4–9 m tall; older branches glabrescent, leaf traces conspicuous; branches stout, 5–6 mm in diam. below inflorescence, grayish brown tomentose when young. Petiole cylindrical, 20–35 mm, pale gray or brown tomentose, glabrescent; leaf blade thickly leathery, long-lanceolate or narrowly oblanceolate, 8–15 × 1.5–3 cm; base cuneate; margin revolute; apex blunt; abaxial surface indumentum brownish; adaxial surface

yellowish, with a thin wax coating, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins obscure on both surfaces. Inflorescence 5–10-flowered; rachis ca. 10 mm, yellowish tomentose. Pedicel stout, 1–1.5 cm, pubescent; calyx discoid; lobes 5, ca. 1 mm; corolla funnel-campanulate, pink or white, 4–4.5 cm, lobes 5, orbicular, 1.5–2 cm; stamens 10, unequal, 2.2–3.5 cm, filaments pubescent below the middle; ovary cylindrical-ovoid, ca. 6 × 4 mm, ca. 5-locular; style ca. 3.5 cm, densely brownish tomentose below, stigma glabrous, small. Capsule oblong-cylindric, ca. 10 × 6–7 mm; style persistent. Fl. Mar–Apr, fr. Jul–Aug.

- Forests, thickets; 600–1400 m. S Guangxi.

**329. *Rhododendron longipes*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 528. 1913.

长柄杜鹃 chang bing du juan

Shrubs or small trees, 2–4 m tall; branches slender, at first puberulent, finally glabrous. Petiole grooved adaxially, 8–15 mm, glabrous; leaf blade leathery, elliptic or elliptic-lanceolate, 5–13 × 1.5–3.5 cm; base cuneate; margin revolute; apex acuminate; abaxial surface indumentum thinly or thickly brown-felted to compacted; adaxial surface dark green, glabrous; midrib prominent abaxially, depressed adaxially; lateral veins 9–12 on each side, obscure on both surfaces. Inflorescence 8–12-flowered; rachis 12–15 mm, glabrescent. Pedicel 2.5–3.5 cm, with sparse minute glands; calyx discoid, 5-toothed, glabrous; corolla funnel-campanulate, narrowed at base, rose, with dark red spots inside, 2.5–3.5 cm, lobes 5, unequal, ca. 1 × 1.5–2 cm, emarginate; stamens 10–12, 1–1.5 cm, filaments glabrous; ovary ovoid, ca. 5 mm, tomentose; style ca. 1.5 cm, glabrous, stigma slightly dilated. Fl. Apr–May.

- Forests, thickets; 1700–2500 m. Chongqing, E Guizhou, SW Sichuan, NE Yunnan.

- 1a. Petiole 1–1.5 cm; leaf blade 7–13 × 2–3.5 cm, abaxial surface with thin brown indumentum ..... 329a. var. *longipes*
- 1b. Petiole 0.8–1.2 cm; leaf blade 5–9 × 1.5–2 cm, abaxial surface with thicker, spongy, felted indumentum ..... 329b. var. *chienianum*

**329a. *Rhododendron longipes* var. *longipes***

长柄杜鹃(原变种) chang bing du juan (yuan bian zhong)

Leaf blade 7–13 × 2–3.5 cm; abaxial surface indumentum thin, brown. Fl. May.

- Forests, thickets; 2000–2500 m. E Guizhou, SW Sichuan, NE Yunnan.

**329b. *Rhododendron longipes* var. *chienianum*** (W. P. Fang) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 329. 1979.

金山杜鹃 jin shan du juan

*Rhododendron chienianum* W. P. Fang, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 12: 28. 1939.

Leaf blade 5–9 × 1.5–2 cm; abaxial surface indumentum

thicker, spongy. Ovary densely brown-tomentose and glandular. Fl. Apr–May.

- Forests; 1700–2100 m. Chongqing (Jinfo Shan), ?NE Yunnan.

The occurrence of this variety in NE Yunnan requires confirmation; the material may in fact belong to var. *longipes*.

**330. *Rhododendron pingianum*** W. P. Fang, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 12: 20. 1939.

海绵杜鹃 hai mian du juan

Shrubs or small trees, 4–9 m tall; bark gray or brownish gray, branchlets stout, ca. 4 mm in diam. below inflorescences. Petiole 10–20 mm, glabrescent when mature; leaf blade leathery, lanceolate or oblanceolate, 9–15 × 2.5–3.8 cm; base cuneate to subrounded; apex obtuse to acute; abaxial surface indumentum white, compacted; adaxial surface light green, glabrous; midrib prominent abaxially, impressed adaxially; lateral veins 12–16-paired, blunt on both surfaces. Inflorescence 12–22-flowered; rachis 10–20 mm, pubescent. Pedicel 2–4 cm, white-floccose; calyx lobes 5, ca. 5 mm; corolla funnel-campanulate, pinkish or rose, 3–3.5 cm, lobes 5, ca. 1 cm, emarginate; stamens 10, unequal, 0.8–1.5 cm, filaments slender, glabrous; ovary oblong-cylindric, ca. 5 mm, 8-locular, brownish tomentose; style 1–1.5 cm, glabrous. Capsule cylindrical, slightly curved, 20–30 × ca. 5 mm, glabrous. Fl. May–Jun, fr. Sep–Oct.

- Forests; 2300–2700 m. SW Sichuan.

**331. *Rhododendron argyrophyllum*** Franchet, Bull. Soc. Bot. France 33: 231. 1886.

银叶杜鹃 yin ye du juan

Small trees or shrubs, 3–7 m tall; bark grayish, rough; shoots greenish, glabrous when young. Petiole slender, 15–35 mm, glabrescent; leaf blade leathery or thickly leathery, narrowly elliptic or oblong-lanceolate, 8–13 × 2–4 cm; base cuneate; margin entire and slightly reflexed; apex acute; abaxial surface indumentum thin silvery-white felty to fawn plastered; adaxial surface deep green, slightly floccose when young, glabrous when mature, midrib prominent abaxially, grooved adaxially; lateral veins 12–14-paired, obscure on both surfaces. Inflorescence lax, 6–9-flowered; rachis 10–15 mm, rufous tomentose. Pedicel 1.5–3.5 cm, pubescent; calyx lobes 5, ca. 2 mm; corolla funnel-campanulate or campanulate, narrow or broad at base, white or pink, with purple or rose spots within on upper part, 2.5–3.5 cm, lobes 5, obovate, ca. 1 × 1.5 cm, emarginate; stamens 12–15(–16), unequal, 1.2–2.5 cm, filaments tomentose at base; ovary cylindrical-oblong, ca. 8 mm, with white or grayish indumentum; style ca. 1.8 cm, glabrous, stigma capitate. Capsule cylindrical, usually curved, 18–25 × ca. 6 mm, pubescent when young. Fl. Apr–May, fr. Jul–Aug.

- Forests, thickets; 1600–2300 m. E and NW Guizhou, S and W Sichuan, NE Yunnan.

Three subspecies may be recognized in China. In addition, var. *glabriovarium* M. Y. He (Acta Phytotax. Sin. 35: 66. 1997), described from C Sichuan (Dayi), needs to be considered. It differs from typical *Rhododendron argyrophyllum* in having the pistil longer than the corolla and in the glabrous ovary and style.

- 1a. Leaf blade thickly leathery, abaxial surface with 2-layered white indumentum ..... 331c. subsp. *nankingense*
- 1b. Leaf blade leathery, abaxial surface with a thin 1-layered white or brown indumentum.
  - 2a. Abaxial leaf surface with silvery-white indumentum ..... 331a. subsp. *argyrophyllum*
  - 2b. Abaxial leaf surface with brownish indumentum ..... 331b. subsp. *omeiense*

**331a. *Rhododendron argyrophyllum* subsp. *argyrophyllum***

银叶杜鹃(原亚种) yin ye du juan (yuan ya zhong)

?*Rhododendron argyrophyllum* var. *cupulare* Rehder & E. H. Wilson; *R. chionophyllum* Diels.

Leaf blade leathery, narrowly elliptic or oblong-lanceolate, 8–13 × 2–4 cm; abaxial surface indumentum 1-layered, silvery-white. Fl. May–Jun, fr. Aug–Sep.

- Thickets; 1600–2300 m. NW Guizhou, SW Sichuan, NE Yunnan.

There may be a case for transferring var. *cupulare* to *Rhododendron pingianum*.

**331b. *Rhododendron argyrophyllum* subsp. *omeiense*** (Rehder & E. H. Wilson) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 329. 1979.

峨眉银叶杜鹃 e mei yin ye du juan

*Rhododendron argyrophyllum* var. *omeiense* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 527. 1913.

Leaf blade leathery, smaller; abaxial surface indumentum 1-layered, fawn or deeper-colored. Fl. May, fr. Jul.

- Forests; 1800–2000 m. W Sichuan.

**331c. *Rhododendron argyrophyllum* subsp. *nankingense*** (Cowan) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 329. 1979.

黔东银叶杜鹃 qian dong yin ye du juan

*Rhododendron argyrophyllum* var. *nankingense* Cowan, Notes Roy. Bot. Gard. Edinburgh 21: 149. 1953; *R. argyrophyllum* var. *leiandrum* Hutchinson.

Leaf blade thickly leathery; abaxial surface indumentum 2-layered, whitish or grayish. Fl. Apr–May, fr. Jul.

- Thickets; 1800–2300 m. E Guizhou (Leishan), S Sichuan.

**332. *Rhododendron hypoglaucom*** Hemsley, J. Linn. Soc., Bot. 26: 25. 1889.

粉白杜鹃 fen bai du juan

*Rhododendron argyrophyllum* Franchet subsp. *hypoglaucom* (Hemsley) D. F. Chamberlain; *R. gracilipes* Franchet.

Shrubs, 3–10 m tall; bark gray; shoots smooth, greenish, glabrous. Petiole cylindrical, 10–20 mm, glabrous; leaf blade leathery, lanceolate-elliptic or lanceolate-obovate, 6–10 × 2–3.5 cm; base cuneate; margin slightly revolute; apex acute or apiculate; abaxial surface indumentum thin, smooth, silvery-white;

adaxial surface bright green, smooth, glabrous, midrib conspicuously prominent abaxially, grooved adaxially; lateral veins 10–14 on each side, blunt on both surfaces. Inflorescence 4–9-flowered; rachis 5–15 mm, with yellowish pubescence, glabrescent. Pedicel 2–3 cm, glabrous; calyx membranous; lobes 5, ca. 2 mm, ovate-triangular; corolla funnel-campanulate, narrowed at base, white flushed pink or pale rose, with numerous deep rose or purple spots, 2.5–3.5 cm, lobes 5, orbicular, ca. 1 × 1.5 cm, emarginate; stamens 10, unequal, 1.5–2 cm, filaments flattened towards the base, densely white-puberulent below; ovary cylindrical, 4–5 mm, glabrous or rarely with glandular hairs at apex; style 2–2.5 cm, glabrous, Capsule cylindrical, 6-valved at maturity, 20–25 × ca. 6 mm, glabrous. Fl. Apr–May, fr. Jul–Sep.

- Thickets; 1500–2100 m. Chongqing, W Hubei, S Shaanxi, E Sichuan.

**333. *Rhododendron coryanum*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 99. 1926.

光蕊杜鹃 guang rui du juan

Shrubs, ca. 3–6 m tall; branchlets brownish, ca. 4 mm in diam., grayish pubescent. Petiole cylindrical, grooved adaxially, 15–20 mm, thinly tomentose, with a few short glandular hairs; leaf blade leathery, long-elliptic to oblong-lanceolate, 7–14 × 2–3 cm; base tapering, cuneate; apex acute to acuminate; abaxial surface indumentum thin, silvery grayish or whitish, soft and suedelike, also with sparsely scattered very small glands; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially, lateral veins 15–20-paired, slightly impressed adaxially. Inflorescence 15–20-flowered; rachis 20–30 mm, puberulent. Pedicel 3–4 cm, sparsely tomentose and glandular; calyx lobes 5, ca. 2 mm, ovate or triangular, sparsely tomentose; corolla funnel-campanulate, creamy-white or whitish with brownish crimson spots, 2.5–3 cm, puberulent inside; lobes 5, orbicular, ca. 1.5 cm; stamens 10, unequal, 2–2.5 cm, filaments puberulent at lower part; ovary conoid, ca. 5 mm, glabrous; style 2–2.5 cm, slender. Capsule cylindrical, slightly curved, 15–25 × 4–6 mm, glabrous. Fl. Jun, fr. Aug–Oct.

- *Abies* forests, *Rhododendron* thickets; 2600–3700 m. SE Xizang, NW Yunnan.

**334. *Rhododendron thayerianum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 529. 1913.

反边杜鹃 fan bian du juan

Shrubs, 3–4 m tall; branches stout, thick; bud scales persisting among the leaves for several years, membranous or thinly leathery, ovate or lanceolate, 2–3.5 cm. Petiole cylindrical, stout, grooved adaxially, 10–15 mm, sparsely glandular, glabrescent; leaf blade leathery, narrowly oblanceolate, 9–17 × 1.5–2.5 cm; base cuneate; margin revolute; apex acuminate; abaxial surface, except midrib, sparsely glandular and with thinly silvery to fawn indumentum; adaxial surface glabrous; midrib prominent abaxially, deeply grooved adaxially; lateral veins 10–12-paired, impressed. Inflorescence a racemose corymb, 10–20-flowered; rachis 30–40 mm, shortly glandular-hairy. Pedicel slender, 3–5 cm, densely glandular; calyx lobes 5, unequal, ovate, densely glandular, 2–4 mm; corolla funnel-campanulate,

white, sometimes deeply flushed pink on the outside along the petal ridges, or pink, without spots, 2–3 cm, lobes 5, orbicular, ca. 1.3 × 1–1.5 cm; stamens 10, unequal, 1.5–2 cm, filaments with base widened and floccose; ovary oblong, ca. 5 mm, 6–8-locular, with translucent whitish glands; style 2–2.5 mm, glandular to tip. Capsule oblong-cylindric, ca. 25 × 6 mm. Fl. May–Jun, fr. Aug–Oct.

- Woodlands; 2600–3000 m. W Sichuan.

**335. *Rhododendron hunnewellianum*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 535. 1913.

岷江杜鹃 min jiang du juan

Shrubs, 2–5 m tall; branchlets stout, 4–5 mm in diam. below inflorescence, at first grayish tomentose, glabrescent. Petiole grooved adaxially, 10–15 mm, puberulent at first, glabrescent; leaf blade leathery, narrowly lanceolate, or narrowly oblanceolate, 7–13 × 1.5–2.8 cm; base cuneate; margin slightly reflexed; apex acuminate; abaxial surface with indumentum 2-layered, initially white, sometimes becoming tawny or grayish with age, upper layer forming a loose woolly surface; lower layer compacted and whitish; adaxial surface green, glabrescent, midrib conspicuous, prominent abaxially, deeply grooved adaxially; lateral veins 15–20-paired, inconspicuous. Inflorescence 3–7-flowered; rachis 5–10 mm, pubescent. Pedicel 1–2 cm, sparsely tomentose and shortly glandular-hairy; calyx discoid, small, glandular-ciliate; corolla widely campanulate, white, pale rose or purple, deeper in bud, pink-spotted within, 3–5 cm, densely puberulent below within; lobes 5, orbicular; stamens 10, unequal, 2–3.5 cm, filaments pubescent at base; ovary conoid, ca. 7 mm, densely whitish tomentose; style 4–4.2 cm, with a little tomentum and sometimes with a few glands at base, otherwise glabrous. Capsule oblong cylindric, 20–25 × ca. 6 mm, brown tomentose. Fl. Apr–May, fr. Jul–Sep.

**13. *Rhododendron*** subsect. *Arborea* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 545. 1949.

树形杜鹃亚组 shu xing du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Arborea* Tagg in J. B. Stevenson, Sp. Rhodod. 12. 1930 [*“Arboreum”*].

Trees; bark rough; young shoots tomentose or floccose, glabrescent. Leaf blade elliptic to oblanceolate; abaxial surface densely spongy to compacted, white to fawn, tomentose, hairs dendroid sometimes with a floccose rufous upper layer. Inflorescence dense, 10–30-flowered. Calyx minute, 1–2 mm; corolla campanulate or tubular-campanulate, 5-lobed, pink to deep crimson, magenta or lilac, very rarely white, with nectar pouches; stamens 10; ovary densely tomentose, rarely glandular; style glabrous.

About four species: Bhutan, China, India, Kashmir, Myanmar, Nepal, Sikkim, Sri Lanka, Thailand, Vietnam; four species in China.

This is a subsection of uncertain affinities, though probably allied to *R.* subsect. *Argyrophylla* and, in particular, to *R. denudatum*.

- 1a. Pedicel with some glandular hairs in among indumentum; capsule ca. 3 cm ..... 336. *R. arboreum*
- 1b. Pedicel without glandular hairs; capsule 1.5–2 cm.
  - 2a. Calyx glabrous; inflorescence 20–30-flowered; abaxial leaf surface indumentum 2-layered with dense woolly upper layer ..... 339. *R. lanigerum*
  - 2b. Calyx hairy; inflorescence 10–20-flowered; abaxial leaf surface indumentum 1-layered, felted or spongy.
    - 3a. Corolla tubular-campanulate; rachis ca. 2 cm ..... 337. *R. niveum*
    - 3b. Corolla campanulate; rachis ca. 1 cm ..... 338. *R. delavayi*

**336. *Rhododendron arboreum*** Smith, Exot. Bot. 1: 9. 1805.

树形杜鹃 shu xing du juan

Trees, usually evergreen, (1–)5–20(–30) m tall; trunk well-

- Woodlands, thickets, valleys along the Min Jiang, mountain slopes; 1200–2400 m. S Gansu, C and N Sichuan.

- 1a. Abaxial leaf surface indumentum always white; corolla 4–5 cm ..... 335a. subsp. *hunnewellianum*
- 1b. Abaxial leaf surface indumentum white gradually becoming tawny or grayish; corolla 3–4 cm ..... 335b. subsp. *rockii*

**335a. *Rhododendron hunnewellianum*** subsp. *hunnewellianum*

岷江杜鹃(原亚种) min jiang du juan (yuan ya zhong)

*Rhododendron leucolasium* Diels.

Leaf blade lanceolate, 7–13 × 1.5–2.5 cm; abaxial surface indumentum white, not changing color with age. Corolla 4–5 cm. Fl. Apr–May, fr. Jul–Sep.

- Woodlands, thickets, valleys along the Min Jiang; 1200–1900 m. C and N Sichuan.

**335b. *Rhododendron hunnewellianum*** subsp. *rockii* (E. H. Wilson) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 329. 1979.

黄毛岷江杜鹃 huang mao min jiang du juan

*Rhododendron rockii* E. H. Wilson, J. Arnold Arbor. 9: 103. 1928.

Leaf blade 7–10 cm; abaxial surface indumentum white, turning tawny or grayish at maturity. Corolla 3–4 cm. Fl. Apr–May.

- Thickets, mountain slopes; 1600–2400 m. S Gansu, N Sichuan.

defined; bark gray-brownish, exfoliating into thin and small irregular flakes; young shoots stout, with distinct leaf traces, densely grayish tomentose, glabrescent. Winter buds ovoid, 10–12 × 5–6 mm, puberulent. Petiole 10–25 mm with dense fawn

indumentum intermixed with glands, sometimes glabrescent; leaf blade leathery, oblong-lanceolate or oblong-oblongeolate, 6–15 × 2–4.5 cm; base cuneate or ± rounded; margin revolute; apex acuminate or acute; abaxial surface with indumentum 1- or 2-layered, densely compacted, white to fawn tomentose, sometimes with loosely floccose brown upper layer, hairs dendroid, glabrescent; adaxial surface reticulate to bullate, glabrous; midrib deeply impressed adaxially; lateral veins 15–26-paired. Inflorescence dense, ca. 20-flowered, rachis 10–15 mm, tomentose. Pedicel ca. 0.9 cm, pilose, glandular; calyx lobes 5, 1–2 mm, small, triangular, sparsely glandular and hairy; corolla tubular-campanulate, pink to deeply crimson, rarely white, 3.5–4 cm, with 5 black-blotched basal nectar pouches and dark flecks; lobes 5, 1.2–1.7 cm, apex emarginate; stamens 10, unequal, 1.7–2.7 cm, filaments glabrous; ovary conoid, 4–6 mm, white-tomentose, sometimes also glandular; style ca. 3.3 cm, glabrous. Capsule cylindric, ca. 30 × 6 mm. Fl. May, fr. Aug.

Forests, thickets, slopes; 1500–3800 m. ?W Guizhou, S Xizang [Bhutan, N India, Kashmir, Nepal, Sikkim, Sri Lanka, N Thailand, N Vietnam].

Three varieties occur in China. The name used in Xizang, “da ma” (打马), refers to the medicinal use of the flowers in treating coughs.

- 1a. Abaxial leaf surface with 2-layered indumentum, the upper layer loosely brown-floccose ..... 336b. var. *cinnammomeum*
- 1b. Abaxial leaf surface with 1-layered compacted, fawn to white indumentum.
  - 2a. Abaxial leaf surface with white to silvery-white indumentum; corolla red to carmine, rarely pink ..... 336a. var. *arboreum*
  - 2b. Abaxial leaf surface usually with fawn indumentum; corolla pink to red or white ..... 336c. var. *roseum*

**336a. *Rhododendron arboreum* var. *arboreum***

树形杜鹃(原变种) shu xing du juan (yuan bian zhong)

*Rhododendron puniceum* Roxburgh; *R. windsorii* Nuttall.

Leaf blade usually oblong-lanceolate, 6–15 × 2–4 cm; apex acuminate or acute; abaxial surface indumentum 1-layered, white to silvery-white. Corolla red to deeply crimson. Fl. May, fr. Aug.

Mixed forests; 1500–3600 m. ?W Guizhou, S Xizang [Bhutan, N India, Nepal, Sikkim].

The occurrence of this variety in W Guizhou requires confirmation.

**336b. *Rhododendron arboreum* var. *cinnammomeum*** (Wallich ex G. Don) Lindley, Edwards’s Bot. Reg. 23: t. 1982. 1837.

棕色树形杜鹃 zong se shu xing du juan

*Rhododendron cinnammomeum* Wallich ex G. Don, Gen. Hist. 3: 844. 1834; *R. arboreum* subsp. *campbelliae* (J. D. Hooker) Tagg; *R. arboreum* subsp. *cinnammomeum* (Wallich ex G. Don) Tagg; *R. campbelliae* J. D. Hooker.

Leaf blade abaxial surface with indumentum 2-layered, upper layer loosely brown-floccose, lower layer compact, fawn

to white. Corolla pink to carmine, occasionally white.

Forests, thickets, open slopes; 2600–3800 m. S Xizang [NE India, E Nepal].

**336c. *Rhododendron arboreum* var. *roseum*** Lindley, Edwards’s Bot. Reg. 15: t. 1240. 1829.

粉红树形杜鹃 fen hong shu xing du juan

*Rhododendron arboreum* var. *album* Wallich; *R. album* Buchanan-Hamilton ex D. Don (1825), not Blume (1823), nor Hoffmannsegg (1826).

Leaf blade 6.5–11 × 2.2–4.5 cm; apex acute; abaxial surface with indumentum 1-layered, compact, fawn or white. Corolla pink to carmine or white.

Broad-leaved mixed forests, coniferous forests, thickets, rocky slopes; 2500–3500 m. S Xizang [Bhutan, NE India, E Nepal, Sikkim].

**337. *Rhododendron niveum*** J. D. Hooker, J. Hort. Soc. London 7: 78. 1852.

西藏毛脉杜鹃 xi zang mao mai du juan

Shrubs or trees, 2–6 m tall; bark cinereous; older branches brownish, glabrescent; branches ca. 6 mm in diam. below inflorescence; young shoots grayish green, densely tomentose. Petiole 13–15 mm; leaf blade leathery, oblanceolate to elliptic, 8.5–11 × 3.6–4.6 cm; base tapering or rounded; margin revolute; apex obtuse or rounded, apiculate; abaxial surface with 1-layered indumentum densely compacted, fawn, glabrescent, hairs dendroid; adaxial surface of unfolding leaves scattered white floccose, at maturity glabrous except for traces of tomentum chiefly in groove of midrib; midrib prominent abaxially, grooved adaxially; lateral veins 11–16 on each side. Inflorescence spherical, dense, 15–20-flowered, rachis ca. 20 mm, fulvous tomentose. Pedicel ca. 1 cm, densely white- to rufous-tomentose; calyx teeth minute, 1–2 mm, tomentose; corolla tubular-campanulate, deep magenta to deep lilac, 3–3.5 cm, with 5 deep purple basal nectar pouches; stamens 10, unequal, 1.8–2.8 cm, filaments glabrous; ovary cylindric or oblong, ca. 6 mm, densely whitish to tawny-tomentose; style glabrous, stigma capitate, small. Capsule shortly cylindric, blunt, 15–18 mm, blackish, roughened with vestiges of tomentum. Fl. Apr–May, fr. Aug–Sep.

Mixed forests, rocky valleys; 2600–3500 m. S Xizang [Bhutan, NE India, Sikkim].

**338. *Rhododendron delavayi*** Franchet, Bull. Soc. Bot. France 33: 231. 1886.

马缨杜鹃 ma ying du juan

Shrubs or trees, 1–7(–12) m tall; bark grayish, exfoliating into thin and small irregular flakes; young shoots stout, white-floccose, glabrescent. Winter buds ovoid, greenish, 6–7 mm, slightly tomentose. Petiole cylindric, 7–20 mm, glabrous; leaf blade leathery, long-lanceolate, 7–15 × 1–5 cm; base tapering; margin revolute; apex obtuse or acute; abaxial surface with indumentum 1-layered, spongy or somewhat agglutinated, whitish to fawn, glabrescent; adaxial surface light or dark green, ± rugose, glabrous at maturity, midrib very prominent abaxially,

deeply grooved adaxially; lateral veins 14–20-paired, slightly raised abaxially, impressed adaxially; reticulate veins evident. Inflorescence spherical, umbellate, 10–20-flowered; rachis ca. 10 mm, densely fawn-tomentose. Pedicel stout, 0.8–1 cm, densely fawn-tomentose; calyx lobes 5, ca. 2 mm, triangular; corolla campanulate, fleshy, deep crimson to carmine, 3–5 × 3–4 cm, with 5 basal nectar pouches; lobes 5, ca. 1 × 1.3 cm, apex emarginate; stamens 10, unequal, 1.6–4 cm, filaments glabrous, anthers oblong, 2–2.8 mm; ovary conoid, ca. 8 mm, 10-locular, densely fawn-tomentose; style ca. 2.8 cm, glabrous or floccose to tip, stigma capitate. Capsule oblong, 18–20 × ca. 8 mm, blackish and roughened with the remains of the rusty tomentum. Fl. May, fr. Dec.

Mixed forests, evergreen broad-leaved forests, forest margins, thickets, hills, rocky slopes; 1200–3200 m. NW Guangxi, W Guizhou, SW Sichuan, SE Xizang, Yunnan [Bhutan, NE India, Myanmar, Thailand, N Vietnam].

*Rhododendron delavayi* intergrades with *R. arboreum* in Bhutan and NE India.

- 1a. Style floccose to tip ..... 338c. var. *pilostylum*
- 1b. Style glabrous.
  - 2a. Leaf blade 1.5–5 cm wide; abaxial surface with whitish to fawn spongy indumentum ..... 338a. var. *delavayi*
  - 2b. Leaf blade 1–2 cm wide; abaxial surface with fawn somewhat agglutinated indumentum ..... 338b. var. *peramoenum*

**338a. *Rhododendron delavayi* var. *delavayi***

马缨杜鹃(原变种) ma ying du juan (yuan bian zhong)

*Rhododendron arboreum* Smith subsp. *delavayi* (Franchet) D. F. Chamberlain; *R. pilovittatum* I. B. Balfour & W. W. Smith.

Leaf blade oblong-lanceolate to oblong-oblongeolate, 7–15 × 1.5–5 cm; apex obtuse or acute; abaxial surface indumentum white to fawn, spongy; adaxial surface rugose. Corolla style glabrous. Fl. May, fr. Dec.

Evergreen broad-leaved forests, thickets; 1200–3200 m. NW Guangxi, W Guizhou, SW Sichuan, Yunnan [Bhutan, NE India, Myanmar, Thailand, N Vietnam].

**338b. *Rhododendron delavayi* var. *peramoenum*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 148. 1984.

狭叶马缨杜鹃 xia ye ma ying du juan

*Rhododendron peramoenum* I. B. Balfour & Forrest,

Notes Roy. Bot. Gard. Edinburgh 13: 56. 1920; *R. arboreum* var. *peramoenum* (I. B. Balfour & Forrest) D. F. Chamberlain.

Leaf blade very narrowly lanceolate, 7.5–9.5(–15) × 1–2 cm; apex acute to shortly cuspidate; abaxial surface indumentum gray to fawn, somewhat thin, compact, persistent; adaxial surface much less rugose. Corolla ca. 5 cm; style glabrous.

Mixed forests, evergreen broad-leaved forests, forest margins, thickets; 1700–3200 m. W Guizhou, SE Xizang, W Yunnan [NE India, Myanmar].

**338c. *Rhododendron delavayi* var. *pilostylum*** K. M. Feng, Acta Bot. Yunnan. 5: 265. 1983.

毛柱马缨杜鹃 mao zhu ma ying du juan

Style floccose to tip.

- Hills, rocky slopes; 1500–1600 m. SE Yunnan.

**339. *Rhododendron lanigerum*** Tagg in J. B. Stevenson, Sp. Rhodod. 248. 1930.

林生杜鹃 lin sheng du juan

*Rhododendron lanigerum* var. *silvaticum* (Cowan) Davidian; *R. silvaticum* Cowan.

Shrubs or trees, 2.7–6 m tall; branches stout, usually crooked and gnarled, ca. 5 mm in diam. below inflorescence, thinly grayish tomentose. Petiole rounded abaxially, grooved adaxially, 15–25 mm, glabrous above, densely gray-tomentose; leaf blade leathery, oblong-lanceolate or oblong-oblongeolate, 11.5–14.5(–22) × 2–3.3(–7) cm; base obtuse to cuneate; margin revolute; apex acuminate, cuspidate; abaxial surface with indumentum 2-layered, dense, whitish to fawn, upper layer densely woolly-tomentose, hairs dendroid, lower layer thin, compacted; adaxial surface rugulose, glabrous at maturity though often with traces of indumentum along midrib; midrib deeply grooved; primary veins 12–15-paired, impressed. Inflorescence a congested racemose truss, 20–30-flowered; rachis stout, ca. 20 mm, with dense fawn or ferruginous tomentum. Pedicel 1–1.2 cm, pubescent; calyx fleshy; lobes 5, ca. 2 mm, triangular, glabrous; corolla campanulate, fleshy, deep pink to rosy purple, ca. 3.5 cm, with 5 darker basal nectar pouches; lobes 5, suborbicular, ca. 1.5 × 2 cm, apex emarginate; stamens 10, unequal, 1.4–1.9 cm, filaments white, glabrous; ovary cylindrical-conoid, ca. 8 × 2.2 mm, densely fawn or grayish tomentose; style ca. 1.9 cm, glabrous, stigma small. Capsule shortly oblong, ca. 20 × 7 mm. Fl. Apr, fr. not known.

Forests; 2700–3100 m. SE Xizang [NE India].

**14. *Rhododendron* subsect. *Taliensia*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 550. 1949.

大理杜鹃亚组 da li du juan ya zu

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

*Rhododendron* ser. *Taliensia* Tagg in J. B. Stevenson, Sp. Rhodod. 628. 1930 [*Taliense*].

Shrubs or small trees; young shoots glabrous or densely tomentose, sometimes also with glandular hairs. Leaf blade leathery; abaxial surface with 1- or 2-layered indumentum composed of branched, radiate or fasciculate hairs, indumentum usually thick, woolly, felted, rust-red, tawny to yellow, rarely white, sometimes sparse or even absent; adaxial surface glabrous at maturity, usually

smooth, occasionally bullate. Inflorescence terminal, usually compact, 5–20-flowered; rachis short. Calyx cup-shaped, lobes small or large; corolla campanulate or funnel-campanulate, 5(–7)-lobed, thin in texture, white, pink, purplish, pale yellow, rarely yellow or deep red, often with conspicuous spots; stamens 10(–14); ovary glabrous to densely rufous tomentose or glandular and tomentose or glandular hairy only; style glabrous, rarely glandular-hairy.

Fifty-six species: Bhutan, China, Myanmar, Nepal, Sikkim; 56 species (54 endemic) in China.

- 1a. Calyx (3–)5–15 mm.
- 2a. Abaxial leaf surface with discontinuous indumentum.
- 3a. Abaxial leaf surface indumentum loose, woolly, patchy, ± deciduous.
- 4a. Leaf blade 3–6 × 1–2 cm, indumentum red-brown; corolla yellow; style glandular to apex ..... 343. *R. codonanthum*
- 4b. Leaf blade 7–10 × 2–4 cm, indumentum pale brown; corolla pink; style glandular in lower 3/4 ..... 344. *R. ×detonsum*
- 3b. Abaxial leaf surface indumentum scattered or only along midrib.
- 5a. Leaf blade with abaxial surface loosely woolly-tomentose along midrib only; petioles tomentose and glandular ..... 340. *R. pubicostatum*
- 5b. Leaf blade with abaxial surface sparsely and minutely pubescent.
- 6a. Leaf blade 7–9 cm, without punctate glands; petioles glabrous; calyx ca. 5 mm ..... 341. *R. montiganum*
- 6b. Leaf blade 4.5–6.5 cm, punctate; petioles glabrous; calyx 4–6 mm ..... 342. *R. punctifolium*
- 2b. Abaxial leaf surface with continuous indumentum.
- 7a. Indumentum 2-layered, upper layer usually thick, composed of branched hairs, lower layer thin and appressed.
- 8a. Petiole glabrous; pedicel 2–2.5 cm ..... 355. *R. ×sinosimulans*
- 8b. Petiole pubescent, tomentose or floccose, sometimes glabrescent; pedicel 1–2 cm.
- 9a. Leaf blade oblong, 4–7 × 1.5–2.5 cm; inflorescence bud-scales ± persistent during flowering; pedicel 1–1.5 cm ..... 393. *R. ×bathyphyllum*
- 9b. Leaf blade elliptic to oblong-ovate, 6–17 × 2.5–7 cm; inflorescence bud-scales not persistent; pedicel 1.5–2 cm.
- 10a. Young shoots and petiole densely pubescent; calyx 8–12 mm; petiole 1.5–2.5 cm ..... 354. *R. faberi*
- 10b. Young shoots and petiole sparsely floccose, often glabrescent; calyx 3–6 mm; petiole 1–1.5 cm ..... 356. *R. mimetes*
- 7b. Leaf indumentum 1-layered, thin or ± dense and thick.
- 11a. Leaf indumentum thin.
- 12a. Ovary glandular, style glandular in lower part; leaf blade 5–8 × 2.5–3.5 cm, indumentum pale brown to cinnamon, ± agglutinated; corolla pale pink to pink ..... 345. *R. balfourianum*
- 12b. Ovary hairy, style glabrous, eglandular; leaf blade various; corolla white or pink.
- 13a. Leaf blade 8.5–10 × 3.6–4.7 cm, indumentum pale yellow, not agglutinated; corolla pink, 3.5 cm ..... 346. *R. pomense*
- 13b. Leaf blade 7.5–9.5 × 3.2–4.5 cm, indumentum tawny, ± agglutinated; corolla white, 3–3.5 cm ..... 347. *R. trichogynum*
- 11b. Leaf indumentum ± dense and thick.
- 14a. Leaf indumentum spongy, cinnamon to tawny; leaf blade 6–12 × 2–4 cm; ovary densely stipitate glandular, style glandular in lower part ..... 348. *R. adenogynum*
- 14b. Indumentum felted or woolly.
- 15a. Indumentum felted, tawny to fawn, sparsely glandular on midrib.
- 16a. Leaf blade 6.5–7.5 × 3–4 cm; corolla campanulate; ovary glandular, style glabrous ..... 349. *R. dunicola*
- 16b. Leaf blade 7–10 × 2.5–3.5 cm; corolla funnel-campanulate, pale red; ovary sparsely pubescent and glandular, style glandular at base ..... 350. *R. zhongdianense*
- 15b. Leaf indumentum woolly, rust-red or red-brown, eglandular.
- 17a. Shoots and petioles densely hairy and glandular ..... 351. *R. bureavii*
- 17b. Shoots and petioles densely tomentose, eglandular.
- 18a. Leaf blade 8.5–13 × 3.5–5.5 cm; ovary densely villous, style villous, and with few dendroid branched hairs in lower half ..... 353. *R. pugeense*
- 18b. Leaf blade 3–9 × 1–3 cm; ovary and style with glandular hairs.
- 19a. Petiole 3–4 mm; inflorescence 4–8-flowered ..... 362. *R. deterrentis*
- 19b. Petiole 10–15 mm; inflorescence 10–20-flowered ..... 352. *R. elegantulum*
- 1b. Calyx 0.5–3 mm.
- 20a. Abaxial leaf surface glabrous or with discontinuous indumentum.
- 21a. Leaf indumentum absent; corolla pink; ovary sparsely pubescent ..... 361. *R. purdomii*
- 21b. Leaf indumentum discontinuous, scattered; ovary tomentose and sometimes glandular.
- 22a. Ovary tomentose and glandular; leaf blade abaxial surface with glands; corolla rose or pale yellow, with fine spots and crimson basal blotch ..... 360. *R. dignabile*

- 22b. Ovary tomentose but not glandular; leaf blade not glandular; corolla white or creamy white.
- 23a. Abaxial leaf surface densely hairy only on lower half of midrib ..... 359. *R. potaninii*
- 23b. Abaxial leaf surface sparsely fawn tomentose, hairs  $\pm$  peeling off.
- 24a. Pedicel tawny tomentose; apex obtuse,  $\pm$  beaked; corolla obliquely-campanulate, white, ca. 4 cm ..... 357. *R.  $\times$ paradoxum*
- 24b. Pedicel whitish tomentose; apex acute; corolla funnel-campanulate, creamy white, ca. 2.5 cm ..... 358. *R.  $\times$ inopinum*
- 20b. Abaxial leaf surface with continuous indumentum.
- 25a. Adaxial leaf surface bullate.
- 26a. Leaf blade obovate-oblong to lanceolate; abaxial surface with 1-layered indumentum; corolla white to pink, 3–4 cm ..... 363. *R. wiltonii*
- 26b. Leaf blade oblanceolate; abaxial surface with 2-layered indumentum, upper-layer thick,  $\pm$  peeling off; corolla pink to pale purple, 4–4.5 cm ..... 364. *R. coeloneurum*
- 25b. Adaxial leaf surface smooth, not bullate.
- 27a. Abaxial leaf surface indumentum thick, spongy or woolly, with pellicle.
- 28a. Corolla broadly-campanulate, 6(–7)-lobed; stamens 12(–14); abaxial leaf surface gray-white to pale cinnamon, woolly ..... 368. *R. clementinae*
- 28b. Corolla funnel-campanulate, 5-lobed; stamens 10; indumentum spongy; abaxial leaf surface white to yellowish or silvery-white to gray-yellow.
- 29a. Petiole 8–15 mm, glabrous or with a few glands; abaxial leaf surface with 1-layered indumentum; capsule straight ..... 365. *R. aganniphum*
- 29b. Petiole 15–20 mm, white-floccose; abaxial leaf surface with 2-layered indumentum; capsule curved ..... 366. *R. vellereum*
- 27b. Abaxial leaf surface without pellicle.
- 30a. Indumentum thin, 1-layered, agglutinated or not.
- 31a. Corolla yellow.
- 32a. Ovary glabrous; leaf blade abaxial surface densely pale brown radiate-tomentose, base cordate; corolla pale yellow with purple spots ..... 373. *R. barkamense*
- 32b. Ovary tomentose or glandular-hairy.
- 33a. Ovary densely red short glandular-hairy; corolla bright yellow, with crimson spots; calyx 2–4 mm ..... 343. *R. codonanthum*
- 33b. Ovary white- or brown-tomentose; corolla paler yellow, often without markings; calyx to 1.5 mm.
- 34a. Leaf indumentum composed of radiate hairs, leaf blade abaxial surface with dense cinnamon to fawn tomentum, base broadly cuneate; corolla spotted ..... 376. *R. wightii*
- 34b. Leaf indumentum composed of branched hairs, leaf blade broadly-elliptic, base auriculate-cordate or slightly cordate; corolla unspotted.
- 35a. Leaf blade abaxial surface densely yellowish green to pale brown tomentose, base auriculate-cordate; corolla pale yellow ..... 374. *R. heizhugouense*
- 35b. Leaf blade abaxial surface densely fawn to gray-tawny tomentose; base rounded, slightly cordate; corolla pure yellow ..... 375. *R. lacteum*
- 31b. Corolla white to pink.
- 36a. Indumentum not agglutinated, compacted.
- 37a. Leaf blade oblanceolate, 10–25  $\times$  3–7 cm, abaxial surface fawn to cinnamon, with compacted indumentum, not powdery; corolla broadly campanulate, with few or no spots; ovary tomentose ..... 377. *R. beesianum*
- 37b. Leaf blade oblong-lanceolate, 6.5–10  $\times$  2.5–3.5 cm, abaxial surface pale brown to tawny with powdery indumentum; corolla funnel-campanulate, spotted; ovary glabrous or sometimes sparsely floccose ..... 378. *R. traillianum*
- 36b. Indumentum  $\pm$  agglutinated.
- 38a. Petiole 2–2.5 cm; ovary with glandular hairs ..... 372. *R. lulangense*
- 38b. Petiole 0.6–1.5 cm; ovary without glandular hairs, usually glabrous.
- 39a. Petiole flattened, 6–8  $\times$  ca. 5 mm; pedicel 2–2.5 cm; base of leaf blade cuneate, abaxial indumentum white ..... 371. *R. torquescens*
- 39b. Petiole 10–15 mm; pedicel 1–1.5 cm; base of leaf blade rounded or sub-cordate.
- 40a. Young shoots and petioles white-floccose, glabrescent; abaxial leaf surface usually with long-rayed stellate hairs (with branched hairs in subsp. *yushuense*), indumentum sometimes deciduous ..... 369. *R. przewalskii*
- 40b. Young shoots and petioles glabrous; abaxial leaf surface with branched hairs, indumentum persistent ..... 370. *R. phaeochrysum*



- 30b. Indumentum thick, loose or dense, 1- or 2-layered, woolly or felted.
- 41a. Abaxial leaf surface with 1-layered indumentum.
- 42a. Ovary hairy or glabrous.
- 43a. Shoots, petioles and ovaries hairy; leaf blade ovate-lanceolate, 2.5–4 cm wide, abaxial surface red-brown to rust-brown; corolla white to pink or yellow ..... 379. *R. wasonii*
- 43b. Shoots, petioles and ovaries glabrous; leaf blade elliptic, 4–6.5 cm wide; abaxial surface yellow initially, later deep brown; corolla pale purple ..... 380. *R. shanii*
- 42b. Ovary hairy and glandular.
- 44a. Shoots and petioles densely branched-hairy, eglandular; leaf blade oblong-elliptic, 9–12 cm; abaxial surface with dense, thick indumentum; corolla white ..... 381. *R. danbaense*
- 44b. Shoots and petioles densely tomentose and glandular; leaf blade lanceolate, 12–17 cm; abaxial surface with loose woolly indumentum; corolla initially deep pink, later yellowish pink ..... 382. *R. nigroglandulosum*
- 41b. Abaxial leaf surface with 2-layered indumentum.
- 45a. Dwarf shrubs; bud-scales persistent, leaves usually narrower; margin conspicuously revolute.
- 46a. Leaf blade oblanceolate or narrowly-oblanceolate, at least 3–4 × as long as broad.
- 47a. Leaf blade 6–10 cm; pedicels tomentose and glandular; corolla white tinged pink, 3–4 cm, style glabrous ..... 389. *R. roxieanum*
- 47b. Leaf blade 5.5–7.5 cm; pedicels tomentose, eglandular; corolla deep pink, 2.5–3.5 cm, style glandular in lower half ..... 390. *R. roxieoides*
- 46b. Leaf blade oblong, oblong-elliptic, oblanceolate or narrowly-elliptic, rarely as much as 3 × as long as broad.
- 48a. Plants procumbent, 0.1–0.5 m tall; ovary and filaments glabrous ..... 392. *R. pronum*
- 48b. Plants erect, 0.6–1.5 m tall; ovary and filaments hairy.
- 49a. Leaf blade 0.5–1 cm wide; pedicel ca. 1 cm; corolla white to pale yellow, ca. 3 cm ..... 394. *R. proteoides*
- 49b. Leaf blade 1–1.5 cm wide; pedicel ca. 2 cm; corolla deep rose, ca. 3.5 cm ..... 395. *R. comisteum*
- 45b. Erect shrubs, bud-scales deciduous (except in *R. balangense* and *R. dachengense*); leaves larger; margin flattened or inconspicuously revolute.
- 50a. Ovary hairy or glandular.
- 51a. Inflorescence 4–7-flowered; pedicel 0.5–1 cm, densely velutinous; leaf bud-scales persistent ..... 391. *R. dachengense*
- 51b. Inflorescence 6–15-flowered; pedicel 1–2 cm, floccose; leaf bud-scales deciduous.
- 52a. Abaxial leaf surface with long-rayed stellate hairs; calyx glabrous except for sparsely ciliate margin ..... 386. *R. nakotiltum*
- 52b. Abaxial leaf surface with branched hairs; calyx floccose or sparsely ciliate with glandular-ciliate margin.
- 53a. Inflorescence 6–11-flowered, rachis ca. 5 mm; corolla 2–3 cm ..... 387. *R. rufum*
- 53b. Inflorescence 10–15-flowered, rachis 10–18 mm; corolla 3.5–4 cm ..... 388. *R. alutaceum*
- 50b. Ovary glabrous.
- 54a. Shoots and petioles glabrous.
- 55a. Leaf blade obovate, 6–10 × 2.5–5 cm, upper-layer of indumentum loose, whitish to pale yellow; corolla white; bud-scales persistent ..... 383. *R. balangense*
- 55b. Leaf blade oblong-ovate, 7.5–15 × 4–6.5 cm, upper-layer of indumentum dense, rust-red to cinnamon; corolla 2.5–3 cm, white to pink; bud-scales deciduous ..... 384. *R. sphaeroblastum*
- 54b. Shoots and petioles hairy.
- 56a. Leaf blade oblong-ovate; corolla 3–3.5 cm, creamy white or yellow to pale pink ..... 385. *R. taliense*
- 56b. Leaf blade oblong-elliptic; corolla white to pink ..... 367. *R. principis*

**340. *Rhododendron pubicostatum*** T.L. Ming, Acta Bot. Yunnan. 3: 119. 1981.

毛脉杜鹃 mao mai du juan

Shrubs ca. 3 m tall; young shoots and petioles densely tawny-tomentose. Petiole 15–20 mm; leaf blade leathery, oblong to ovate-oblong, 8.5–12 × 3.3–4.5 cm; base rounded; apex acuminate, apiculate; abaxial surface ± deciduous yellow-brown woolly-tomentose only along midrib; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, ca. 6-flowered; rachis ca. 5 mm, tomentose. Pedicel 1.5–2 cm,

densely glandular-hairy and pubescent; calyx 5–7 mm, oblong, with shortly glandular hairs outside and on margin; corolla funnel-campanulate, white flushed pink, with crimson flecks, 3.5–4 cm, pubescent at base inside; lobes 5, subrounded; stamens 10, unequal, filaments pubescent at base; ovary ca. 5 mm, densely yellow-brown tomentose and short-glandular-hairy; style shorter than corolla, tomentose at base, also with a few glands. Capsule oblong-cylindric, slightly curved, 13–23 × 6–7 mm, surrounded by persistent calyx. Fl. May, fr. Nov.

• *Rhododendron* thickets; 2200–3700 m. NE Yunnan.

**341. *Rhododendron montiganum*** T. L. Ming, Acta Bot. Yunnan. 6: 164. 1984.

山地杜鹃 shan di du juan

Shrubs or small trees, 3–5 m tall; young shoots and petioles glabrous. Petiole 15–20 mm; leaf blade leathery, elliptic, 7–9 × 3–5 cm; base rounded or truncate; margin ± revolute; apex acute; abaxial surface sparsely powdery-pubescent; adaxial surface shiny, glabrous. Inflorescence racemose-umbellate, ca. 10-flowered; rachis ca. 12 mm. Pedicel 2–2.5 cm; calyx splitting to near base; lobes 5, ca. 5 mm, elliptic, ciliate-glandular; corolla broadly campanulate, white, ca. 4 cm, lobes 5, ca. 2 × 2.5 cm; stamens 10, unequal, filaments pubescent at base; ovary conical, sparsely glandular; style ca. 2.3 cm, shorter than corolla, glabrous. Fl. Jun.

- *Rhododendron* thickets; 4000–4100 m. NE Yunnan.

**342. *Rhododendron punctifolium*** L. C. Hu, Acta Phytotax. Sin. 22: 316. 1984.

斑叶杜鹃 ban ye du juan

Dwarf shrubs, ca. 0.7 m tall; young shoots 3–4 mm in diam., sparsely shortly glandular-hairy and with vestiges of juvenile hairs. Petiole 10–12 mm, sparsely glandular-hairy; leaf blade leathery, oblong to ovate-oblong, 4.5–6.5 × 2–3 cm; base subrounded or nearly truncate; margin slightly revolute; ± undulate; apex acute or short-acuminate, cuspidate; abaxial surface sparsely and minutely white-pubescent, and purple-punctulate; adaxial surface slightly rugulose, glabrous; midrib prominent abaxially; lateral veins 12–13-paired, obscure. Inflorescence racemose-umbellate, 4–6-flowered; rachis ca. 10 mm. Pedicel 2–2.5 cm, sparsely shortly glandular-hairy and pubescent; calyx lobes 5, 4–6 mm, unequal, oblong or subrounded, mostly glabrous, margin glandular-ciliate; corolla campanulate, red with crimson blotch at base inside, 3–3.5 cm, lobes 5, emarginate; stamens 10, unequal, filaments pubescent at base; ovary conical, ca. 5 mm, densely short-glandular-hairy; style ca. 2.7 cm, glabrous, eglandular; stigma capitate. Fl. May.

- Mixed forests on mountain slopes. W Yunnan.

This species was included within *Rhododendron balfourianum* in Fl. Yunnan. (4: 418. 1986), but differs from that species in having the leaf blade abaxially conspicuously punctate, in the red, smaller flowers, and in the glabrous style.

**343. *Rhododendron codonanthum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 249. 1922.

腺蕊杜鹃 xian rui du juan

Dwarf shrubs, 0.5–1.2 m tall; branchlets slender, sparsely easily deciduous rufous tomentose and glandular-hairy; bud scales ± persistent. Petiole 8–10 mm, floccose and glandular; leaf blade thickly leathery, oblanceolate to narrowly oblong, 3–6 × 1–2 cm; base obtuse or cuneate; margin revolute; apex acute; abaxial surface sparsely rufous-tomentose, indumentum ± detersile, midrib sparsely glandular-hairy; adaxial surface glabrous; midrib prominent abaxially; lateral veins 10–12-paired. Inflorescence umbellate, ca. 6-flowered; rachis short. Pedicel 2–2.5 cm, sparsely glandular-hairy; calyx pale yellow, lobes 5, 2–4 mm, oblong, fringed with glands; corolla campanulate, bright

yellow, with crimson spots, ca. 3 cm, lobes 5, emarginate; stamens 10, unequal, filaments sparsely puberulent below middle; ovary ca. 4 mm, densely red shortly glandular-hairy; style ca. 2.1 cm, glandular to apex; stigma discoid. Fl. Jun.

- Thickets, rocky hillsides; 3600–4300 m. NW Yunnan.

**344. *Rhododendron ×detonsum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 48. 1919, pro sp.

落毛杜鹃 luo mao du juan

Shrubs, 2.5–4 m tall; young shoots 4–5 mm in diam., sparsely red-glandular and floccose. Petiole 20–25 mm, sparsely floccose and shortly glandular-hairy; leaf blade leathery, oblong to oblong-elliptic, 7–10 × 2–4 cm; base obtuse or rounded; apex acute and apiculate; abaxial surface indumentum brownish to cinnamon, thin, loose, somewhat caducous; adaxial surface glabrous; net veins evident abaxially. Inflorescence racemose-umbellate, 6–10-flowered; rachis and pedicels sparsely floccose and glandular. Pedicel 2.5–3 cm; calyx lobes 5, 3–5 mm, unequal, ovate to oblong-ovate, obtuse, sparsely shortly glandular-hairy outside, margin glandular-ciliate; corolla funnel-campanulate, pink, crimson spotted on upper part of corolla-tube, 4–5 cm, lobes 5(–7), emarginate; stamens 10–14, unequal, filaments densely puberulent below middle; ovary 5–6 mm, densely shortly glandular-hairy; style ca. 2.5 cm, slightly shorter than corolla, shortly glandular-hairy in lower 3/4 stigma discoid. Fl. May.

- Coniferous forests, *Rhododendron* thickets, mountain slopes; 3000–3400 m. NW Yunnan.

This entity is a natural hybrid of *Rhododendron adenogynum* (see Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 341. 1982).

**345. *Rhododendron balfourianum*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 214. 1912.

粉钟杜鹃 fen zhong du juan

Shrubs 1–4 m tall; young shoots glabrous, sparsely shortly glandular-hairy. Petiole 15–20 mm, glabrescent; leaf blade leathery, ovate-lanceolate to oblong-elliptic, 5–12 × 2.5–4.5 cm; base rounded or slightly cordate; apex acute or acuminate; abaxial surface indumentum 1-layered, thin or thick ± agglutinated or spongy, with or without surface pellicle; adaxial surface glabrous; midrib prominent abaxially, lateral veins concealed. Inflorescence racemose-umbellate, 5–7-flowered; rachis ca. 5 mm. Pedicel 1.5–2.5 cm, tomentose and densely short-glandular-hairy; calyx lobes 5, 6–10 mm, oblong-elliptic, sparsely shortly glandular-hairy outside, and margin glandular-ciliate; corolla funnel-campanulate, pale pink to pink, with crimson markings, 3.5–4 cm, lobes 5, rounded, deeply grooved; stamens 10, unequal, filaments pubescent at base; ovary 5–6 mm, densely short-glandular-hairy; style glabrous or shortly glandular-hairy, stigma discoid. Capsule oblong-cylindric, straight, 15–20 × 6–8 mm, calyx and style persistent. Fl. May–Jul, fr. Sep–Oct.

- *Abies* forests, coniferous forest margins, thickets, rocky or gravelly slopes; 2500–4600 m. SW Sichuan, W Yunnan.

- 1a. Leaf blade 5–8 cm, indumentum thin, ± agglutinated, without pellicle, style glandular ..... 345a. var. *balfourianum*

- 1b. Leaf blade 7–12 cm, indumentum thick, spongy, with pellicle, style glabrous or with a few glands near the base ..... 345b. var. *aganniphoides*

**345a. *Rhododendron balfourianum* var. *balfourianum***

粉钟杜鹃(原变种) fen zhong du juan (yuan bian zhong)

Leaf blade 5–8 × 2.5–3.5 cm; abaxial surface densely pale brown to pale cinnamon ± agglutinate tomentose, without surface pellicle. Style with short glandular hairs on lower third. Fl. Jun–Jul, fr. Sep.

- *Abies* forests, *Rhododendron* thickets, rocky slopes; 3300–4600 m. SW Sichuan, W Yunnan.

**345b. *Rhododendron balfourianum* var. *aganniphoides* Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 306. 1927.**

白毛粉钟杜鹃 bai mao fen zhong du juan

Leaf blade 7–12 × 2.5–4.5 cm; abaxial surface densely white to yellowish white spongy tomentose, with surface pellicle. Style glabrous. Fl. May–Jun, fr. Sep–Oct.

- Coniferous forest margins, thickets, gravelly slopes; 2500–4100 m. SW Sichuan, NW Yunnan.

**346. *Rhododendron pomense* Cowan & Davidian, Notes Roy. Bot. Gard. Edinburgh 21: 146. 1953.**

波密杜鹃 bo mi du juan

Shrubs, 0.6–1.2 m tall; young shoots densely floccose and glandular. Petiole 15–20 mm, sparsely floccose; leaf blade leathery, oblong-elliptic to oblong-ovate, 8.5–10 × 3.6–4.7 cm; base rounded; apex bluntly rounded, apiculate; abaxial surface indumentum thin, 1-layered, yellowish, hairs branched. Inflorescence racemose-umbellate, 3–10-flowered; rachis ca. 5 mm. Pedicel 1.3–2.4 cm, densely tomentose; calyx pink, lobes 5, 5–12 mm, unequal, margin ciliate; corolla campanulate, pink, with purple spots inside, ca. 3.8 × 4.4 cm; lobes 5, rounded, deeply grooved; stamens 10, unequal, filaments puberulent in lower half; ovary ca. 5 mm, densely tomentose; style ca. 2.9 cm, glabrous. Fl. Jun.

- Coniferous forests, thickets, mountain slopes; 3300–3400 m. SE Xizang.

**347. *Rhododendron trichogynum* L. C. Hu, Acta Phytotax. Sin. 30: 545. 1992.**

理县杜鹃 li xian du juan

Small trees, ca. 7 m tall; branchlets and petioles glabrous. Petiole 10–15 mm; leaf blade leathery, ovate-elliptic to oblong, 7.5–9 × 3.2–4.5 cm; base broadly cuneate or subcordate; apex acute and apiculate; abaxial surface indumentum thin, tawny, ± agglutinated; adaxial surface green, slightly rugulose, glabrous. Inflorescence racemose-umbellate, 8–15-flowered; rachis ca. 10 mm. Pedicel 1–2 cm, glabrous or sparsely floccose; calyx deeply lobed; lobes 5, large, oblong, puberulent at base outside, margin glandular-ciliate, 8–10 × 3–4 mm; corolla campanulate, white, crimson dotted on upper lobes, 3–3.5 × ca. 4 cm, puberulent at base inside, lobes 5; stamens (9 or) 10, filaments puber-

ulent below middle; ovary ca. 5 mm, densely pale brown-pubescent; style ca. 2.7 cm, glabrous, stigma nearly discoid. Fl. Jun.

- Forests, mountain slopes; ca. 3100 m. NW Sichuan.

**348. *Rhododendron adenogynum* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 216. 1912.**

腺房杜鹃 xian fang du juan

*Rhododendron adenophorum* I. B. Balfour & W. W. Smith.

Shrubs, 1–2.5 m tall; branchlets stout, with gray woolly tomentum when young, sometimes mixed with glands, occasionally glabrous. Petiole 10–15 mm, tomentose and shortly glandular-hairy, sometimes almost glabrous; leaf blade thickly leathery, lanceolate to oblong-lanceolate, 6–12 × 2–4 cm; base rounded or ± cordate; apex acute or acuminate; abaxial surface indumentum tawny to cinnamon, dense, thickly spongy, hairs sometimes mixed with glands; adaxial surface dark green, glabrous. Inflorescence racemose-umbellate, 8–12-flowered; rachis ca. 10 mm, tomentose. Pedicel 1.5–3 cm, densely tomentose and short-glandular-hairy; calyx yellow-green, deeply lobed; lobes 5, 10–15 mm, oblong, with short glandular hairs throughout on outer surface and margin; corolla campanulate, white flushed pink to pink, with crimson spots on corolla-tube and on upper lobes, 3.5–4.5 cm, inner surface puberulent, lobes 5; stamens 10, unequal, filaments densely puberulent and glandular-hairy in lower half; ovary ca. 5 mm, densely shortly glandular-hairy; style ca. 3.2 cm, shortly glandular-hairy on lower part; stigma discoid. Capsule oblong-cylindric, straight, 15–20 × 6–7 mm, calyx persistent. Fl. May–Jul, fr. Aug–Nov.

- *Abies* forests, *Rhododendron* thickets, mountain slopes; 3200–4200 m. SW Sichuan, SE Xizang, NW Yunnan.

**349. *Rhododendron dunicola* Tagg & Forrest in J. B. Stevenson, Sp. Rhodod. 643. 1930.**

灌丛杜鹃 guan cong du juan

Shrubs, 1–2.5 m tall; young shoots and petioles sparsely shortly glandular-hairy. Petiole 10–15 mm; leaf blade leathery, oblong-elliptic to obovate, 6.5–7.5 × 3–4 cm; base subrounded; apex obtuse or rounded, apiculate; abaxial surface tawny indumentum densely felted, hairs branched, midrib sparsely red-glandular; adaxial surface glabrous. Inflorescence umbellate, 5–7-flowered; rachis short, ca. 3 mm. Pedicel 1.5–2 cm, densely shortly glandular-hairy; calyx deeply lobed; lobes 5, 7–10 mm, unequal, sparsely shortly glandular-hairy near base on outer surface, margin glandular-ciliate; corolla campanulate, white to pale rose, with crimson flecks below, 3.5–4 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary ca. 6 mm, densely shortly glandular-hairy; style subequal to corolla, glabrous, eglandular. Fl. Jun–Jul.

- *Rhododendron* thickets, rocky slopes; ca. 4200 m. NW Yunnan.

**350. *Rhododendron zhongdianense* L. C. Hu, Acta Phytotax. Sin. 22: 317. 1984.**

中甸杜鹃 zhong dian du juan

Shrubs, 2–3 m tall; young shoots ca. 5 mm in diam.,

sparsely glandular, glabrescent. Petiole 10–15 mm, sparsely pubescent and glandular; leaf blade leathery, oblong to ovate-oblong, 7–10 × 2.5–3.5 cm; base obtuse or rounded; apex subacute, apiculate; abaxial surface indumentum fawn, thick, felted, compact, hairs stellate, midrib sparsely puberulent and red-glandular; adaxial surface glabrous; midrib prominent abaxially. Inflorescence racemose-umbellate, 6–8-flowered; rachis ca. 4 mm, floccose. Pedicel 1.5–1.8 cm, densely shortly glandular-hairy; calyx pubescent, lobes 5, 5–7 mm, unequal, obovate-oblong, densely shortly glandular-hairy on outer surface and margin; corolla funnel-campanulate, pale red, purple-spotted on upper lobes, 2.5–3.5 cm, both surfaces glabrous, lobes 5; stamens 10(–12), filaments white-puberulent at base; ovary subcylindrical, 4–5 mm, sparsely pubescent and shortly glandular-hairy; style short-glandular-hairy at base; stigma discoid. Fl. Jun.

- Forests; ca. 3700 m. NW Yunnan.

This species was included within *Rhododendron balfourianum* in Fl. Yunnan. (4: 418. 1986), but differs from that species in having the leaf blade abaxially with a thick, felted, non-agglutinated, fawn indumentum, in the smaller flowers, and in the sparsely pubescent and glandular ovary.

**351. *Rhododendron bureavii*** Franchet, Bull. Soc. Bot. France 34: 281. 1887.

锈红杜鹃 xi hong du juan

*Rhododendron bureavioides* I. B. Balfour; *R. cruentum* H. Léveillé.

Shrubs, 1–4 m tall; young shoots densely rusty-red to tawny woolly-tomentose, sometimes mixed with red-glands. Petiole 10–20 mm, rust-red woolly-tomentose; leaf blade leathery, elliptic to obovate-oblong, 6–14 × 2.5–5 cm; base obtuse or subrounded; apex acute or acuminate, apiculate; abaxial surface rust-red to tawny, densely woolly, hairs branched; adaxial surface shiny, glabrous. Inflorescence racemose-umbellate, 10–20-flowered; rachis and pedicels densely rust-red woolly-tomentose, hairs branched, and with glandular hairs. Pedicel 1.5–2 cm; calyx lobes 5, 5–10 mm, oblong, pubescent and glandular on lower half outside, margin glandular-ciliate; corolla tubular-campanulate or campanulate, white flushed pink to pink, with purple dots inside, 3–4.5 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary ovoid, 4–5 mm, densely glandular-hairy and long-hairy, sometimes glandular only; style ca. 3 cm, similarly glandular-hairy and hairy. Capsule oblong-cylindrical, 15–20 × ca. 10 mm, with vestiges of glands and hairs. Fl. May–Jun, fr. Aug–Oct.

- Coniferous forests, *Rhododendron* thickets, mountain slopes; 2800–4500 m. W Sichuan, N Yunnan.

Field observations suggest that *Rhododendron bureavioides* should be treated as a distinct species. It differs in having a bistrate indumentum.

**352. *Rhododendron elegantulum*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 311. 1927.

金江杜鹃 jin jiang du juan

Small, usually compact shrubs, 1–1.5 m tall; young shoots densely tomentose. Petiole 10–15 mm, pale brown-tomentose; leaf blade leathery, oblong-elliptic to oblong-lanceolate, 5–9 × 1.5–3 cm; base obtuse or subrounded; apex acute; abaxial surface cinnamon to rust-red, densely woolly; adaxial surface light green, glabrous. Inflorescence umbellate, 10–20-flowered; rachis ca. 10 mm, puberulent. Pedicel ca. 2 cm, densely red-brown-floccose and short-glandular-hairy; calyx lobes 5, 7–10 mm, unequal, oblong, acute, with short-stalked glands outside, margin glandular-ciliate; corolla funnel-campanulate, pale purple, with crimson markings, 3–3.5 cm, sparsely pubescent at base inside; lobes 5; stamens 10, unequal, filaments densely puberulent at base; ovary ca. 5 × 2.2 mm, densely short-glandular-hairy; style sparsely short-glandular-hairy near base; stigma discoid. Capsule cylindrical, ca. 15 × 5 mm, enclosed in persistent calyx. Fl. May–Jun, fr. Jul.

- *Abies* forests, mountain slopes; 3600–3900 m. SW Sichuan, NW Yunnan.

**353. *Rhododendron pugeense*** L. C. Hu, Acta Phytotax. Sin. 30: 543. 1992.

普格杜鹃 pu ge du juan

Shrubs, ca. 2 m tall; young shoots, petioles, and pedicels with dense yellow-ferruginous-dendroid branched long hairs. Petiole 15–20 mm; leaf blade thickly leathery, obovate-elliptic to obovate-oblong, 8.5–13 × 3.5–5.5 cm; base broadly cuneate or subrounded; apex acute, mucronate; abaxial surface rufous, indumentum thickly woolly, hairs multi-branched; adaxial surface glabrous except in grooved midrib. Inflorescence umbellate, ca. 12-flowered; rachis ca. 5 mm. Pedicel stout, ca. 1.2 cm, with dense yellow-ferruginous long dendroid branched hairs; calyx lobes 5, 7–8 mm, ovate-lanceolate, densely villous and mixed with dendroid branched hairs outside, margin ciliate; corolla campanulate, pink, with few purple spots inside, 3–3.5 × ca. 3.5 cm; lobes 5, 1.3–1.5 cm; stamens 10, unequal, filaments pubescent near base; ovary ovoid, ca. 5 × 3.5 mm, densely villous; style ca. 2.7 cm, densely villous, also with a few dendroid branched hairs in lower half, stigma ± discoid. Fl. May.

- *Rhododendron* thickets, mountain slopes; ca. 3500 m. SW Sichuan.

This species differs from the closely allied *Rhododendron bureavii* in the dendroid-villous branchlets, petioles, and pedicels, and in the densely villous and egladular ovaries.

**354. *Rhododendron faberi*** Hemsley, J. Linn. Soc., Bot. 26: 22. 1889 [*“faberii”*].

金顶杜鹃 jin ding du juan

Shrubs, 1–2.5 m tall; young shoots densely gray-brown pubescent. Petiole 15–25 mm, densely gray-pubescent; leaf blade leathery sometimes thickly so, ovate-oblong to elliptic, 7–17 × 2.5–7 cm; base broadly cuneate or subrounded; apex acute or with small and slightly curved sharp point; abaxial surface with indumentum 2-layered, upper layer thick, rufous and ± deciduous when mature, or thin and brownish, lower layer very thin, gray-white and persistent; adaxial surface light green, slightly rugulose, glabrous. Inflorescence racemose-umbel-

late, 6–20-flowered; rachis ca. 5 mm. Pedicel 1.5–2 cm, densely grayish yellow-tomentose and glandular-hairy; calyx leaflike, 5-cleft, 8–12 mm, lobes glandular-hairy and pubescent near base outside, margin glandular-ciliate; corolla 4–5 cm; stamens 10, shorter than corolla; filaments pubescent at base; ovary ca. 7 mm, densely red-brown glandular-setose or with hairs and glandular hairs; style ca. 2.8 cm, glabrous, rarely with a few glandular hairs at base. Capsule cylindric, 10–25 × 5–8 mm, calyx and style persistent. Fl. May–Jun, fr. Aug–Oct.

• *Abies* forests, coniferous forest margins, thickets, rocky mountain slopes; 2800–4000 m. W Sichuan.

- 1a. Leaf blade abaxially with upper layer of indumentum thick, red-brown to tawny; inflorescence 6–10-flowered; ovary densely setose-glandular; capsule 10–15 mm ..... 354a. subsp. *faberi*
- 1b. Leaf blade abaxially with upper layer of indumentum thin, gray-brown to fawn; inflorescence 12–20-flowered; ovary hairy and glandular; capsule to 25 mm ..... 354b. subsp. *prattii*

**354a. *Rhododendron faberi* subsp. *faberi***

金顶杜鹃(原亚种) jin ding du juan (yuan ya zhong)

*Rhododendron faberioides* I. B. Balfour; *R. wuense* I. B. Balfour.

Leaf blade ovate-oblong, 7–12 × 2.5–4.5 cm, abaxially with upper layer of indumentum thick, red-brown to tawny. Inflorescence 6–10-flowered. Corolla ca. 4 cm; ovary densely setose-glandular. Capsule 10–15 mm. Fl. May–Jun, fr. Sep–Oct.

• *Abies* forests, thickets, rocky mountain slopes; 2800–3500 m. W Sichuan.

**354b. *Rhododendron faberi* subsp. *prattii* (Franchet) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 120. 1978.**

大叶金顶杜鹃 da ye jin ding du juan

*Rhododendron prattii* Franchet, J. Bot. (Morot) 9: 389. 1895; *R. leei* W. P. Fang.

Leaf blade elliptic, 7–17 × 4–7 cm, abaxially with upper layer of indumentum thin, gray-brown to fawn. Inflorescence 12–20-flowered. Corolla 4–5 cm; ovary hairy and glandular. Capsule to 25 mm. Fl. May–Jun, fr. Aug–Oct.

• Coniferous forest margins, *Rhododendron* thickets; 2800–4000 m. W Sichuan.

Field observations suggest that subsp. *prattii* should be treated as a distinct species. The differences mentioned above are now considered sufficient to merit the recognition of two distinct species.

**355. *Rhododendron* ×*sinosimulans* D. F. Chamberlain, *nom. nov.***

裂毛杜鹃 lie mao du juan

Replaced synonym: *Rhododendron mimetes* Tagg & Forrest var. *simulans* Tagg & Forrest, Notes Roy. Bot. Gard. Edin-

burgh 15: 316. 1927; *R. simulans* (Tagg & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 343. 1982, not *R. simulans* Sleumer, Reinwardtia 5: 168. 1960.

Shrubs, ca. 2 m tall; young shoots sparsely floccose or glabrescent. Petiole 15–20 mm, glabrous; leaf blade leathery, ovate-elliptic to ovate-oblong, 6.5–9.5 × 3–5 cm; base rounded or subcordate; apex acute, apiculate; abaxial surface with indumentum 2-layered, dense, upper layer thick, fawn, woolly-tomentose, ± splitting when mature, hairs branched, lower layer compacted; adaxial surface glabrous, sometimes with vestiges of hairs in grooved midrib. Inflorescence racemose-umbellate, 7–10-flowered; rachis 10–12 mm, glabrous. Pedicel 2–2.5 cm, sparsely tomentose; calyx lobes 5, 4–8 mm, narrowly oblong, margin ciliate; corolla funnellform-campanulate, white-pubescent, with crimson spots inside, 4–5 cm, lobes 5; stamens 10, filaments sparsely puberulent at base; ovary 7–8 × ca. 3 mm, densely brown branched-hairy, sometimes also glandular-hairy; style ca. 2.6 cm, glabrous; stigma capitate. Fl. Jun.

• *Rhododendron* thickets; 3600–4000 m. SW Sichuan.

This entity is evidently a hybrid of *Rhododendron sphaeroblastum*.

**356. *Rhododendron mimetes* Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 315. 1927.**

优异杜鹃 you yi du juan

Shrubs, 1–2 m tall; young shoots sparsely floccose. Petiole 10–15 mm, initially floccose, later glabrescent; leaf blade leathery, elliptic to oblong-ovate, 6–10 × 2.5–4 cm; base subrounded; apex shortly acuminate, apiculate; abaxial surface with indumentum 2-layered, upper layer loose, fulvous woolly-tomentose, floccose, ± detersile when mature, hairs multi-branched, lower layer whitish, compacted and persistent; adaxial surface glabrous. Inflorescence lax, racemose-umbellate, 6–10-flowered; rachis ca. 10 mm. Pedicel 1.8–2 cm, densely tomentose and shortly glandular-hairy; calyx lobes 5, 3–6 mm, unequal, ovate, sparsely tomentose and shortly glandular-hairy outside, margin glandular-ciliate; corolla broadly funnel-campanulate, white, faintly flushed pink, with few crimson spots inside, 4–4.5 × ca. 5 cm; lobes 5; stamens 10, unequal, filaments pubescent at base; ovary ca. 6 mm, densely brown-tomentose and short-glandular-hairy; style ca. 2.8 cm, glabrous, stigma slightly lobulate. Fl. Jun.

• Thickets, gullies, rocky mountain slopes; 3300–3600 m. SW Sichuan.

**357. *Rhododendron* ×*paradoxum* I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 15: 114. 1926, pro sp.**

奇异杜鹃 qi yi du juan

Small shrubs, 1–2 m tall; young shoots densely whitish tomentose, later glabrescent. Petiole 15–20 mm, whitish tomentose; leaf blade leathery, oblong-elliptic, 5–11.5 × 2.5–5 cm; base broadly obtuse or rounded; apex obtuse or subrounded, ± beaked; abaxial surface indumentum loose, pale brown, hairs branched; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, 8–10-flowered; rachis ca. 10 mm.

Pedicle 1.5–2 cm, densely tawny tomentose; calyx lobes 5, 1–2 mm, unequal, tomentose like pedicle; corolla obliquely campanulate, white, with dark crimson basal blotch and red spots spreading on upper lobes, ca. 4 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary cylindrical, ca. 5 mm, densely brown appressed fasciculate-tomentose; style glabrous; stigma discoid.

- W Sichuan.

This entity is not actually known in the wild. The type was raised from seeds collected in the wild in W Sichuan (*Wilson 1353*) and labeled *Rhododendron wilsonii*. It differs from that species in the oblong-elliptic leaf blade, which bears loose indumentum abaxially and is not obviously bullate-rugose adaxially, and the large, white corolla ca. 4 cm.

**358. *Rhododendron xinopinum*** I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 15: 109. 1926, pro sp.

短尖杜鹃 duan jian du jian

Dwarf shrubs, erect; young shoots ca. 3.5 mm in diam., whitish tomentose, glabrescent. Petiole 10–15 mm; leaf blade leathery, ovate-oblong, ca. 10 × 3.5 cm; base obtuse or rounded; apex acute; abaxial surface pale green, indumentum pale brown, ± detersile; adaxial surface dark green, shiny, glabrous, sometimes with vestiges of young hairs. Inflorescence racemose-umbellate, ca. 10-flowered; rachis ca. 7 mm. Pedicel ca. 1.5 cm, densely whitish tomentose; calyx lobes 5, ca. 1.5 mm, rounded, pubescent outside; corolla funnel-campanulate, creamy-white, with deep carmine basal blotch and some red spots, ca. 2.5 cm, lobes 5; stamens 10, unequal, filaments densely puberulent at base; ovary conical, ca. 6 mm, densely tomentose; style green, glabrous; stigma discoid.

- W Sichuan.

This entity is not actually known in the wild. The type was raised at Edinburgh from seeds collected in the wild in W Sichuan (*Wilson 1866*) and labeled *Rhododendron wasonii*.

**359. *Rhododendron potaninii*** Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 489. 1891 [*“potanini”*].

甘肃杜鹃 gan su du jian

Small shrubs, erect, branchlets glabrous. Petiole 20–25 mm, densely tomentose, hairs branched; leaf blade leathery, oblong to obovate, 7–9 × 2.5–4 cm; base rounded; apex obtuse, mucronate; abaxial surface pale, only lower half of midrib densely fine branched-hairy; adaxial surface glabrous. Inflorescence racemose or subumbellate, 7–8-flowered. Pedicel ca. 2 cm, densely rufous-pubescent; calyx lobes 5, ca. 1 mm, irregular, ± hairy; corolla broadly campanulate, white, unspotted, ca. 3 cm, glabrous; lobes 5, ca. 1 cm, rounded; stamens 10, included in the tube, reaching only to base of lobes, filaments sparsely puberulent in lower half; ovary conical, ca. 4 mm, densely rufous-tomentose; style glabrous.

- E Gansu.

**360. *Rhododendron dignabile*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 241. 1937.

疏毛杜鹃 shu mao du jian

Small trees or shrubs, 3–7 m tall; young shoots sparsely floccose, glabrescent. Petiole 12–15 mm, floccose; leaf blade leathery, oblong-elliptic to oblong-obovate, 8–15 × 3–6 cm; base broadly cuneate, rounded or subcordate; apex obtuse or acute; abaxial surface brown with glands; adaxial surface green, glabrous. Inflorescence umbellate, 12–15-flowered; rachis ca. 10 mm. Pedicel 1–2 cm, sparsely floccose; calyx pale green; lobes 5, 1–1.5 mm, broadly triangular or subrounded, floccose or glabrescent; corolla campanulate, rose or pale yellow, with fine spots and crimson basal blotch inside, 3–4 cm, lobes 5, emarginate; stamens 10, unequal, filaments densely puberulent in lower half; ovary ca. 7 × 3 mm, sparsely floccose, also with a few yellow glands; style glabrous, stigma small.

- *Abies* forests, *Rhododendron* thickets; 3100–3500 m. S Xizang.

**361. *Rhododendron purdomii*** Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 538. 1913.

太白杜鹃 tai bai du jian

Shrubs or small trees, 2–6 m tall; young shoots puberulent; bud scales ± persistent. Petiole 10–15 mm, puberulent, glabrescent; leaf blade leathery, oblong-lanceolate to oblong-elliptic, 6–9 × 2.5–3.5 cm; base cuneate; margin revolute; apex obtuse, mucronate; both surfaces glabrous; abaxial surface pale green; reticulate veins distinct. Inflorescence racemose-umbellate, 10–15-flowered; rachis ca. 10 mm, pale brown-tomentose. Pedicel 1–1.5 cm, densely whitish gray-pubescent; calyx lobes 5, 1–1.5 mm, broadly triangular, sparsely pubescent; corolla campanulate, pale pink or whitish, with purple spots on corolla tube on upper lobes, 2.5–3 cm, lobes 5; stamens 10, unequal, filaments densely puberulent in lower half; ovary conical, 4–5 mm, sparsely white-pubescent; style ca. 2.2 cm, glabrous, stigma capitate. Capsule cylindrical, slightly curved, 10–30 × 4–8 mm. Fl. May–Jun, fr. Jul–Sep.

- Forests, mountain slopes; 1800–3500 m. S Gansu, W Henan, S Shaanxi.

This species almost certainly does not belong in *Rhododendron* subsect. *Taliensia*; it probably has closer affinities with species in *R.* subsect. *Selensia*. In addition, *R. purdomii* var. *villosum* L. H. Wu (J. Wuhan Bot. Res. 17(1): 21. 1999), described from W Henan (Songxian), needs to be considered. It was described as differing from var. *purdomii* in having the leaf blade larger, 4–11 × 2–5.5 cm, adaxially sparsely yellowish villous, the margin densely ciliate, with both villi and ciliae readily deciduous; the petiole longer, to 3 cm; and the inflorescence rachis longer, to 1.8 cm.

**362. *Rhododendron detersile*** Franchet, J. Bot. (Morot) 12: 260. 1898.

干净杜鹃 gan jing du jian

Small shrubs, 0.4–1 m tall; young shoots densely rufous-tomentose; bud scales persistent. Petiole short, 3–4 mm, densely rufous-tomentose; leaf blade thickly leathery, oblong to oblanceolate, 3–6 × 1–2 cm; base broadly cuneate; margin revolute; apex blunt, rounded, mucronate; abaxial surface indumentum 1-layered, red-brown woolly, detersile when mature, hairs branched; adaxial surface appearing bullate, deep green, slightly shiny, glabrous; midrib, lateral and net veins impressed adaxially. Inflorescence compact, umbellate, 4–8-flowered; ra-

chis very short. Pedicel 1–1.5 cm, densely red-brown glandular-hairy and pubescent; calyx membranous, lobes 5, 4–5 mm, ovate-lanceolate, acute, hairy and shortly glandular-hairy outside, margin ciliate-glandular; corolla campanulate, pink, with crimson spots on upper lobes inside, 2.5–3 cm, lobes 5, pubescent at base; stamens 10, unequal, filaments pubescent at base; ovary conical, ca. 5 mm, densely red-brown villous and glandular-hairy; style ca. 2 cm, shortly glandular-hairy at base; stigma discoid. Capsule cylindrical, ca. 12 × 5 mm, villous, and with vestiges of glandular hairs. Fl. May–Jun, fr. Aug–Oct.

- Forests, mountain slopes; 2500–2900 m. SW Shaanxi (Taibai Shan), NE Sichuan.

**363. *Rhododendron wiltonii*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 107. 1910.

皱皮杜鹃 *zhou pi du juan*

Shrubs, 1.5–3 m tall; young shoots densely yellowish gray-tomentose. Leaf blade thickly leathery, ovate-oblong to oblanceolate, 5–11 × 2–4 cm; base cuneate; margin slightly revolute; apex acute, apiculate; abaxial surface indumentum rust-red to dark brown, dense, 1-layered, hairs fasciculate to stellate; adaxial surface coarsely bullate-rugose, glabrescent; midrib, lateral and net veins deeply impressed adaxially. Inflorescence racemose-umbellate, 8–10-flowered; rachis 5–8 mm, yellowish pubescent. Pedicel 1.5–2 cm, densely floccose-tomentose with a few glandular hairs; calyx lobes 5, ca. 2 mm, triangular, densely floccose; corolla funnel-campanulate, white to pink, with red spots inside, 3–4 cm, puberulent at base inside, lobes 5; stamens 10, unequal, filaments puberulent in lower half; ovary ca. 5 mm, densely rust-red woolly-tomentose; style ca. 2.3 cm, glabrous, stigma capitate, green. Capsule cylindrical, slightly curved, 15–20 × 4–5 mm, tomentose. Fl. May–Jun, fr. Aug–Oct.

- Forests, high mountains; 2200–3300 m. W Sichuan.

*Rhododendron dayiense* M. Y. He (Acta Phytotax. Sin. 35: 63. 1997), described from C Sichuan (Dayi), needs to be considered. It is said to be closely allied to *R. wiltonii*, but differs in the longer pedicel, 2.8–3.2 cm, in the larger calyx, 4–5 mm, in the red corolla, and in the densely reddish brown hispid ovary, with red-brown hairs at the base of the style.

**364. *Rhododendron coeloneurum*** Diels, Bot. Jahrb. Syst. 29: 513. 1900.

粗脉杜鹃 *cu mai du juan*

Small trees, 3–8 m tall; young shoots ca. 5 mm in diam., densely red-brown-tomentose. Petiole 10–15 mm, brown-tomentose; leaf blade leathery, oblanceolate to oblong-elliptic, 7–12 × 2.5–4 cm; base cuneate; margin slightly revolute; apex bluntly or sharply acute, apiculate; abaxial surface with indumentum 2-layered, upper layer thick, red-brown, sometimes deciduous, hairs branched, lower layer gray-white, appressed; adaxial surface appearing bullate-rugose, glabrescent; veins conspicuously and deeply impressed. Inflorescence umbellate, 6–9-flowered; rachis ca. 3 mm, densely brown-tomentose. Pedicel 1–1.5 cm, similarly hairy; calyx lobes 5, ca. 2 mm, tomentose; corolla funnel-campanulate, pink to purplish, with purple spots on corolla-tube and upper lobes, 4–5 cm, puberulent near base inside, lobes 5; stamens 10, unequal, filaments pubescent at

base; ovary ca. 6 mm, densely tomentose; style ca. 4 cm, glabrous, rarely pubescent at base; stigma capitate. Capsule cylindrical, green, 20–25 × 6–9 mm, hairy. Fl. Apr–Jun, fr. Jul–Oct.

- Mixed forests, mountain slopes; 1200–2300 m. N and SE Guizhou, S Sichuan, NE Yunnan.

It is probable that this species belongs to *Rhododendron* subsect. *Argyrophylla*, not to *R.* subsect. *Taliensia*; it may be closely allied to *R. denudatum*.

**365. *Rhododendron aganniphum*** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 10: 80. 1917.

雪山杜鹃 *xue shan du juan*

Shrubs, 1–4 m tall; young shoots glabrous. Petiole 8–15 mm, glabrous or with a few glands; leaf blade thickly leathery, oblong to elliptic-oblong, sometimes ovate-lanceolate or elliptic, 4.5–12 × 2–6 cm; base rounded to subcordate; margin revolute; apex acute and apiculate; abaxial surface white to yellowish or pale brown, sometimes turning deep red-brown, with indumentum 1-, rarely 2-, layered, dense, compacted to spongy tomentose, sometimes splitting, with or without pellicle, hairs branched; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, 10–20-flowered; rachis ca. 5 mm, glabrous. Pedicel 0.8–1.5 cm, glabrous; calyx lobes 5, 1–1.5 mm, rounded, glabrous, margin ± ciliate; corolla funnel-campanulate or campanulate, white or pale pink, with many purplish red spots inside, 3–3.5 cm, lobes 5, slightly unequal; stamens 10, filaments sparsely puberulent near base; ovary 4–5 mm, glabrous; style ca. 2.3 cm, glabrous. Capsule cylindrical, straight, 15–25 × 5–7 mm. Fl. Jun–Jul, fr. Sep–Oct.

- Coniferous forests, forest margins, thickets, mountains, slopes; 2700–4700 m. S Qinghai, W Sichuan, SE Xizang, NW Yunnan.

This species hybridizes in the wild with both *Rhododendron phaeochrysum* and *R. proteoides*.

- 1a. Abaxial leaf surface with thin 2-layered ± agglutinate indumentum, upper layer pale brown, splitting to reveal white under layer, without a pellicle ..... 365c. var. *schizopeplum*
- 1b. Abaxial leaf surface with thick 1-layered spongy indumentum, with a pellicle.
  - 2a. Abaxial leaf indumentum white to yellowish white, not splitting ..... 365a. var. *aganniphum*
  - 2b. Abaxial leaf indumentum initially yellow, later becoming deep red-brown, splitting ..... 365b. var. *flavorufum*

**365a. *Rhododendron aganniphum* var. *aganniphum***

雪山杜鹃(原变种) *xue shan du juan* (yuan bian zhong)

*Rhododendron aganniphum* var. *glaucopeplum* (I. B. Balfour & Forrest) T. L. Ming; *R. glaucopeplum* I. B. Balfour & Forrest.

Petiole ca. 10 mm, sometimes with a few glands; leaf blade 6–9 × 2–4 cm; abaxial surface indumentum 1-layered, white to yellowish white, persistent, not splitting, with pellicle. Fl. Jun–Jul, fr. Sep.

- Coniferous forests, *Rhododendron* thickets, mountains; 2700–4700 m. S Qinghai, W Sichuan, SE Xizang, NW Yunnan.

**365b. *Rhododendron aganniphum* var. *flavorufum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 119. 1978.

黄毛雪山杜鹃 huang mao xue shan du juan

*Rhododendron flavorufum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 65. 1919.

Petiole 10–15 mm, eglandular; leaf blade 4.5–12 × 2.5–6 cm; abaxial surface indumentum 1-layered, at first yellow, becoming deep red-brown, splitting to irregularly patchy, with pellicle. Fl. Jun–Jul, fr. Oct.

• Coniferous forests, thickets, rocky slopes; 3200–4400 m. SW Sichuan, SE Xizang, NW Yunnan.

**365c. *Rhododendron aganniphum* var. *schizopeplum*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 165. 1984.

裂毛雪山杜鹃 lie mao xue shan du juan

*Rhododendron schizopeplum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 131. 1919; *R. doshongense* Tagg; *R. fissotectum* I. B. Balfour & Forrest.

Leaf blade 6–8 × 3–3.5 cm; abaxial surface indumentum 2-layered, upper layer pale brown, splitting into an irregular netlike pattern to reveal white compact under layer, without pellicle. Fl. Jun.

• Forest margins, thickets, mountain slopes; 3500–4500 m. SE Xizang, NW Yunnan.

**366. *Rhododendron vellereum*** Hutchinson ex Tagg in J. B. Stevenson, Sp. Rhodod. 688. 1930.

白毛杜鹃 bai mao du juan

*Rhododendron principis* Bureau & Franchet var. *vellereum* (Hutchinson ex Tagg) T. L. Ming.

Small trees, 2–5 m tall; shoots ca. 5 mm in diam., thinly floccose, glabrescent. Petiole 15–20 mm, white-floccose; leaf blade thickly leathery, oblong-elliptic to oblong-lanceolate, 6–12 × 2–4.5 cm; base rounded or cordate; apex obtuse or acute; abaxial surface indumentum silvery-white to gray-yellow, somewhat thick, soft and spongy, surface forming glossy pellicle; adaxial surface glabrous. Inflorescence racemose-umbellate, 10–20-flowered; rachis ca. 10 mm. Pedicel red, 1.5–2 cm, sparsely floccose or glabrescent; calyx lobes 5, ca. 1 mm, shallow, slightly floccose; corolla funnel-campanulate, white, sometimes flushed rose, with purple spots inside, 3.5–4 cm, lobes 5; stamens 10, filaments sparsely puberulent in lower half; ovary ca. 6 × 2.5 mm, 5- or 6-locular, glabrous, sometimes with a few floccose hairs at base; style ca. 2.3 cm, glabrous. Capsule narrowly long-cylindric, sulcate, strongly curved, 23–35 × 4–5 mm, glabrous. Fl. May–Jun, fr. Jul–Sep.

• Coniferous forests, *Rhododendron* thickets, mountains; 3000–4500 m. SE Qinghai, S Xizang.

The types of *Rhododendron vellereum* and *R. principis* are very similar, differing only in the indumentum on the ovary. The former taxon may not merit any more than subspecific rank.

**367. *Rhododendron principis*** Bureau & Franchet, J. Bot. (Morot) 5: 93. 1891.

藏南杜鹃 zang nan du juan

Small trees, 1–2.5 m tall; young shoots initially white to fawn tomentose. Petiole 10–15 mm, densely fulvous-tomentose; leaf blade leathery, oblong-elliptic to oblong-obovate, 5–7.5 × 2–3 cm; base obtuse or rounded; apex obtuse or acute and apiculate; abaxial surface indumentum 2-layered, upper layer thick, cinnamon, felted tomentose, pellicle absent, hairs branched, lower layer thin, appressed; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, 8–12-flowered; rachis ca. 5 mm. Pedicel 1–1.5 cm, sparsely puberulent; calyx teeth 5, 10–15 mm, glabrous, margin ciliate; corolla funnel-campanulate, white to pink, with purple spots inside, 2.5–3 cm, lobes 5; stamens 10, unequal, 1.2–2.2 cm, filaments pubescent at base; ovary ca. 6 mm, glabrous or sometimes with a few white hairs; style ca. 1.8 cm, glabrous; stigma capitate. Capsule cylindric, straight, 5-valved, 15–20 × 3–4 mm. Fl. May–Jun, fr. Aug.

• Coniferous forests, *Rhododendron* thickets; 3800–4500 m. S Xizang.

**368. *Rhododendron clementinae*** Forrest ex W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 343. 1915.

麻点杜鹃 ma dian du juan

Shrubs, 2–5 m tall; young shoots glabrous. Petiole slightly narrowly winged, 15–20 mm, glabrous; leaf blade thickly leathery, broadly elliptic to ovate-elliptic, 6–11 × 3–6 cm; base rounded or cordate; margin slightly revolute; apex rounded, mucronate; abaxial surface indumentum 2-layered, thick or thin, upper layer whitish to pale cinnamon or tawny woolly-tomentose, sometimes ± deciduous, surface with or without a pellicle, hairs branched, lower layer grayish, appressed; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, 7–15-flowered; rachis ca. 15 mm, glabrous. Pedicel 2–3 cm, glabrous; calyx lobes 6(or 7), ca. 1.5 mm, glabrous; corolla broadly campanulate or cuplike, white to bright rose, with many crimson dots, 2.5–4.5 cm, lobes 6 or 7; stamens 12(–14), filaments with scurfy hairs on lower half; ovary and style glabrous; stigma discoid. Capsule cylindric, 10–20 × 6–10 mm. Fl. May–Jun, fr. Jul–Oct.

• Forests, forest margins, thickets, mountains; 2600–4100 m. SW Shaanxi, SW Sichuan, NW Yunnan.

- 1a. Leaf blade 9–11 cm, upper layer of abaxial indumentum thick, whitish to pale cinnamon, with a pellicle; corolla 4–4.5 cm, 6(or 7)-lobed; capsule 1.5–2 cm ..... 368a. subsp. *clementinae*
- 1b. Leaf blade 6–7 cm, upper layer of abaxial indumentum thin, tawny, ± deciduous, without a pellicle; corolla 2.5–2.8 cm, 7-lobed; capsule 1–1.5 cm ..... 368b. subsp. *aureodorsale*

**368a. *Rhododendron clementinae* subsp. *clementinae***

麻点杜鹃(原亚种) ma dian du juan (yuan ya zhong)

Leaf blade 9–11 × 4–6 cm. Corolla broadly campanulate, 4–4.5 cm, lobes 6(or 7). Capsule 15–20 × 8–10 mm. Fl. May–Jun, fr. Sep–Oct.



• Forest margins, thickets, mountain slopes; 3200–4100 m. SW Sichuan, NW Yunnan.

**368b. *Rhododendron clementinae* subsp. *aureodorsale* W. P. Fang ex J. Q. Fu in K. T. Fu & J. Q. Fu, Fl. Tsinling. 1(4): 393. 1983.**

金背杜鹃 jin bei du juan

Leaf blade 6–7 × 3–4 cm. Corolla cuplike, 2.5–2.8 cm, lobes 7. Capsule 10–15 × 6–8 mm. Fl. May–Jun, fr. Jul–Aug.

• Forests, mountains; 2600–3100 m. SW Shaanxi (Taibai Shan).

**369. *Rhododendron przewalskii* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 350. 1877.**

陇蜀杜鹃 long shu du juan

Shrubs, 1–3 m tall; young shoots, petioles, pedicels and calyces glabrous. Petiole yellowish, 10–15 mm; petioles, pedicels and calyces glabrous; leaf blade leathery, ovate-elliptic, elliptic, oblong or broadly oblong, 5–11 × 2.5–5 cm; base rounded or subcordate; apex obtuse, apiculate; abaxial surface indumentum compacted, 1-layered, gray-white, tawny to rust-yellow, cinnamon, or deep brown to ferruginous subagglutinated, hairs usually long-rayed stellate, gradually lost, sometimes persistent and branched; adaxial surface glabrous. Inflorescence corymbose-umbellate, 6–15-flowered; rachis ca. 10 mm, glabrous. Pedicel 1–1.5 cm; calyx 5-cleft, 1–1.5 mm; corolla campanulate or funnellform, white to pink, with purple-red spots inside, 2.5–3.5 cm, lobes 5; stamens 10, filaments slightly puberulent in lower half, or glabrous; ovary 4–5 mm, glabrous, sometimes sparsely pubescent; style glabrous, stigma capitate, green. Capsule oblong-cylindric, 15–20 × 4–5 mm. Fl. May–Jul, fr. Sep.

• Forests, mountain slopes, often dominant in thickets; 2700–4300 m. SW Gansu, E and S Qinghai, W Shaanxi, N and W Sichuan.

*Rhododendron przewalskii* hybridizes with *R. phaeochrysum* where the two species meet (as at Kangding in W Yunnan). Because of this, there are a number of forms that cannot be definitely placed in either species.

- 1a. Corolla campanulate; leaf blade base rounded or subcordate, abaxial surface densely gray-white, tawny to rust-yellow, sub-agglutinated, hairs long-rayed stellate, deciduous at maturity ..... 369a. subsp. *przewalskii*
- 1b. Corolla funnellform; leaf blade base cuneate, obtuse or subrounded; abaxial surface with indumentum persistent.
  - 2a. Leaf blade 5–7 × 2.5–3 cm; abaxial surface densely dark red tomentose, hairs branched; ovary sparsely pubescent or glabrescent ..... 369d. subsp. *yushuense*
  - 2b. Leaf blade 7–11 × 4–7 cm; abaxial surface stellate-hairy; ovary glabrous.
    - 3a. Leaf blade with abaxial surface densely deep brown to ferruginous-floccose hirsute ..... 369b. subsp. *chrysophyllum*
    - 3b. Leaf blade with abaxial surface densely gray-white to

cinnamon long-tomentose

..... 369c. subsp. *huzhuense*

**369a. *Rhododendron przewalskii* subsp. *przewalskii***

陇蜀杜鹃(原亚种) long shu du juan (yuan ya zhong)

*Rhododendron dabanshanense* Fang & S. X. Wang; *R. kialense* Franchet.

Leaf blade 6–10 × 3–4 cm; abaxial surface densely gray-white to tawny or rust-yellow tomentose, hairs long-rayed stellate, glabrescent. Inflorescence 10–15-flowered. Ovary glabrous. Fl. Jun–Jul, fr. Sep.

• Forests, mountain slopes, often dominant in thickets; 2600–4300 m. SW Gansu, E and S Qinghai, W Shaanxi, N and W Sichuan.

This variety is used medicinally.

**369b. *Rhododendron przewalskii* subsp. *chrysophyllum* W. P. Fang & S. X. Wang, Acta Biol. Plateau Sin. 1: 227. 1982.**

金背陇蜀杜鹃 jin bei long shu du juan

Leaf blade 7–11 × 5–7 cm; abaxial surface densely deep brown to ferruginous floccose short-hirsute, hairs long-rayed stellate, persistent. Inflorescence ca. 10-flowered. Ovary glabrous. Fl. May–Jun.

• Forests, mountain slopes; 2700–2800 m. E Qinghai.

**369c. *Rhododendron przewalskii* subsp. *huzhuense* W. P. Fang & S. X. Wang, Acta Biol. Plateau Sin. 1: 228. 1982.**

互助陇蜀杜鹃 hu zhu long shu du juan

Leaf blade 8–10 × 4–6 cm; abaxial surface densely gray-white to cinnamon long tomentose, hairs long-rayed stellate, persistent. Inflorescence 8–9-flowered. Ovary glabrous. Fl. May.

• Thickets, mountain slopes; 2700–3100 m. E Qinghai.

**369d. *Rhododendron przewalskii* subsp. *yushuense* W. P. Fang & S. X. Wang, Acta Biol. Plateau Sin. 3: 1. 1984.**

玉树陇蜀杜鹃 yu shu long shu du juan

Leaf blade 5–7 × 2.5–3 cm; abaxial surface densely dark red tomentose, hairs branched, persistent. Inflorescence 6–10-flowered. Ovary sparsely pubescent or glabrescent. Fl. Jun.

• Forests; ca. 4200 m. SW Qinghai.

**370. *Rhododendron phaeochrysum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 131. 1917.**

栎叶杜鹃 li ye du juan

Shrubs, 1–4.5 m tall; shoots white-floccose, glabrescent. Petiole 10–15 mm, floccose, soon glabrescent; leaf blade leathery, oblong-elliptic to ovate-oblong, 5–14 × 2–5.5 cm; base subrounded or subcordate; apex acute to mucronate; abaxial surface tawny to golden-brown or cinnamon, densely tawny to golden-brown or cinnamon agglutinated or felted tomentose, hairs branched; adaxial surface glabrous. Inflorescence racemose-umbellate, 8–15-flowered; rachis 10–15 mm. Pedicel 1–1.5 cm, sparsely floccose or glabrous; calyx lobes 5, ca. 1 mm, acute, glabrous; corolla funnel-campanulate, white to pale pink,

with purplish red spots, 2–4.5 cm, lobes 5, orbicular; stamens 10, unequal, filaments pubescent in lower part; ovary ca. 7 mm, glabrous or sparsely pubescent; style ca. 2.4 cm, glabrous. Capsule oblong-cylindric, straight, slightly curved at apex, 15–30 × 4–6 mm. Fl. May–Jun, fr. Jul–Oct.

• *Abies* forests, thickets, mountain slopes; 3000–4800 m. W Sichuan, SE Xizang, NW Yunnan.

Hybrids probably account for part of the wide variation shown by *Rhododendron phaeochrysum*, which extensively hybridizes with both *R. aganniphum* and *R. przewalskii* (see above) and possibly some other species.

- 1a. Leaf blade 7–14 cm; abaxial surface densely tawny to golden-brown, ± agglutinated, felted-tomentose, not splitting ..... 370a. var. *phaeochrysum*
- 1b. Leaf blade 5–9 cm; abaxial surface densely tawny or cinnamon felted-tomentose, sometimes agglutinated or splitting.
  - 2a. Abaxial leaf surface with indumentum agglutinated, sometimes splitting ..... 370b. var. *agglutinatum*
  - 2b. Abaxial leaf surface with indumentum continuous, not agglutinated ..... 370c. var. *levistratum*

**370a. *Rhododendron phaeochrysum* var. *phaeochrysum***

栎叶杜鹃(原变种) li ye du juan (yuan bian zhong)

*Rhododendron cuprescens* Nitzelius; *R. dryophyllum* I. B. Balfour & Forrest.

Leaf blade 7–14 × 2.5–5.5 cm; abaxial surface densely tawny to golden-brown ± agglutinate felted-tomentose, not splitting. Corolla 3–4.5 cm. Fl. May–Jun, fr. Jul–Oct.

• *Abies* forests, thickets, mountain slopes; 3300–4200 m. W Sichuan, SE Xizang, NW Yunnan.

**370b. *Rhododendron phaeochrysum* var. *agglutinatum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 120. 1978.

凝毛杜鹃 ning mao du juan

*Rhododendron agglutinatum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 88. 1920; *R. dumosulum* I. B. Balfour & Forrest; *R. lophophorum* I. B. Balfour & Forrest; *R. syncollum* I. B. Balfour & Forrest.

Leaf blade 5–8 × 2.5–4 cm; abaxial surface densely compacted tawny agglutinate-tomentose, sometimes splitting into patches. Corolla 2.3–3.5 cm. Capsule straight. Fl. May–Jun, fr. Jul–Sep.

• *Abies* forests, *Rhododendron* thickets, mountain slopes; 3000–4800 m. W Sichuan, SE Xizang, NW Yunnan.

**370c. *Rhododendron phaeochrysum* var. *levistratum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 120. 1978.

毡毛栎叶杜鹃 zhan mao li ye du juan

*Rhododendron levistratum* I. B. Balfour & Forrest, Notes

Roy. Bot. Gard. Edinburgh 11: 88. 1919; *R. aiolopeplum* I. B. Balfour & Forrest; *R. dichropeplum* I. B. Balfour & Forrest; *R. helvolum* I. B. Balfour & Forrest; *R. intortum* I. B. Balfour & Forrest; *R. sigillatum* I. B. Balfour & Forrest; *R. theiophyllum* I. B. Balfour & Forrest; *R. vicinum* I. B. Balfour & Forrest.

Leaf blade 5–9 × 2–3.5 cm; abaxial surface densely tawny to cinnamon felted-tomentose, not agglutinated. Corolla 2–3 cm. Fl. May–Jun, fr. Sep.

• *Abies* forests, *Rhododendron* thickets, mountain slopes; 3000–4500 m. W Sichuan, NW Yunnan.

**371. *Rhododendron torquescens*** D. F. Chamberlain, **nom. nov.**

曲枝杜鹃 qu zhi du juan

Replaced synonym: *Rhododendron torquatium* L. C. Hu, Acta Phytotax. Sin. 30: 549. 1992, not *R. torquatium* I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 13: 303. 1922.

Shrubs, caespitose, ca. 3.5 m tall; shoots twisted, sparsely whitish pilose. Petiole flattened, short and broad, 6–8 × ca. 5 mm, glabrescent; leaf blade leathery, lanceolate to obovate-lanceolate, 11–14 × 4–4.5 cm; base cuneate; margin slightly revolute; apex shortly acuminate, mucronate; abaxial surface indumentum white, 1-layered, agglutinated; adaxial surface glabrous. Inflorescence racemose-umbellate, ca. 10-flowered; rachis short, yellow-floccose. Pedicel 2–2.5 cm, sparsely white-floccose; calyx lobes 5, 1–1.5 mm, triangular, similarly floccose; corolla funnel-campanulate, white to pale pink, with purple spots inside and sparsely puberulent at base, 2.5–3 × ca. 2.5 cm; lobes 5; stamens 10, unequal, shorter than corolla, filaments puberulent at base; ovary narrowly cylindrical, ca. 6 × 3 mm, glabrous; style ca. 2 cm, glabrous, stigma capitate. Fl. Jun.

• *Abies* forests, *Picea* forests, mountain slopes; ca. 3600 m. S Gansu.

The type of *Rhododendron torquatium* L. C. Hu closely resembles *R. watsonii*, sharing with that species a flattened, winged petiole, a white, compacted leaf indumentum, and a glabrous ovary. The latter species, which belongs to *R.* subsect. *Grandia*, differs in having a 6- or 7-lobed corolla. If *R. torquescens* indeed has a 5-lobed corolla, as described in the protologue of *R. torquatium*, then it is probably correctly placed in *R.* subsect. *Taliensia*.

**372. *Rhododendron lulangense*** L. C. Hu & Tateishi, Acta Phytotax. Sin. 30: 545. 1992.

鲁浪杜鹃 lu lang du juan

Shrubs or small trees, ca. 3–4 m tall; shoots 4–5 mm in diam., densely appressed cinereous tomentose, glabrescent. Petiole 20–25 mm, sparsely grayish floccose; leaf blade thickly leathery, oblong-elliptic to narrowly oblong, 8.5–15.5 × 2.5–5 cm; base broadly cuneate or subrounded; margin slightly revolute; apex acute and mucronate; abaxial surface indumentum white, thin, 1-layered, appressed, hairs short and branched; adaxial surface glossy, glabrous. Inflorescence racemose-umbellate, 6–10-flowered; rachis ca. 10 mm, pubescent. Pedicel red, 2.5–3 cm, sparsely branched-hairy and shortly glandular-hairy; calyx lobes 5, 1–2 mm, glabrous, broadly triangular;

corolla funnel-campanulate, pale pink to white, red-purple towards base, without spots, 3–4 × 3–3.5 cm, puberulent inside, lobes 5, 1.4–1.5 cm, emarginate; stamens 10, 1.5–2.4 cm, filaments white-puberulent at base; ovary ca. 7 mm, sparsely pubescent and shortly glandular-hairy; style pink, ca. 2.4 cm, glabrous; stigma subdiscoid. Fl. May.

• *Abies* forests, forest margins, mountains; 3000–3900 m. S Xizang.

**373. *Rhododendron barkamense*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 478. 1982.

马尔康杜鹃 *ma er kang du juan*

Shrubs, to 4.5 m tall; young shoots 4–5 mm in diam., sparsely tomentose, glabrescent. Leaf blade leathery, ovate to ovate-oblong, 5.5–8 × 3.8–4.8 cm; base cordate; margin slightly revolute; apex acute and apiculate; abaxial surface thinly pale brown velvety tomentose, hairs radiate; adaxial surface deep green, glabrous. Inflorescence umbellate, 7–8-flowered; rachis ca. 10 mm. Pedicel 0.7–1 cm, sparsely tomentose; calyx lobes 5, ca. 1 mm, glabrous; corolla campanulate, pale yellow, with purple-red spots on upper lobe and purple basal flecks inside, 2.5–3.5 cm, lobes 5, emarginate; stamens 10, unequal, filaments glabrous; ovary and style glabrous; style shorter than corolla and slightly longer than stamens, glabrous; stigma discoid. Fl. Jun.

• Thickets on high mountains; ca. 3800 m. NW Sichuan.

**374. *Rhododendron heizhugouense*** M. Y. He & L. C. Hu, Acta Bot. Yunnan. 18: 295. 1996.

黑竹沟杜鹃 *hei zhu gou du juan*

Shrubs, 3–5 m tall; branchlets glabrous. Petiole 10–15 mm, densely tomentose; leaf blade thickly leathery, broadly elliptic to oblong-elliptic, 10.5–18 × 5.5–8 cm; base auriculate-cordate; apex acute and mucronate; abaxial surface yellow-green to brownish, indumentum thin, 1-layered, hairs radiate; adaxial surface deep green, glabrous. Inflorescence racemose-umbellate, 15–23-flowered; rachis ca. 15 mm, puberulent. Pedicel 2.5–3.5 cm, sparsely puberulent; calyx obsolete; corolla broadly campanulate, pale yellow, purple-flecked on one lobe at base, 4.4–5.2 × ca. 4 cm; lobes 5; stamens 10, unequal, filaments flattened, puberulent at base; ovary conical, ca. 6 mm, densely white-tomentose; style 3–3.5 cm, glabrous, stigma capitate, brown. Fl. Jun.

• *Abies* forests, mountains; ca. 3300 m. W Sichuan.

**375. *Rhododendron lacteum*** Franchet, Bull. Soc. Bot. France 33: 231. 1886.

乳黄杜鹃 *ru huang du juan*

*Rhododendron mairei* H. Léveillé.

Shrubs or small trees, 2–8 m tall; leaf scars conspicuous; branchlets stout, glabrous. Petiole 20–30 mm, floccose, glabrescent; leaf blade thickly leathery, broadly elliptic to obovate-elliptic, 8–17 × 6–8 cm; base rounded to subcordate; margin somewhat undulate; apex obtuse and apiculate; abaxial surface fawn to gray-tawny, indumentum thin, 1-layered, compacted,

hairs radiate; adaxial surface green, glabrous. Inflorescence racemose-umbellate, 15–30-flowered; rachis 20–30 mm, sparsely floccose. Pedicel 2–3 cm, floccose, glabrescent; calyx lobes 5, 1–1.5 mm, triangular, sparsely puberulent outside, margin ciliate; corolla widely campanulate, pure yellow, unspotted, sometimes with purple basal blotch, 3.5–4.5 cm; lobes 5, ca. 1.5 cm; stamens 10, unequal, shorter than corolla, filaments densely puberulent at base; ovary 5–6 mm, densely pale brown-tomentose; style green, ca. 2.5 cm, glabrous. Capsule oblong-cylindric, slightly curved, 20–30 × ca. 5 mm, hairy. Fl. Apr–May, fr. Sep–Oct.

• *Abies* forests, *Rhododendron* thickets, mountains; 3000–4100 m. W Yunnan.

**376. *Rhododendron wightii*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 27. 1851.

宏钟杜鹃 *hong zhong du juan*

Shrubs or small trees, 2–4 m tall; older branches glabrous; young shoots sparsely gray-floccose. Petiole 15–25 mm, sparsely floccose; leaf blade leathery, oblong-elliptic to oblong-ovate, 12–18 × 5–7 cm; base broadly cuneate or subrounded; apex obtuse or short acuminate and apiculate; abaxial surface cinnamon to brownish or sometimes grayish, indumentum dense, 1-layered, compacted, hairs branched; adaxial surface bright green, glabrous. Inflorescence surrounded at base by ± persistent, stiff, viscid bud scales, laxly umbellate, 10–20-flowered, rachis ca. 10 mm. Pedicel 1.5–3 cm, gray- to yellow-floccose, with a few glandular hairs; calyx lobes 5, 0.5–1 mm, glabrous; corolla campanulate, pale yellow or lemon-yellow, blotched crimson at base within and spotted crimson on one side on upper lobes, 3.5–4.5 cm, lobes 5, ca. 1.5 cm, grooved; stamens 10, unequal, filaments pubescent at base; ovary 5–6 mm, densely brown-tomentose; style ca. 2.7 cm, glabrous, stigma discoid. Capsule oblong-cylindric, slightly curved, 20–30 × 4–5 mm with a few vestiges of hairs. Fl. Jun, fr. Sep.

Thickets, mountain slopes; 3900–4300 m. S Xizang [Bhutan, Nepal, Sikkim].

**377. *Rhododendron beesianum*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 214. 1912.

宽钟杜鹃 *kuan zhong du juan*

*Rhododendron colletum* I. B. Balfour & Forrest; *R. emaculatum* I. B. Balfour & Forrest.

Shrubs or small trees, 2–9 m tall; branchlets stout, initially floccose, later glabrescent. Petiole narrowly winged, 15–30 mm, sparsely floccose or glabrous; leaf blade leathery, oblanceolate to oblong-lanceolate, 10–25 × 3–7 cm; base attenuated, narrow to subrounded; apex acuminate; abaxial surface fawn to pale cinnamon, indumentum thin, 1-layered, compacted, hairs radiate; adaxial surface deep green, glabrous. Inflorescence racemose-umbellate, 10–25-flowered; rachis stout, ca. 25 mm, puberulent. Pedicel 1.5–2.5 cm, sparsely pubescent or glabrescent; calyx lobes 5, 1–2 mm, broadly triangular, glabrous; corolla broadly campanulate, white flushed pink to pink, inner surface with or without few crimson spots on tube on upper lobes, with basal blotch, 4–5 × 4.5–5.5 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary ca. 8 × 3 mm, densely pale

brown-tomentose; style slightly curved, glabrous, stigma shallowly lobed. Capsule oblong-cylindric, slightly curved, 20–40 × 4–8 mm, hairy. Fl. May–Jun, fr. Sep–Nov.

Coniferous forests, *Rhododendron* thickets, mountains; (2700–) 3200–4500 m. SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**378. *Rhododendron traillianum*** Forrest & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 204. 1914.

川滇杜鹃 chuan dian du juan

Shrubs or small trees, 2–8 m tall; shoots gray- to fawn-floccose when young, soon glabrescent. Petiole 10–20 mm, glabrescent; leaf blade leathery, oblong-lanceolate to elliptic, sometimes oblanceolate, 5–12 × 2.5–5 cm; base rounded; apex acute and apiculate or acuminate; abaxial surface pale brown to fawn or red-brown, indumentum dense, 1-layered, hairs radiate, arms short and pyriform or long and ribbonlike; adaxial surface glabrous. Inflorescence racemose-umbellate, 8–15-flowered; rachis ca. 10 mm, floccose. Pedicel 1.5–2 cm, sparsely brown-floccose; calyx lobes 5, ca. 1 mm, broadly triangular, margin ± ciliate; corolla funnel-campanulate or campanulate, white to pink, with crimson spots and purple-red basal flecks, 2.5–5 cm, lobes 5, deeply emarginate; stamens 10, unequal, filaments pubescent at base; ovary 5–7 mm, glabrous or sparsely to densely red-brown-floccose; style ca. 2.2 cm, glabrous. Capsule cylindric, 15–25 × 4–8 mm. Fl. May–Jun, fr. Aug–Oct.

• *Abies* forests, coniferous forest margins, *Rhododendron* thickets, mountains, rocky slopes; 3000–4300 m. SW Sichuan, SE Xizang, NW Yunnan.

- 1a. Leaf blade apex acute, apiculate, abaxial surface pale brown to fawn, with thin, powdery indumentum, hair arms short and pyriform; corolla 2.5–3.5 cm; ovary glabrous or sparsely floccose ..... 378a. var. *traillianum*
- 1b. Leaf blade apex acuminate, abaxial surface red-brown with thick, felted indumentum, hair arms long and ribbonlike; corolla 4–5 cm; ovary densely floccose ..... 378b. var. *dictyotum*

**378a. *Rhododendron traillianum* var. *traillianum***

川滇杜鹃(原变种) chuan dian du juan (yuan bian zhong)

*Rhododendron aberrans* Tagg & Forrest.

Leaf blade 6.5–10 × 2.5–3.5 cm; apex acute, apiculate; abaxial surface pale brown to fawn, with thin, powdery indumentum, hair arms short and pyriform. Corolla 2.5–3.5 cm; ovary glabrous or sparsely floccose. Fl. May–Jun, fr. Sep–Oct.

• *Abies* forests, *Rhododendron* thickets, mountains; 3000–4300 m. SW Sichuan, NW Yunnan.

**378b. *Rhododendron traillianum* var. *dictyotum*** (I. B. Balfour ex Tagg) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 120. 1978.

棕背川滇杜鹃 zong bei chuan dian du juan

*Rhododendron dictyotum* I. B. Balfour ex Tagg, Notes Roy. Bot. Gard. Edinburgh 15: 309. 1927.

Leaf blade 5–12 × 2.5–5 cm; apex acuminate; abaxial surface red-brown with thick, felted indumentum, hair arms long and ribbonlike. Corolla 4–5 cm; ovary densely floccose. Fl. Jun, fr. Aug.

• Coniferous forest margins, *Rhododendron* thickets, rocky slopes; 3300–4200 m. SE Xizang, NW Yunnan.

**379. *Rhododendron wasonii*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1910: 105. 1910.

褐毛杜鹃 he mao du juan

Shrubs, 1–3 m tall; shoots pubescent and with few short stalked glands when young, later glabrescent. Petiole 5–10 mm, ± pubescent; leaf blade thickly leathery, ovate-lanceolate to ovate or ovate-elliptic, 4–8 × 2–4 cm; base broadly cuneate or subrounded; apex acute and cuspidate; abaxial surface indumentum dense, thickly felted, red-brown to rust-brown or dark brown to golden-brown, sometimes subagglutinated, hairs long-rayed, sometimes intermixed with a few glands; adaxial surface shiny, green, glabrescent. Inflorescence corymbose-racemose, 6–8-flowered; rachis 7–10 mm, sparsely pubescent. Pedicel 1.5–2.5 cm, floccose; calyx lobes 5, ca. 3 mm, broadly triangular, floccose outside; corolla broadly campanulate or funnel-campanulate, yellow or white to pink, rose-tinged on upper lobes and with copious crimson spots, 2.5–4 cm, lobes 5; stamens 10, unequal, filaments densely pubescent in lower half; ovary 4–5 mm, densely brownish or whitish villous; style glabrous or villous at base, stigma capitate, yellow-green. Capsule cylindric, ca. 15 × 4 mm, hairy. Fl. May–Jun, fr. Jul–Sep.

• Forests, *Rhododendron* thickets, mountains; 2300–4000 m. W Sichuan.

- 1a. Leaf blade 5.5–8 × 2.4–4 cm; abaxial surface indumentum thick, red- to rust-brown, glands also sometimes present; corolla broadly campanulate, yellow to white or pink, 3.5–4 cm; style glabrous ..... 379a. var. *wasonii*
- 1b. Leaf blade 4–7.5 × 2.5–3.5 cm; abaxial surface indumentum thin, dark brown to golden-brown, subagglutinated, glands absent; corolla funnel-campanulate, white to pink, 2.5–3.5 cm; style villous at base ..... 379b. var. *wenchanense*

**379a. *Rhododendron wasonii* var. *wasonii***

褐毛杜鹃(原变种) he mao du juan (yuan bian zhong)

Leaf blade 5.5–8 × 2.4–4 cm; abaxial surface indumentum thick, red- to rust-brown, glands also sometimes present. Corolla broadly campanulate, yellow to white or pink, 3.5–4 cm; style glabrous. Fl. May–Jun, fr. Jul–Sep.

• Coniferous forests, *Rhododendron* thickets, mountains; (2700–)3000–4000 m. W Sichuan.

**379b. *Rhododendron wasonii* var. *wenchanense*** L. C. Hu, Bull. Bot. Res., Harbin 6(1): 156. 1986 [“*wenchanense*”].

汶川褐毛杜鹃 wen chuan he mao du juan

Leaf blade 4–7.5 × 2.5–3.5 cm; abaxial surface indumen-

tum thin, dark brown to golden-brown, subagglutinated, glands absent. Corolla funnel-campanulate, white to pink, 2.5–3.5 cm; style villous at base. Fl. May–Jun.

- Forests, high mountains; 2300–3600 m. NW Sichuan.

**380. *Rhododendron shanii*** W. P. Fang, Bull. Bot. Res., Harbin 3(4): 38. 1983.

都支杜鹃 du zhi du juan

Trees, rarely shrubs, (2–)6–10 m tall; branchlets and petioles glabrous. Petiole 15–25 mm, glabrous; leaf blade thickly leathery, elliptic, oblong-elliptic or obovate-elliptic, 6–10 × 4–6.5 cm; base obtuse or subrounded; apex rounded; abaxial surface initially yellow, later deep brown, compacted tomentose, hairs stellate; adaxial surface glabrous. Inflorescence racemose-umbellate, 10–14-flowered; rachis ca. 20 mm, glabrous. Pedicel purplish, 1.5–2.5 cm, densely white puberulent; calyx lobes 5, ca. 2 mm, acute, puberulent; margin ciliate; corolla campanulate, outer surface slightly purplish, on drying become whitish, slightly orange and puberulent at base inside, with crimson spots on upper lobes, ca. 4 × ca. 4 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary and style glabrous; style shorter than corolla and longer than stamens, stigma capitate. Capsule cylindrical, brown, 20–25 × ca. 6 mm. Fl. Jun, fr. Sep.

- *Pinus* forests, valleys, mountain summits; 1500–1800 m. W Anhui.

**381. *Rhododendron danbaense*** L. C. Hu, Bull. Bot. Res., Harbin 6(1): 155. 1986.

丹巴杜鹃 dan ba du juan

Shrubs, 3–4 m tall; branchlets subterete, 8–10 mm in diam., densely fawn to grayish branched-pubescent when young. Petiole stout, 10–20 mm, densely gray branched-villous; leaf blade thickly leathery, oblong-elliptic to elliptic, 9–12.5 × 3.5–4.5 cm; base cordate to rounded; margin slightly revolute; apex acuminate; abaxial surface brown to yellowish brown, indumentum thick, 1-layered, densely villous, hairs multi-branched; adaxial surface with grooved midrib tomentose, otherwise glabrous. Inflorescence umbellate, 6–8-flowered; rachis ca. 3 mm; perulae deciduous. Pedicel 1–2 cm, densely branched-villous and with long-stalked glands; calyx yellow-green, lobes 5, 2.5–3 mm, broadly triangular, sparsely villous, margin ciliate with long-glandular hairs; corolla funnelform-campanulate, white, with copious carmine spots, 4–4.5 × ca. 4.5 cm; lobes 5, ca. 1.5 × 2.3 cm, emarginate; stamens 10, unequal; filaments glabrous or puberulent at base; ovary 5–6 mm, densely long-glandular-hairy, villous towards apex; style ca. 2.8 cm, shorter than corolla and longer than stamens, densely villous and long-glandular-hairy below middle; stigma discoid. Fl. May.

- Forests; ca. 3400 m. W Sichuan (Danba).

Without seeing the type specimen of *Rhododendron danbaense*, it cannot be confirmed if the leaf indumentum is truly unistrate, and it is therefore uncertain how this species relates to *R. nigroglandulosum* and to *R. bureavioides* (with a very poorly developed, white lower layer of indumentum). *Rhododendron bureavioides* should probably be recognized as a distinct species (see under *R. bureavii* above). Its type has large calyx lobes 6–8 mm, a character that will technically distinguish it

from both *R. danbaense* and *R. nigroglandulosum*. All three species are distributed in the same region, close to and N of Kangding in W Sichuan.

**382. *Rhododendron nigroglandulosum*** Nitzelium, Rhododendrons Magnolias Camellias 1975: 27. 1975.

大炮山杜鹃 da pao shan du juan

Shrubs, 3–5 m tall; young shoots densely tomentose and short-glandular-hairy. Leaf blade leathery, lanceolate to oblong, 12–17 × 4–5 cm, tapering below to rounded base; apex obtuse, apiculate; abaxial surface with tawny, loosely 1-layered, woolly indumentum; adaxial surface glabrous. Inflorescence terminal, 8–10-flowered; rachis 10–15 mm. Pedicel reddish, 2–3 cm, floccose-tomentose; calyx lobes 5, ca. 1 mm, triangular, floccose-tomentose; corolla campanulate, deep pink initially, later yellowish pink, with conspicuous purple spots, 4–5 cm; ovary tomentose and shortly glandular-hairy; style glabrous. Capsule 15–20 × ca. 8 mm. Fl. Jul.

- Mountain slopes; ca. 3500 m. W Sichuan (Kangding).

**383. *Rhododendron balangense*** W. P. Fang, Acta Phytotax. Sin. 21: 468. 1983.

巴朗杜鹃 ba lang du juan

Shrubs, 1–3 m tall; young shoots and petioles glabrous; bud scales persistent. Petiole 15–30 mm, densely glandular and floccose-tomentose; leaf blade thickly leathery, obovate to elliptic-ovate, 6–10 × 3.5–5 cm; base obtuse or subrounded; margin slightly revolute; apex acute, apiculate; abaxial surface with indumentum 2-layered, upper layer yellowish to fawn, loose, ± deciduous, hairs branched, lower layer whitish, appressed, persistent; adaxial surface glabrous. Inflorescence racemose-umbellate, 13–15-flowered; rachis 10–15 mm, densely gray-white to yellowish floccose. Pedicel 3–4 cm, indumentum as for rachis; calyx lobes 5, 1–2 mm, acute, outer surface densely floccose; corolla campanulate, white, 3.5–4 × ca. 3 cm; lobes 5, orbicular, emarginate; stamens 10, unequal, filaments densely puberulent in lower half; ovary and style glabrous; stigma capitate. Peduncle ca. 4 cm. Capsule oblong-cylindric, slightly curved, 22–28 × 4–6 mm, calyx persistent. Fl. Jun, fr. Sep.

- Thickets on mountain slopes; 2400–3400 m. W Sichuan.

Hu (Acta Phytotax. Sin. 30: 545. 1992) described fruiting material. Based on field observations, this species may have arisen as a hybrid of *Rhododendron watsonii*, which belongs to *R.* subsect. *Grandia*, in which *R. balangense* may fit better. However, the 5-lobed corolla is more in line with a placement in *R.* subsect. *Taliensia*.

**384. *Rhododendron sphaeroblastum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 60. 1920.

宽叶杜鹃 kuan ye du juan

Shrubs, 1–3 m tall; young shoots and petioles glabrous. Petiole 15–30 mm; leaf blade thickly leathery, ovate to oblong-ovate or ovate-elliptic, 7–15 × 4–6.5 cm; base rounded or slightly cordate; apex obtuse or subrounded, mucronate; abaxial surface with indumentum 2-layered, upper layer rust-red to cinnamon, or deep rust-red, loose, woolly, persistent or deterrent,

lower layer compacted; adaxial surface glabrous. Inflorescence racemose-umbellate, 10–12-flowered; rachis 10–15 mm, glabrous. Pedicel 1–2 cm, glabrous; calyx lobes 5, 1–1.5 mm, unequal, triangular, acute, glabrous; corolla funnel-campanulate, or broadly campanulate, white, to pink or red to yellow, with carmine spots on corolla tube and upper lobes, 3.5–4.5 cm, lobes 5; stamens 10, unequal, filaments puberulent at base; ovary 5–6 mm, glabrous or sparsely floccose; style ca. 2 cm, glabrous. Capsule cylindrical, slightly curved, 18–20 × 5–6 mm. Fl. May–Jun, fr. Aug–Oct.

• Mixed forests, *Abies* forests, *Rhododendron* thickets, mountain slopes; 3300–4400 m. SW Sichuan, N Yunnan.

- 1a. Leaf blade 7.5–15 × 4–6.5 cm; abaxial surface with upper-layer of indumentum thick, persistent; corolla white to pink, 3.5–4 cm; ovary glabrous ..... 384a. var. *sphaeroblastum*
- 1b. Leaf blade 7–12 × 5–6 cm; abaxial surface with upper layer of indumentum thin, ± detersile; corolla white, yellow, or red, 4–4.5 cm; ovary sparsely floccose ..... 384b. var. *wumengense*

**384a. *Rhododendron sphaeroblastum* var. *sphaeroblastum***

宽叶杜鹃(原变种) kuan ye du juan (yuan bian zhong)

Leaf blade 7.5–15 × 4–6.5 cm; abaxial surface with upper-layer of indumentum thick, persistent. Corolla white to pink, 3.5–4 cm; ovary glabrous. Fl. May–Jun, fr. Aug–Oct.

• *Abies* forests, *Rhododendron* thickets, mountain slopes; 3300–4400 m. SW Sichuan, N Yunnan.

**384b. *Rhododendron sphaeroblastum* var. *wumengense* K. M. Feng, Acta Bot. Yunnan. 5: 265. 1983.**

乌蒙宽叶杜鹃 wu meng kuan ye du juan

Leaf blade 7–12 × 5–6 cm; abaxial surface with upper layer of indumentum thin, ± detersile. Corolla white, yellow, or red, 4–4.5 cm; ovary sparsely floccose. Fl. May.

• Mixed forests, *Rhododendron* thickets; 3600–4000 m. N Yunnan.

**385. *Rhododendron taliense* Franchet, Bull. Soc. Bot. France 33: 232. 1886.**

大理杜鹃 da li du juan

Shrubs, 1–3 m tall; branchlets densely woolly-tomentose when young, later glabrescent. Leaf blade thickly leathery, oblong-ovate to ovate-lanceolate, 4–10 × 2–3.5 cm; base rounded to cuneate; margin slightly revolute; apex acute, mucronate; abaxial surface with indumentum 2-layered, upper layer red-brown to cinnamon, loose, felted tomentose, hairs branched, lower layer compacted; adaxial surface slightly rugulose, glabrous. Inflorescence compact, umbellate, 10–15-flowered; rachis ca. 10 mm. Pedicel 1–2 cm, densely red-brown tomentose; calyx lobes 5, 2–3 mm, glabrous; corolla campanulate, creamy-white to yellow or pale pink, with copious crimson spots on corolla-tube on upper lobes, 3–3.5 cm, lobes 5, emarginate; stamens 10, unequal, filaments pubescent at base; ovary glabrous;

style shorter than corolla and slightly longer than stamens, glabrous; stigma capitate. Capsule cylindrical, 10–15 × 4–5 mm. Fl. May–Jun, fr. Sep–Nov.

• *Abies* forests, *Rhododendron* thickets, mountains; 3200–4100 m. W Yunnan.

**386. *Rhododendron nakotiltum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 143. 1920.**

德钦杜鹃 de qin du juan

Shrubs, 1–3.5 m tall; old branches glabrescent; young shoots shiny, green, 5–6 mm in diam., sparsely white-floccose. Leaf blade leathery, oblong to obovate-oblong, 6–11 × 3–4.5 cm; base subrounded; apex acute and apiculate; abaxial surface with indumentum 2-layered, upper layer loose, fawn, floccose, ± detersile when mature, persistent only along midrib, hairs long-rayed, lower layer thin, appressed; adaxial surface glabrous except in groove of midrib. Inflorescence compact, umbellate, 12–15-flowered; rachis 5–10 mm, sparsely pubescent. Pedicel 1.5–2 cm, densely floccose; calyx lobes 5, 1–1.5 mm, rounded, glabrous, sparsely ciliate on margin; corolla campanulate, white flushed rose to pink, with red spots and purple basal blotch inside, ca. 3.5 × 4 cm; lobes 5, subrounded; stamens 10, unequal, filaments densely puberulent; ovary ca. 5.5 × 2.5 mm, densely rufous floccose-tomentose; style ca. 2.5 cm, glabrous, stigma discoid. Fl. Jun.

• Thickets on mountain slopes; 3300–4000 m. NW Yunnan.

**387. *Rhododendron rufum* Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 490. 1891.**

黄毛杜鹃 huang mao du juan

*Rhododendron weldianum* Rehder & E. H. Wilson.

Shrubs or small trees, 1.5–8 m tall; shoots densely whitish to tawny floccose when young, soon glabrescent. Petiole 15–20 mm, initially with floccose hairs, later glabrescent; leaf blade leathery, elliptic to oblong-ovate, 6.5–11 × 3–5 cm; base subrounded or broadly cuneate; apex obtuse or acute, mucronate; abaxial surface with indumentum 2-layered, upper layer thick, soft, rust-yellow to rufous, woolly-tomentose, hairs branched, lower layer compacted, gray-white; adaxial surface slightly shiny, glabrous. Inflorescence racemose-umbellate, 6–11-flowered; rachis ca. 5 mm, densely rusty brown-pubescent. Pedicel 1–1.5 cm, densely gray floccose; calyx lobes 5, ca. 1 mm, broadly triangular, floccose outside; corolla funnel-campanulate, white to pale pink, with crimson spots on upper lobes, 2–3 cm, puberulent at base inside; lobes 5, slightly unequal; stamens 10, 1.2–2 cm, filaments white-puberulent at base; ovary ca. 4 mm, densely gray-brown woolly-tomentose, sometimes with few glandular hairs at apex; style ca. 2 cm, glabrous or with few hairs at base. Capsule oblong-cylindric, slightly curved, 20–25 × 5–7 mm. Fl. May–Jun, fr. Jul–Sep.

• Forests, mountain slopes; 2300–3800 m. C and SW Gansu, E and S Qinghai, SW Shaanxi (Taibai Shan), N and W Sichuan.

*Rhododendron rufum* var. *glandulosum* G. H. Wang (Bull. Bot. Res., Harbin 15: 428. 1995) was described from S Gansu (Kangle). It is said to differ from the typical variety in having a densely stipitate-glandular ovary. However, no material fitting this description was seen, and it is therefore uncertain if this entity actually belongs within *R. rufum*.

**388. *Rhododendron alutaceum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 81. 1917.

棕背杜鹃 zong bei du juan

Shrubs, 1.5–4 m tall; young shoots and petioles densely woolly-tomentose and/or glandular; bud scales deciduous or ± persistent. Petiole 10–15 mm; leaf blade thickly leathery, oblong, broadly lanceolate to lanceolate or narrowly oblong, 5–14 × 1.5–3.5 cm; base obtuse or subrounded; margin revolute; apex acute or shortly acuminate; abaxial surface with indumentum 2-layered, upper layer thick, woolly or felted, pale brown, rufous, rust-red, sometimes ± detersile, hairs branched, lower layer gray-white and compacted; adaxial surface glabrous. Inflorescence racemose-umbellate, 10–15-flowered; rachis 10–18 mm. Pedicel 1.5–2 cm, sparsely floccose and short-glandular-hairy or eglandular; calyx lobes 5, ca. 1 mm, subrounded, sparsely ciliate outside, margin glandular-ciliate; corolla campanulate or funnel-campanulate, white to pink, with crimson spots and with purple red basal blotch, 3.5–4 cm, lobes 5; stamens 10, unequal, filaments densely white-puberulent; ovary ca. 6 mm, densely tomentose and glandular-hairy to glabrous or sparsely floccose-tomentose and eglandular; style glabrous. Capsule cylindric, 10–15 × ca. 4 mm. Fl. Jun–Jul, fr. Sep–Oct.

• Coniferous forests, thickets, mountains, rocky slopes; 3200–4300 m. W Sichuan, SE Xizang, NW Yunnan.

- 1a. Young shoots rusty brown-tomentose, without glands; ovary sparsely floccose-tomentose, without glands ..... 388c. var. *iodes*
- 1b. Young shoots densely glandular or brownish woolly-tomentose, usually mixed with red glands; ovary glandular-hairy, sometimes also densely tomentose.
  - 2a. Leaf bud scales deciduous; young shoots densely brownish woolly-tomentose, usually mixed with red glands; ovary densely shortly glandular-hairy ..... 388a. var. *alutaceum*
  - 2b. Leaf bud scales ± persistent; young shoots densely glandular; ovary densely tomentose and shortly glandular-hairy ..... 388b. var. *russoinctum*

**388a. *Rhododendron alutaceum* var. *alutaceum***

棕背杜鹃(原变种) zong bei du juan (yuan bian zhong)

*Rhododendron globigerum* I. B. Balfour & Forrest; *R. roxieanum* Forrest ex W. W. Smith var. *globigerum* (I. B. Balfour & Forrest) D. F. Chamberlain.

Young shoots densely brownish woolly-tomentose, usually mixed with red glands; bud scales deciduous. Leaf blade 7–14 × 2–3.5 cm; abaxial surface pale brown, upper indumentum densely lanate-tomentose, persistent. Ovary densely shortly glandular-hairy. Fl. Jun–Jul, fr. Sep–Oct.

• Coniferous forests, thickets, mountains, rocky slopes; 3200–4300 m. W Sichuan, NW Yunnan.

**388b. *Rhododendron alutaceum* var. *russoinctum*** (I. B. Bal-

four & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 119. 1978.

腺房棕背杜鹃 xian fang zong bei du juan

*Rhododendron russoinctum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 129. 1919; *R. triplonaevium* I. B. Balfour & Forrest; *R. tritifolium* I. B. Balfour & Forrest.

Young shoots densely glandular; bud scales ± persistent. Leaf blade 5–9.5 × 1.5–2.5 cm; abaxial surface rust-red, upper indumentum thick, loose, felted, ± deciduous. Ovary densely tomentose and shortly glandular-hairy. Fl. Jun–Jul, fr. Oct.

• Coniferous forests, thickets, mountains; 3300–4200 m. SE Xizang, NW Yunnan.

**388c. *Rhododendron alutaceum* var. *iodes*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 350. 1982.

毛枝棕背杜鹃 mao zhi zong bei du juan

*Rhododendron iodes* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 49. 1920.

Young shoots densely rusty brown-tomentose; bud scales deciduous. Leaf blade 6–10 × 1.5–2.5 cm; abaxial surface rufous, upper indumentum densely felted-tomentose, persistent. Ovary sparsely floccose-tomentose, eglandular. Fl. Jun–Jul, fr. Sep.

• *Rhododendron* thickets, mountains; 3300–4300 m. SW Sichuan (Muli), SE Xizang, NW Yunnan.

**389. *Rhododendron roxieanum*** Forrest ex W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 344. 1915.

卷叶杜鹃 juan ye du juan

Shrubs, 1–3 m tall; branchlets short, stout and slightly flexuous, densely rufous or rust-red woolly-tomentose when young; bud scales persistent. Petiole ca. 10 mm, thickly woolly-tomentose; leaf blade thickly leathery, narrowly lanceolate to oblanceolate or linear, 3–10 × 0.5–3 cm; base cuneate, decurrent along petiole; margin strongly revolute; apex acute and with a stiff sharp point, or cucullate; abaxial surface with indumentum 2-layered, upper layer thick, rust-red to rufous, loose, woolly-tomentose, hairs branched, lower layer thin, compacted; adaxial surface shiny, slightly rugulose, glabrous except for groove of midrib. Inflorescence racemose-umbellate, 10–15-flowered; rachis ca. 10 mm, rusty red-tomentose. Pedicel 1–1.5 cm; calyx lobes 5, 0.5–1 mm, densely rust-red branched-tomentose and short-glandular-hairy; corolla campanulate to funnel-campanulate, white to white tinged pink, with copious purple-red spots on corolla-tube and on upper lobes, 2–3.5 cm, lobes 5; stamens 10, unequal, filaments densely puberulent in lower 1/2; ovary ca. 5 mm, densely rusty red-tomentose, sometimes mixed with short-stalked glands; style glabrous, stigma discoid. Capsule oblong cylindric, ca. 18 × 5 mm. Fl. Jun–Jul, fr. Aug–Oct.

• Coniferous forests, *Rhododendron* thickets, mountains, slopes; 2600–4300 m. S Gansu, SW Shaanxi, SW Sichuan, SE Xizang, NW Yunnan.

The extensive synonymy reflects the considerable variation in this species, especially with respect to the leaves. This variation may be in part due to hybridization in the field. In particular, var. *cucullatum* appears to be intermediate between the more extreme var. *oreonastes* and *Rhododendron proteoides*. However, relatively uniform populations of var. *cucullatum* occur in W Yunnan.

- 1a. Leaf blade linear, 0.5–1 cm wide; corolla 2–2.5 cm ..... 389c. var. *oreonastes*
- 1b. Leaf blade narrowly lanceolate or oblanceolate, 1.3–2 cm wide; corolla 3–3.5 cm.
  - 2a. Leaf blade narrowly lanceolate, 6–10 × 1.3–2 cm; apex acute with a stiff sharp point ..... 389a. var. *roxieanum*
  - 2b. Leaf blade oblanceolate, 3–8 × 2–3 cm; apex acute to cucullate ..... 389b. var. *cucullatum*

**389a. *Rhododendron roxieanum* var. *roxieanum***

卷叶杜鹃(原变种) *juan ye du juan* (*yuan bian zhong*)

*Rhododendron aischropeplum* I. B. Balfour & Forrest; *R. poecilodermum* I. B. Balfour & Forrest; *R. recurvum* I. B. Balfour & Forrest; *R. roxieanum* var. *recurvum* (I. B. Balfour & Forrest) Davidian.

Leaf blade narrowly lanceolate, 6–10 × 1.3–2 cm; apex acute with a stiff sharp point; corolla 3–3.5 cm. Fl. Jun–Jul, fr. Oct.

• Coniferous forests, *Rhododendron* thickets, mountains; 2600–4300 m. S Gansu (Wudu), SW Shaanxi (Fengxian), SW Sichuan, SE Xizang, NW Yunnan.

**389b. *Rhododendron roxieanum* var. *cucullatum*** (Handel-Mazzetti) D. F. Chamberlain ex L. C. Hu in L. C. Hu & M. Y. Fang, Fl. Reipubl. Popularis Sin. 57(2): 238. 1994.

兜尖卷叶杜鹃 *dou jian juan ye du juan*

*Rhododendron cucullatum* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 58: 26. 1921; *R. coccinopeplum* I. B. Balfour & Forrest; *R. porphyroblastum* I. B. Balfour & Forrest.

Leaf blade oblanceolate, 3–8 × 2–3 cm; apex acute to cucullate; corolla ca. 3 cm. Fl. Jun–Jul, fr. Oct.

• *Rhododendron* thickets, mountain slopes; 3500–4300 m. SW Sichuan, SE Xizang, NW Yunnan.

**389c. *Rhododendron roxieanum* var. *oreonastes*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 166. 1984.

线形卷叶杜鹃 *xian xing juan ye du juan*

*Rhododendron recurvum* var. *oreonastes* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 113. 1919.

Leaf blade linear, 4–7 × 0.5–1 cm. Corolla 2–2.5 cm. Fl. Jun–Jul, fr. Aug.

• *Rhododendron* thickets, mountains, stony slopes; 3700–4200 m. NW Yunnan.

**390. *Rhododendron roxieoides*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 39: 478. 1982.

巫山杜鹃 *wu shan du juan*

Shrubs, ca. 2.5 m tall; young shoots densely tawny to gray woolly-tomentose; bud scales persistent. Petiole 5–10 mm, densely woolly-tomentose; leaf blade thickly leathery, linear to narrowly oblanceolate, 5.5–7.5 × 1–1.8 cm; base cuneate; margin conspicuously revolute; apex acuminate; abaxial surface with indumentum 2-layered, upper layer chestnut, thickly woolly, hairs branched, lower layer whitish and compacted; adaxial surface green, shiny, glabrous except for tomentose groove of midrib. Inflorescence racemose-umbellate, 12–16-flowered; rachis ca. 5 mm. Pedicel 0.7–1 cm, densely tomentose; calyx lobes 5, ca. 2 mm, triangular, densely tomentose and glandular-hairy outside; corolla funnel-campanulate, deep red, with purple spots, 2.5–3 cm, lobes 5; stamens (9 or) 10, unequal, filaments puberulent in lower part; ovary ca. 5 mm, with a few short glandular hairs; style exerted, subequal to corolla, glandular in lower 1/2; stigma capitate, green. Fl. May.

• Forests, valleys; 800–2200 m. Chongqing, E Sichuan.

**391. *Rhododendron dachengense*** G. Z. Li, Acta Bot. Yunnan. 23: 287. 2001.

大橙杜鹃 *da cheng du juan*

Shrubs, 2–3 m tall; branchlets blackish gray; young branches densely velutinous, glabrescent; bud scales persistent. Petiole 5–17 mm, felted at first, soon glabrescent; leaf blade leathery, elliptic-oblong to obovate, (3–)3.5–7(–10) × (1.2–)1.5–2.5(–3) cm; base cuneate to rounded; apex acute or mucronate; abaxial surface with indumentum 2-layered, densely felted, upper layer of indumentum detersile, lower layer stuck together; adaxial surface green, glabrous; midrib impressed adaxially. Inflorescence racemose-umbellate, 4–7-flowered. Pedicel 0.5–1 cm, densely velutinous; calyx lobes 5–7, ca. 1 mm, undulate-triangular, velutinous; corolla campanulate, white to pink, upper lobes sometimes with red spots, 2.5–3 cm, lobes 5–7, suborbicular, 1–1.2 cm; stamens 10–13, 0.4–1.8 cm, filaments glabrous or pilose in lowest third; ovary conical, densely velutinous; style ca. 2.3 cm, glabrous, stigma capitate. Capsule not known. Fl. Apr.

• 800–1700 m. EC Guangxi.

The original author placed this species in *Rhododendron* subsect. *Taliensia* but suggested that its affinities were with *R. haematodes* in *R.* subsect. *Neriiflora*. From the original description and accompanying plate, *R. dachengense* appears allied to, and is possibly conspecific with, *R. roxieoides*.

- 1a. Corolla with red spots on upper lobes; lobes 5–7; stamens 10–13, filaments pilose below ..... 391a. var. *dachengense*
- 1b. Corolla without spots on upper lobes; lobes 5; stamens 10, filaments glabrous ..... 391b. var. *scopulum*

**391a. *Rhododendron dachengense* var. *dachengense***

大橙杜鹃(原变种) *da cheng du juan* (*yuan bian zhong*)



Leaf blade elliptic-oblong to obovate, (3–)3.5–7(–10) cm. Corolla with red spots on upper lobes; lobes 5–7; stamens 10–13, filaments pilose below.

- 800–1000 m. EC Guangxi (Jinxu).

**391b. *Rhododendron dachengense* var. *scopulum*** G. Z. Li, Acta Bot. Yunnan. 23: 288. 2001.

圣堂杜鹃 sheng tang du jian

Leaf blade obovate to long-obovate, 4–5.5 cm. Corolla without spots on upper lobes; lobes 5; stamens 10, filaments glabrous.

- 1200–1700 m. EC Guangxi (Jinxu).

**392. *Rhododendron pronum*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 318. 1927.

平卧杜鹃 ping wo du jian

Prostrate shrubs, 0.1–0.5 m tall; bud scales persistent. Petiole ca. 5 mm, glabrous; leaf blade thickly leathery, oblong-elliptic to oblanceolate, 3–6.5 × 1–2 cm; base cuneate; margin strongly revolute; apex obtuse to acute with small and downward curved sharp point; abaxial surface with indumentum 2-layered, upper layer dark gray to fawn, thick and loose, woolly, hairs branched, lower layer compacted and gray-white; adaxial surface slightly rugulose, glabrous. Inflorescence racemose-umbellate, 6–12-flowered, surrounded by persistent perulae and bracts; rachis ca. 3 mm. Pedicel 1.5–2.5 cm, sparsely floccose or glabrescent; calyx lobes 5, ca. 2 mm, obtusely triangular, glabrous or sparsely floccose; corolla campanulate, pale yellow to creamy-white, with deep crimson spots on corolla tube on upper lobes, 3–3.5 × ca. 3.5 cm; lobes 5, slightly unequal, subrounded; stamens 10, filaments glabrous; ovary and style glabrous; style shorter than corolla, glabrous; stigma discoid. Capsule cylindrical, blackish, ca. 10 × 4–5 mm, glabrous. Fl. Jun, fr. Sep–Oct.

- Mountains, moist rocky slopes, stony streambanks; 2600–4400 m. NW Yunnan.

**393. *Rhododendron ×bathyphyllum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 27. 1919, pro sp.

多叶杜鹃 duo ye du jian

Dwarf shrubs, 0.5–1.5 m tall; young shoots densely rust-red to gray-tomentose, later glabrescent. Petiole 5–25 mm, densely rusty red-tomentose; leaf blade thickly leathery, oblong, 4–7 × 1.5–2.5 cm; base obtuse to rounded; margin revolute; apex ± cucullate; abaxial surface with indumentum 2-layered, upper layer rust-red, thick, woolly, hairs branched, lower layer thin, appressed; adaxial surface slightly rugulose, glabrous except for tomentose groove of midrib. Inflorescence umbellate, 10–15-flowered; rachis ca. 5 mm, floccose-tomentose; perulae ± persistent during flowering period. Pedicel 1–1.5 cm, sparsely floccose-tomentose or glabrescent; calyx lobes 5, ca. 6 mm, slightly unequal, lanceolate, glabrous; corolla campanulate, white, with deep crimson spots on upper lobes and adjacent parts of tube, 3.5–3.8 cm, lobes 5, subrounded, deeply emarginate; stamens 10, 1.5–2 cm, filaments densely puber-

ulent in lower half; ovary ca. 5 × 3 mm, densely rusty red-tomentose, eglandular; style shorter than corolla, glabrous; stigma capitate. Fl. Jul.

- Forest margins, thickets, rocky mountain slopes; 3300–4300 m. SE Xizang, NW Yunnan.

Field observations in NW Yunnan indicate that this entity is a hybrid between *Rhododendron aganniphum* and *R. proteoides*.

**394. *Rhododendron proteoides*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 264. 1916.

矮生杜鹃 ai sheng du jian

*Rhododendron lamproeplum* I. B. Balfour & Forrest.

Dwarf shrubs, 0.6–1.5 m tall; branchlets slender, with very short internodes, 3–4 mm in diam., densely rufous to gray-brown tomentose; bud scales persistent. Petiole 4–5 mm, densely thick rufous woolly-tomentose; leaf blade thickly leathery, oblong to oblanceolate, 2–4 × 0.5–1 cm; base attenuate-cuneate; margin strongly revolute; apex blunt-rounded with small and introrse curved sharp point; abaxial surface with indumentum 2-layered, upper layer rust-red, thick, woolly, hairs long-branched, lower layer thin, appressed; adaxial surface slightly rugulose, glabrous. Inflorescence compact, umbellate, ca. 8-flowered; rachis ca. 5 mm. Pedicel ca. 1 cm, densely rufous-tomentose; calyx lobes 5, ca. 2 mm, subtriangular, glabrous or only tomentose at base outside, margin ciliate; corolla funnel-form, white to pale yellow, with crimson spots on corolla-tube and on upper lobes, ca. 3 cm, lobes 5, slightly unequal; stamens 10, unequal, filaments white-puberulent in lower 1/2; ovary ca. 4 mm, densely rusty red-fasciculate branched-tomentose; style shorter than corolla and longer than stamens, glabrous. Capsule oblong-cylindric, ca. 10 × 5 mm, ± hairy. Fl. Jun–Jul, fr. Sep–Oct.

- Thickets, high mountains; 3600–4500 m. SW Sichuan, SE Xizang, NW Yunnan.

Field observations indicate that this species hybridizes extensively in the wild, especially with *Rhododendron aganniphum* and perhaps also with *R. roxieanum*. Indeed, *R. roxieanum* var. *parvum* Davidian (*Rhododendron* Spec. 2: 308. 1989), described from China, is either a synonym of *R. proteoides* or a hybrid of it.

**395. *Rhododendron comisteum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 42. 1919.

砾石杜鹃 li shi du jian

Dwarf shrubs, 0.6–1 m tall; branchlets densely gray to pale brown woolly-tomentose; bud scales persistent. Petiole ca. 5 mm, densely gray-brown to rust-red woolly-tomentose; leaf blade leathery, narrowly elliptic to oblanceolate, 3–5 × 1–1.5 cm; base cuneate; margin revolute; apex obtuse, mucronulate; abaxial surface with indumentum 2-layered, upper layer gray-brown to rust-red, thick, loose, woolly-tomentose, lower layer thin, appressed; adaxial surface dark green, glabrous except for tomentose groove of midrib. Inflorescence umbellate, 6–8-flowered; rachis 3–5 mm. Pedicel ca. 2 cm, densely rust-brown floccose-tomentose, eglandular; calyx lobes 5, 2–3 mm, broadly tri-

angular, sparsely floccose-tomentose, margin ciliate; corolla tubular-campanulate, deep rose, with few crimson spots on corolla-tube and on upper lobes, ca. 3.5 cm, lobes 5; stamens 10, unequal, 1.2–2.2 cm, filaments white-puberulent at base; ovary ca. 5 mm, densely rufous tomentose, eglandular; style shorter

than corolla and slightly longer than stamens, glabrous; stigma discoid. Fl. Jul.

- Mountain thickets, rock walls, scree slopes; 3900–4300 m. SE Xizang, NW Yunnan.

**15. *Rhododendron* subsect. *Fulva* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 550. 1949.**

镰果杜鹃亚组 *lian guo du juan ya zu*

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

*Rhododendron* ser. *Fulva* Tagg in J. B. Stevenson, Sp. Rhodod. 287. 1930 [*Fulvum*].

Shrubs or small trees; young shoots brownish, whitish or gray-tomentose. Leaf blade leathery, oblanceolate, oblong-lanceolate or obovate; abaxial surface fulvous or gray-white, indumentum felted or woolly, 1- or 2-layered; adaxial surface glabrous when mature. Inflorescence terminal, 8–20-flowered; rachis 1–1.5 cm. Calyx minute; corolla campanulate or funnel-campanulate, 5-lobed, white to pale pink with crimson basal blotch and dark spots on upper lobes; stamens 10; ovary glabrous; style glabrous. Capsule narrowly elongate-cylindric, strongly curved to sickle-shaped.

Two species: China, Myanmar; two species (one endemic) in China.

- 1a. Abaxial leaf surface with 2-layered indumentum, upper layer fulvous, granular, hairs fasciculate ..... 396. *R. fulvum*
- 1b. Abaxial leaf surface with 1- or 2-layered indumentum, upper layer woolly, gray-white, smooth, not granular, hairs branched ..... 397. *R. uvariifolium*

**396. *Rhododendron fulvum*** I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 110. 1917.

镰果杜鹃 *lian guo du juan*

Shrubs or small trees, 2–8 m tall; young shoots densely fulvous- to gray-tomentose. Petiole 10–20 mm, densely gray to fulvous fasciculate-tomentose, granular; leaf blade leathery, oblanceolate to oblong-lanceolate or obovate, 8–20 × 3–7.5 cm; base cuneate or subrounded; apex obtuse or shortly acuminate, apiculate; abaxial surface with indumentum 2-layered, upper layer fawn to fulvous or rust-red, granular, hairs fasciculate branched, lower layer gray, hairs short stellate. Inflorescence racemose-umbellate, 10–20-flowered; rachis ca. 10 mm. Pedicel 1.5–2.5 cm, glabrous; calyx lobes 5, 1–2 mm, acute or subrounded, glabrous; corolla funnel-campanulate, white to pink or rose, with crimson basal blotch and red spots on upper lobes, 3–4 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary and style glabrous; style slightly shorter than corolla, glabrous; stigma capitate. Capsule narrowly elongate-cylindric, curved at maturity, 25–40 × 3–4 mm. Fl. Apr–May, fr. Jul–Oct.

*Abies* forests, *Rhododendron* thickets, alpine slopes; 2700–4400 m. SW Sichuan, SE Xizang, W Yunnan [NE Myanmar].

Field observations indicate that the two subspecies overlap morphologically where their geographic ranges overlap, but that they are sufficiently distinct to be maintained at subspecific rank. The typical subspecies appears to be restricted to the SW part of the range of the species.

- 1a. Leaf blade 1.8–2.5 × as long as broad; abaxial surface indumentum rich rust-red ..... 396a. subsp. *fulvum*
- 1b. Leaf blade (2.5–)2.8–3 × as long as broad; abaxial surface indumentum fulvous to brown ..... 396b. subsp. *fulvoides*

**396a. *Rhododendron fulvum* subsp. *fulvum***

镰果杜鹃(原亚种) *lian guo du juan (yuan ya zhong)*

Leaf blade 1.8–2.5 × as long as broad; abaxial surface indumentum rich rust-red.

*Abies* forests, *Rhododendron* thickets, alpine slopes; 3000–3700 m. NW Yunnan [NE Myanmar].

**396b. *Rhododendron fulvum* subsp. *fulvoides*** (I. B. Balfour & Forrest) D. F. Chamberlain in Argent et al., *Rhododendron* Handb. 1998: 350. 1997.

棕叶镰果杜鹃 *zong ye lian guo du juan*

*Rhododendron fulvoides* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 112. 1920.

Leaf blade (2.5–)2.8–3 × as long as broad; abaxial surface indumentum fulvous to brown.

- 2700–4400 m. SW Sichuan, SE Xizang, W Yunnan.

**397. *Rhododendron uvariifolium*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 213. 1912 [*uvariifolium*].

紫玉盘杜鹃 *zi yu pan du juan*

*Rhododendron dendritrichum* I. B. Balfour & Forrest; *R. monbeigii* Rehder & E. H. Wilson; *R. niphargum* I. B. Balfour & Kingdon Ward; *R. uvariifolium* var. *griseum* Cowan.

Shrubs or trees, 2–10 m tall; young shoots whitish or gray-tomentose. Petiole 10–20 mm, gray-tomentose; leaf blade leathery, oblanceolate to oblong-oblanceolate or obovate, 11–24 × 3.5–6.5 cm; base cuneate, sometimes obtuse; apex obtuse or acute, mucronate; abaxial surface gray-white to gray-brown, smooth, indumentum dense, continuous, hairs dendroid-branched. Inflorescence racemose-umbellate, 8–18-flowered; rachis ca. 10 mm. Pedicel 1.5–2.5 cm, sparsely floccose or almost glabrous; calyx lobes 5, 0.5–1 mm; corolla campanulate, white to

pink or rose, with crimson basal blotch and purple spots on upper lobes, 3–3.5 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary glabrous; style pistil slightly shorter than or nearly equaling corolla, glabrous; stigma capitate. Capsule elongated, strongly curved, 3.5–5 × 3–4 mm, glabrous. Fl. Apr–Jun, fr. Aug–Oct.

**16. *Rhododendron* subsect. *Lanata*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 337. 1979.

黄钟杜鹃亚组 huang zhong du juan ya zu

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

Shrubs or small trees; young shoots densely woolly-tomentose. Leaf blade leathery, elliptic to obovate; abaxial surface with dense 1-layered woolly indumentum, hairs straight or crispate dendroid-branched. Inflorescence terminal, lax or dense, 3–15-flowered, rachis 3–10 mm. Calyx minute, 5-lobed; corolla tubular-campanulate to open-campanulate, rarely saucer-shaped, 5-lobed, yellow, white to pink; stamens 10; ovary densely tomentose, rarely glandular (in *R. circinnatum*).

Four species: Bhutan, China, India, Sikkim; four species (two endemic) in China.

- 1a. Corolla tubular-campanulate; ovary densely long glandular-hairy ..... 401. *R. circinnatum*
- 1b. Corolla broadly campanulate or campanulate; ovary tomentose, eglandular.
  - 2a. Corolla broadly campanulate, sulfur-yellow ..... 398. *R. lanatum*
  - 2b. Corolla campanulate, white to pink.
    - 3a. Leaf lamina 2.2–6.2 cm; inflorescence 3–5-flowered ..... 399. *R. tsariense*
    - 3b. Leaf lamina 9–11 cm; inflorescence 10–15-flowered ..... 400. *R. lanatoides*

**398. *Rhododendron lanatum*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 2: t. 16. 1851.

黄钟杜鹃 huang zhong du juan

*Rhododendron flinckii* Davidian; *R. lanatum* var. *luciferum* Cowan; *R. luciferum* (Cowan) Cowan.

Shrubs or small trees, 1–3 m tall; young shoots and petioles densely whitish to tawny woolly-tomentose. Petiole 10–15 mm; leaf blade leathery, elliptic to obovate or oblong-obovate, 6–11 × 2.5–4.5 cm; base obtuse or broadly cuneate; margin revolute; apex obtuse or subrounded, apiculate; abaxial surface white, densely pale chocolate brown to rufous woolly, hairs ± crispate dendroid; adaxial surface glabrous except for groove of midrib, midrib and lateral veins prominent abaxially. Inflorescence racemose-umbellate, 5- or 10-flowered; rachis 3–10 mm, woolly-tomentose. Pedicel 1.5–2 cm, densely whitish to tawny woolly-tomentose; calyx 1–2 mm, tomentose or glabrescent; corolla broadly campanulate, sulfur-yellow, with red spots, 3.5–4.5 cm; lobes 5, rounded, emarginate; stamens 10, unequal, 1.5–2.6 cm, filaments pubescent at base; ovary 5-lobed, ca. 6 mm, densely tawny-tomentose; style ca. 2.6 cm, glabrous; stigma lobulate. Capsule elongate-cylindric, slightly curved, 15–25 × 4–8 mm, ± tomentose. Fl. May, fr. Aug.

Coniferous forests, *Rhododendron* thickets, mountain slopes; 3100–4400 m. SE Xizang [Bhutan, Sikkim].

*Rhododendron luciferum* may be a distinct species, differing in the shape of the leaves and their loose, very thick, rufous indumentum. Moreover, the taxon has a more easterly distribution. The largely Bhutanese *R. flinckii* may also be a distinct species, differing in the red, more velutinous leaf indumentum.

**399. *Rhododendron tsariense*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 232. 1937.

白钟杜鹃 bai zhong du juan

• Coniferous forests, *Rhododendron* thickets, mountain slopes; 2100–4000 m. SW Sichuan, SE Xizang, NW Yunnan.

Perhaps var. *griseum* should be maintained, but at subspecific rank on account of the different leaf indumentum and the more westerly distribution than typical *Rhododendron uvariifolium*.

Shrubs, 1–3 m tall; young shoots densely pale yellow woolly-tomentose. Leaf blade thickly leathery, elliptic-oblong to obovate, 2.2–6.2 × 1–3 cm; base rounded or subcordate; margin slightly revolute; apex obtuse or shortly acuminate; abaxial surface densely rufous woolly, hairs branched; adaxial surface slightly rugulose, glabrous except for ± tomentose groove of midrib, midrib and lateral veins prominent abaxially. Inflorescence racemose-umbellate, 3–5-flowered; rachis 3–4 mm. Pedicel ca. 1 cm, densely tomentose; calyx 1–2 mm, tomentose; corolla campanulate, white or pink, with red spots, 3–3.5 cm, lobes 5; stamens 10, unequal, 1.5–2 cm, filaments pubescent at base; ovary ovoid, 5-lobed, 4–5 mm, densely tomentose; style longer than stamens, glabrous; stigma slightly expanded. Capsule cylindrical, 15–25 × 4–5 mm densely tomentose. Fl. Jun, fr. Aug.

Mixed forests, *Rhododendron* thickets, stony hillsides, rock ledges; 3200–4500 m. S Xizang [E Bhutan, NE India].

The following two varieties may be distinguished by the indumentum, especially on the adaxial surface of the leaf blade. In cultivation the two varieties are clearly differentiated.

- 1a. Leaf blade obovate, elliptic, or oblong-elliptic, indumentum thin, felted, brown to rufous, especially on adaxial surface ..... 399a. var. *tsariense*
- 1b. Leaf blade ovate to orbicular, indumentum thick, woolly, fawn to whitish, especially on adaxial surface ..... 399b. var. *trimoense*

**399a. *Rhododendron tsariense* var. *tsariense***

白钟杜鹃(原变种) bai zhong du juan (yuan bian zhong)

Leaf blade obovate, elliptic, or oblong-elliptic, indumentum thin, felted, brown to rufous, especially on adaxial surface. Fl. Jun.

Mixed forests, rock ledges; 3200–4500 m. S Xizang [E Bhutan, NE India].

**399b. *Rhododendron tsariense* var. *trimoense*** Davidian, *Rhododendron Spec.* 2: 308. 1989.

仿钟杜鹃 fang zhong du juan

Leaf blade ovate to orbicular, indumentum thick, woolly, fawn to whitish, especially on adaxial surface. Fl. May.

• Mixed forests, *Rhododendron* thickets, stony hillsides; 3400–4300 m. S Xizang.

**400. *Rhododendron lanatoides*** D.F. Chamberlain, *Notes Roy. Bot. Gard. Edinburgh* 39: 478. 1982.

淡钟杜鹃 dan zhong du juan

Shrubs, 2–4 m tall; young shoots densely gray-white tomentose. Petiole 10–15 mm, densely gray-white to pale brown tomentose; leaf blade leathery, lanceolate to oblong, 9–11 × 2.1–2.7 cm; base cuneate; apex acuminate; abaxial surface fawn to pale brown densely woolly, hairs ± straight, dendroid; adaxial surface glabrous except for groove of midrib towards base; midrib prominent abaxially, grooved adaxially; lateral veins concealed. Inflorescence compact, umbellate, 10–15-flowered, rachis 7–10 mm. Pedicel 0.7–1.5 cm, densely pale brown woolly-tomentose; calyx ca. 1 mm, sparsely tomentose; corolla campanulate, white flushed pink, with a few red spots on upper lobes, 3.5–4 cm, lobes 5; stamens 10, unequal, 1.5–2.5 cm, filaments white-puberulent at base; ovary ovoid, ca. 5 mm, densely

brown-tomentose; style 2.2–2.5 cm, glabrous; stigma capitate, slightly lobulate. Fl. May.

• Rocky slopes; 3200–3700 m. SE Xizang.

**401. *Rhododendron circinnatum*** Cowan & Kingdon Ward, *Notes Roy. Bot. Gard. Edinburgh* 19: 179. 1936.

卷毛杜鹃 juan mao du juan

Shrubs or small trees, 7–8 m tall; branchlets torquate, 7–8 mm in diam.; young shoots densely pale yellow to gray-yellow tomentose. Petiole stout, 20–30 mm, densely grayish tomentose; leaf blade thickly leathery, elliptic-lanceolate to narrowly oblong, 10–14 × 3–4 cm; base obtuse or subrounded; apex obtuse or acute and apiculate; abaxial surface densely, continuously, yellowish brown woolly, hairs crispate-branched; adaxial surface glabrous except in midrib groove which retains vestiges of hairs; midrib and lateral veins prominent abaxially. Inflorescence umbellate, ca. 12-flowered; rachis ca. 10 mm. Pedicel ca. 2 cm, densely floccose and glandular; calyx ca. 1 mm, densely glandular and floccose, margin ciliate-glandular; corolla tubular-campanulate, 2.5–3 cm; lobes 5, ca. 1 × 1 cm; stamens 10, unequal, 1.5–2.5 cm, filaments pubescent at base; ovary ca. 1 × 4 mm, densely long-glandular-hairy and villous at base; style ± equal to corolla, glabrous; stigma discoid. Fl. Jun.

• *Rhododendron* thickets, mountains; 4300–4600 m. S Xizang.

**17. *Rhododendron* subsect. *Campanulata*** (Tagg) Sleumer, *Bot. Jahrb. Syst.* 74: 550. 1949.

钟花杜鹃亚组 zhong hua du juan ya zu

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

*Rhododendron* ser. *Campanulata* Tagg in J. B. Stevenson, *Sp. Rhodod.* 175. 1930 [“*Campanulatum*”].

Shrubs or small trees; young shoots hairy or glabrous. Leaf blade leathery, broadly elliptic to elliptic; abaxial surface with felt or granular indumentum; adaxial surface glabrous when mature. Inflorescence terminal, lax, 5–12-flowered, rachis 1–2.5 cm. Calyx minute, 5-lobed; corolla broadly campanulate, 5-lobed, whitish, pale rose or lilac-purple; stamens 10; ovary glabrous. Capsule cylindrical, slightly curved.

Three species: Bhutan, China, India, Kashmir, Nepal, Sikkim; three species (one endemic) in China.

- 1a. Young shoots pilose; calyx densely glandular ..... 404. *R. gammanense*
- 1b. Young shoots glabrous or floccose; calyx glabrous or floccose.
  - 2a. Abaxial surface of leaves fulvous to rufous, with felted continuous indumentum of branched hairs ..... 402. *R. campanulatum*
  - 2b. Abaxial surface of leaves brown, with granular discontinuous indumentum of fasciculate hairs or ± glabrous ..... 403. *R. wallichii*

**402. *Rhododendron campanulatum*** D. Don, *Mem. Wern. Nat. Hist. Soc.* 3: 410. 1821.

钟花杜鹃 zhong hua du juan

Shrubs, 1–4.5 m tall; young shoots ca. 5 mm in diam., glabrous. Petiole 15–20 mm, initially tomentose, later glabrescent; leaf blade leathery, broadly elliptic to oblong-elliptic, 5–15 × 3–6 cm; base rounded, obtuse or semicordate; apex obtuse or rounded, mucronate; abaxial surface yellowish, fulvous, rust-brown or rust-yellow, indumentum thin or thickly felted; adaxial surface with or without metallic luster when young. Inflorescence racemose-umbellate, 8–12-flowered; rachis 20–30 mm. Pedicel 1.5–3.5 cm, glabrous; calyx 1–2 mm, glabrous; corolla broadly campanulate, white to pale rose or lilac to purple, upper

interior ± purple-spotted, 3.5–4 cm, lobes 5; stamens 10, unequal, filaments pubescent at base; ovary ca. 7 mm, glabrous; style ca. 2.8 cm, glabrous, stigma slightly lobulate. Capsule slightly curved, 20–30 × 4–5 mm. Fl. May–Jun, fr. Jul–Sep.

Forests, thickets, mountain slopes; 3100–4300 m. S Xizang [Bhutan, N India, Kashmir, Nepal, Sikkim].

- 1a. Leaf blade 7–15 cm; adaxial surface without metallic luster when young; corolla whitish or pale rose or lilac ..... 402a. subsp. *campanulatum*
- 1b. Leaf blade 5–9 cm; adaxial surface with metallic luster when young; corolla lilac or purple ..... 402b. subsp. *aeruginosum*

**402a. *Rhododendron campanulatum* subsp. *campanulatum***

钟花杜鹃(原亚种) zhong hua du juan (yuan ya zhong)

Leaf blade 7–15 × 3–6 cm, 1.8–2.5 × as long as broad; abaxial surface fulvous or yellowish, indumentum thin, felted; adaxial surface without metallic luster when young. Corolla whitish or pale rose or lilac. Fl. May–Jun, fr. Jul–Sep.

*Rhododendron* thickets, mountain slopes; 3100–4200 m. S Xizang [Bhutan, N India, Kashmir, Nepal, Sikkim].

**402b. *Rhododendron campanulatum* subsp. *aeruginosum*** (J. D. Hooker) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 329. 1979.

铜叶钟花杜鹃 tong ye zhong hua du juan

*Rhododendron aeruginosum* J. D. Hooker, Rhododendr. Sikkim-Himalaya 3: t. 22. 1851; *R. campanulatum* var. *aeruginosum* (J. D. Hooker) Cowan & Davidian.

Leaf blade 5–9 × 3–3.5 cm; abaxial surface rust-yellow, indumentum thick, felted; adaxial surface with metallic luster when young. Corolla lilac or purple. Fl. Jun.

Forests, thickets, alpine slopes; 3700–4300 m. S Xizang [Bhutan, Nepal, Sikkim].

It is probable that subsp. *aeruginosum* merits specific rank, as originally described. There is a form intermediate between *R. aeruginosum* and typical *R. campanulatum* in W Bhutan, E Nepal, and perhaps S Xizang that shares the glaucous leaves of *R. aeruginosum* but has pale flowers like those of *R. campanulatum*. The status of this entity requires further research.

**403. *Rhododendron wallichii*** J. D. Hooker, Rhododendr. Sikkim-Himalaya 1: t. 5. 1849.

簇毛杜鹃 cu mao du juan

*Rhododendron campanulatum* D. Don var. *wallichii* (J. D. Hooker) Hooker, Bot. Mag. 82: t. 4928. 1856; *R. heftii* Davidian.

Shrubs 2–4 m tall; young shoots ca. 5 mm in diam., glabrous or floccose. Petiole often reddish, 10–15 mm, glabrous or sometimes tomentose; leaf blade leathery, elliptic to oblong-

**18. *Rhododendron* subsect. *Griersoniana*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 337. 1979.

朱红大杜鹃亚组 zhu hong da du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

Small shrubs; young shoots densely glandular-setulose and woolly-tomentose; bud scales long, linear-cuspidate. Leaf blade leathery, elliptic; abaxial surface densely white- or brown-tomentose. Inflorescence lax, 5–12-flowered; calyx minute, ca. 1 mm; corolla tubular or funnel-campanulate, deep rose to scarlet, outer surface of tube densely tomentose; stamens 10; filaments pubescent at base; ovary densely glandular and tomentose; style glabrous.

One species: China, Myanmar.

**405. *Rhododendron griersonianum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 69. 1919.

朱红大杜鹃 zhu hong da du juan

Shrubs, ca. 1.3 m tall; bark rough, branches straight, ca. 4 mm in diam. below inflorescence; young shoots glandular-setu-

lose and woolly-tomentose. Petiole purple, 10–25 mm, glandular-setulose and tomentose; leaf blade leathery, narrowly elliptic, or lanceolate, 7.5–14 × 2–3.5 cm; base obtuse; margin revolute; apex acute or acuminate; abaxial surface densely whitish or pale brown woolly-tomentose, midrib glandular and tomentose; adaxial surface dull green, glabrous or glabrescent

obovate, 7–12 × 2.5–5 cm; base rounded or cordate; margin slightly revolute; apex obtuse or rounded, mucronate; abaxial surface glabrous or brown to ferruginous, indumentum granular, discontinuous, ± detersile, hairs fasciculate. Inflorescence racemose-umbellate, 5–8-flowered; rachis ca. 20 mm, hairy or glabrous. Pedicel 0.1–0.25 cm, glabrous or floccose; calyx lobes 0.5–2 mm, rounded or triangular, glabrous or floccose; corolla broadly campanulate, lilac-purple, purplish red or whitish, ± deeply rose-spotted, 3.5–5 cm, lobes 5; stamens 10, unequal; filaments pubescent at base; ovary 5–7 mm, 5–6-locular, glabrous, rarely with a few pubescent hairs; style glabrous; stigma lobed. Capsule slightly curved, 15–30 × 5–7 mm, glabrous. Fl. May–Jun, fr. Jul–Sep.

Mixed forests, mountain slopes; 3000–4300 m. S Xizang [Bhutan, NE India (Darjiling), E Nepal, Sikkim].

**404. *Rhododendron gannanense*** Z. C. Feng & X. G. Sun, Bull. Bot. Res., Harbin 12: 145. 1992.

甘南杜鹃 gan nan du juan

Shrubs or trees, 3–5 m tall; young shoots pilose. Petiole 1–2 cm, sparsely pilose or glabrous; leaf blade leathery, elliptic to elliptic-oblong, 6.5–12 × 2.5–4.5 cm; base rounded or truncate; margin revolute; apex obtuse, mucronate; abaxial surface densely ferruginous floccose; adaxial surface green, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 12–18-paired. Inflorescence an umbellate raceme, 6–10-flowered; rachis 5–10 mm. Pedicel 0.8–1.5 cm, glandular and pilose; calyx minute, with an undulate margin, densely glandular; corolla broadly campanulate, pink, with purple flecks within, 2–3 cm, lobes 5; stamens 10, unequal, filaments glabrous; ovary conoid, glabrous; style as long as corolla, glabrous. Capsule cylindrical, 13–15 mm, glabrous.

● *Abies* forests; 2800–3000 m. S Gansu (Zhugqu).

This species was diagnosed by the original authors as differing from *Rhododendron wallichii* in having a short inflorescence rachis, glandular pedicel and calyx, shorter, pink corolla (2–3 cm), and glabrous filaments. The present authors have seen no material and are therefore uncertain of its true affinities, although from the protologue it appears perfectly distinct from *R. wallichii*.

at maturity, midrib glandular-setose towards base; midrib raised abaxially, grooved adaxially; lateral veins 12–18-paired. Inflorescence 5–12-flowered; rachis 10–30 mm, densely tomentose and glandular-setulose. Pedicel 1.5–3 cm, tomentose, glandular-setulose; calyx 2–3 mm, tomentose and glandular; corolla tubular, funnelform or funnel-campanulate, deep rose-crimson to scarlet, 5–7 cm, inner surface puberulent, outer surface densely

hairy; lobes 5; stamens 10, 2.8–3.5 cm, filaments puberulent in lower two-thirds; ovary conoid, ca. 6 mm, densely dendroid-hairy, glandular; style glandular at base. Capsule cylindrical, ca. 23 × 8–9 mm, persistently tomentose. Fl. May–Jun, fr. Mar of next year.

Mixed forests, thickets; 1600–2700 m. W Yunnan [Myanmar].

**19. Rhododendron** subsect. **Parishia** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 548. 1949.

星毛杜鹃亚组 *xing mao du juan ya zu*

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Parishia* Tagg in J. B. Stevenson, Sp. Rhodod. 332. 1930 [*“Parishii”*].

Shrubs or small trees; young shoots stellate-tomentose, sometimes also glandular-setose. Leaf blade large, subleathery, elliptic to oblong obovate-elliptic; apex obtuse, rounded, rarely acuminate; abaxial surface glabrescent or thinly stellate-tomentose, especially on the midrib when young. Inflorescence 5–15-flowered. Calyx usually 2–5 mm (10–20 mm in *R. schistocalyx*); corolla tubular-campanulate, 5-lobed, fleshy, crimson, red or scarlet, occasionally yellow, mostly without flecks, with 5 conspicuous nectar pouches; stamens 10; ovary densely tomentose or glandular-hairy; style stellate-tomentose and glandular at base or to tip.

Eight species; China, India, Myanmar, Vietnam; seven species (five endemic) in China.

- 1a. Calyx 10–20 mm, irregularly lobed; inflorescence rachis 5–8 mm, stellate-tomentose ..... 410. *R. schistocalyx*
- 1b. Calyx not exceeding 5 mm; inflorescence rachis 5–30 mm.
  - 2a. Shoots and petiole glandular-setose when young.
    - 3a. Leaf blade obovate-elliptic or oblong-elliptic, 3.5–9(–10)cm wide, apex obtuse to rounded, abaxial surface stellate-tomentose when young; rachis ca. 30 mm ..... 406. *R. kyawii*
    - 3b. Leaf blade elliptic-lanceolate, 2–4 cm wide, apex acuminate or caudate, abaxial surface usually glabrous except for tomentose midrib; rachis 5–10 mm.
      - 4a. Leaf apex caudate; lateral veins obscure, midrib hairs stellate; inflorescence 10–12-flowered ..... 411. *R. urophyllum*
      - 4b. Leaf apex not caudate; lateral veins ± prominent, midrib hairs folioliferous; inflorescence 6–10-flowered ..... 412. *R. venator*
  - 2b. Shoots and petiole without glandular setae.
    - 5a. Pedicels glandular-hairy; leaves 4–11 cm; calyx ca. 1.5 mm, margin glandular-ciliate ..... 409. *R. huidongense*
    - 5b. Pedicels stellate-tomentose; leaves 8.5–20 cm; calyx 2–5 mm, margin glabrous.
      - 6a. Corolla deep rose to scarlet; calyx 4–5 mm ..... 407. *R. facetum*
      - 6b. Corolla yellow; calyx 2–3 mm ..... 408. *R. flavoflorum*

**406. Rhododendron kyawii** Lace & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 216. 1914 [*“kyawi”*].

星毛杜鹃 *xing mao du juan*

*Rhododendron agapetum* I. B. Balfour & Kingdon Ward; *R. prophantum* I. B. Balfour & Forrest.

Shrubs, 5–10 m tall; branchlets stout; young shoots stellate-tomentose and glandular-setose, glabrescent. Petiole cylindrical, 15–45 mm, stellate-tomentose and glandular-hairy, finally glabrous; leaf blade thinly leathery, oblong-elliptic to obovate-elliptic, 8–22 × 3.5–9(–10) cm; base broadly cuneate to rounded; apex obtuse or cuspidate; both surfaces tomentose when young, persistent only abaxially, hairs stellate; midrib conspicuously raised abaxially, grooved adaxially; lateral veins 15–16-paired. Inflorescence racemose, 10–15-flowered; rachis 25–40 mm, stellate-tomentose. Pedicel 1.5–3 cm, densely glandular-setose and sparsely floccose; calyx red, cupular; lobes 5, 2–5 mm, irregular; corolla tubular-campanulate, fleshy, bright crimson to scarlet, without flecks, 4–5.5 cm, with 5 more deeply colored basal nectar pouches, outer surface sparsely glandular-setose; lobes 5, suborbicular, 1.5–2 × ca. 2 cm; stamens

10, unequal, 3–4 cm, filaments crimson, puberulent in lower half; ovary cylindrical, 5–7 × ca. 3 mm, 6-locular, stellate-tomentose and glandular-hairy; style 3.5–4.5 cm, with same indumentum in lower half, or extending to tip, stigma capitate. Capsule cylindrical, slightly curved, 20–25 × ca. 6 mm. Fl. Jun, fr. Sep–Oct.

Mixed forests; 2000–3000 m. W Yunnan [NE Myanmar].

**407. Rhododendron facetum** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 10: 104. 1917.

绵毛房杜鹃 *mian mao fang du juan*

*Rhododendron eriogynum* I. B. Balfour & W. W. Smith.

Shrubs or small trees, 3–7 m tall; branchlets stout; young shoots white to tawny stellate-tomentose, glabrescent. Petiole cylindrical, grooved adaxially, 10–20 mm, stellate-tomentose, glabrescent; leaf blade thinly leathery, oblong-elliptic to obovate-elliptic, 8.5–20 × 3–6 cm; base cuneate or rounded; margin slightly recurved; apex obtuse or rounded, apiculate; both surfaces sparsely rufous stellate-hairy at first, glabrous by maturity; midrib slightly grooved adaxially; lateral veins 16–20-

paired, obscure on both surfaces. Inflorescence racemose-umbellate, 1–12-flowered; rachis 10–15 mm, stellate-tomentose, quickly glabrescent; calyx cupular; lobes 5, 4–5 mm, unequal, broadly rounded, pubescent outside; corolla tubular-campanulate, fleshy, scarlet, with deeper colored spots, 3.5–4.5 cm, with 5 nectar pouches, gibbous at the base, lobes 5, ca. 1 × 1.5–2 cm, outer surface sparingly floccose-tomentose, emarginate; stamens 10, unequal, 2–3 cm; filaments puberulent on lower half; ovary ovoid-conoidal, 5–6 × ca. 4 mm, densely stellate-tomentose; style 2.5–3 cm, stellate-hairy, glandular to the tip, stigma small. Capsule cylindrical, ca. 20 × 8 mm, densely tomentose. Fl. May–Jun, fr. Oct–Nov.

Mixed forests; 2100–3600 m. W Yunnan [NE Myanmar, N Vietnam].

**408. *Rhododendron flaviflorum*** T. L. Ming, Acta Bot. Yunnan. 6: 153. 1984.

泸水杜鹃 lu shui du juan

Small trees, ca. 3 m tall; older branchlets glabrous; branchlets stout; young shoots stellate-tomentose. Petiole cylindrical, slightly grooved adaxially, 10–15 mm; leaf blade leathery, ovate-elliptic to elliptic, broadest above middle of blade, 9.5–12 × 3–4 cm; base cuneate; margin recurved; apex obtuse or cuspidate; both surfaces glabrous; abaxial surface pale tawny; adaxial surface green; midrib conspicuously raised abaxially, flat adaxially; lateral veins 16–19-paired, obscure on both surfaces. Inflorescence racemose-umbellate, 10–12-flowered; rachis ca. 15 mm, pubescent. Pedicel stout, 10–12 cm, yellowish stellate-tomentose; calyx cupular; lobes 5, 2–3 cm, stellate-tomentose, glabrous inside, margin ciliate; corolla tubular-campanulate, yellow, without flecks, 3.5–4 cm, lobes 5, suborbicular, ca. 1 × 1.5 cm, emarginate; stamens 10, 2–3 cm, filaments pubescent at base; ovary ovoid, ca. 7 mm, yellowish tomentose; style 3–3.5 cm, stellate-tomentose to tip, stigma small. Capsule not known. Fl. Jul.

• Mixed forests; ca. 2700 m. W Yunnan.

This very rare species has a close affinity with *Rhododendron facetum*, but differs in the yellowish corolla. The apparent earlier homonym "*Rhododendron flaviflorum* Elmer" (Merrill, Enum. Philipp. Fl. Pl. 3: 244. 1923) was cited as a synonym of *R. leyense* Merrill and was therefore not validly published under Art. 34.1(c) of the Saint Louis Code.

**409. *Rhododendron huidongense*** T. L. Ming, Acta Bot. Yunnan. 3: 115. 1981.

会东杜鹃 hui dong du juan

Shrubs, 2–5 m tall; branches more than one year old grayish green or pale brown, glabrous; branchlets stout; young shoots ca. 4 mm in diam., yellowish green, puberulent. Petiole slender, cylindrical, 8–20 mm, stellate-tomentose and glandular-hairy when young, glabrescent; leaf blade thinly leathery, ovate-lanceolate or ovate-elliptic, 4–11 × 2–3 cm; base ± rounded; margin recurved; apex acuminate or cuspidate, apiculate; abaxial surface pale green, glabrous; adaxial surface flat, deep green, glabrous; midrib conspicuously raised abaxially, flat, impressed adaxially; lateral veins 12–15-paired, obscure on both surfaces.

Inflorescence racemose-umbellate, 5–7(–9)-flowered; rachis 5–11 mm, brownish puberulent. Pedicel 5–11 cm, glandular-hairy; calyx cupular; lobes 5, ca. 1.5 mm, outer surface glabrous, margin ciliolate; corolla campanulate, red, 4–4.5 cm; lobes suborbicular, ca. 1.5 × 2 cm; stamens 10, unequal, 2.5–3.5 cm, filaments glabrous; ovary ovoid, ca. 5 mm, densely brown-tomentose; style 3–3.5 cm, stellate-tomentose to tip, stigma capitate. Capsule not known. Fl. May–Jun.

• Mixed forests, evergreen broad-leaved forests, mountain slopes; 2800–3200 m. SW Sichuan.

**410. *Rhododendron schistocalyx*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 58. 1920.

裂萼杜鹃 lie e du juan

Shrubs, 5–7 m tall; branchlets slender, ca. 4 mm in diam. below inflorescence, stellate-tomentose, glabrescent. Petiole cylindrical, 10–20 mm, stellate-tomentose, glabrescent; leaf blade thinly leathery, oblong-elliptic to oblanceolate, 10–16 × 3–5 cm; base rounded or cuneate; apex obtuse or rounded, apiculate; abaxial surface persistently tomentose towards base, especially near prominent midrib, hairs stellate; adaxial surface green, glabrous at maturity; midrib grooved adaxially; lateral veins 14–16-paired, flat on both surfaces. Inflorescence racemose-umbellate, 5- or 6-flowered; rachis conical, 5–8 mm, stellate-tomentose. Pedicel 1–1.5 cm, stellate-tomentose; calyx reddish, cupular, membranous; lobes 4 or 5, 1–2 cm, irregular, glabrous, margin ragged or fimbriate; corolla tubular-campanulate crimson, 4–5 cm, with 5 nectar pouches; lobes 5, rounded, ca. 1.2 × 1.6 cm, emarginate; stamens 10, unequal, 2–3 cm, filaments pubescent at base; ovary cylindrical-conoid, ca. 5 × 3 mm, densely stellate-tomentose; style 3–3.5 cm, lower half stellate-tomentose, stigma small. Capsule cylindrical, curved, ca. 15 mm, with brownish hairs. Fl. Apr.

• *Rhododendron* thickets; 2700–3300 m. SW Yunnan.

**411. *Rhododendron urophyllum*** W. P. Fang, Acta Phytotax. Sin. 21: 467. 1983.

尾叶杜鹃 wei ye du juan

Shrubs, 3–8 m tall; branchlets slender, ca. 3 mm in diam. below inflorescence, glandular-setose, glabrescent. Petiole cylindrical, 10–20 mm, slightly stellate-tomentose; leaf blade thickly leathery, elliptic-lanceolate to oblanceolate, broadest above the middle, 8–11 × 1.7–3 cm; base broadly cuneate or rounded; apex acuminate, cuspidate; abaxial surface yellowish green, thinly stellate-tomentose only on veins; adaxial surface green, glabrous; midrib prominently raised abaxially, grooved adaxially; lateral veins obscure-paired. Inflorescence racemose-umbellate, 10–12-flowered; rachis ca. 10 mm, yellowish puberulent. Pedicel 0.5–1 cm, glandular-setose; calyx lobes 5, ca. 1 mm, triangular-ovate, glandular-setose; corolla campanulate, crimson, without flecks, 3.5–4 cm, with 5 deep-colored basal nectar pouches; lobes 5, suborbicular, ca. 1.2 × 1.5 cm, emarginate; stamens 10, unequal, 1–2 cm, filaments glabrous; ovary cylindrical, ca. 5 mm; style ca. 2 cm, glabrous, stigma slightly swelling. Capsule not known. Fl. Mar–May.

• Evergreen broad-leaved forests; 1200–1600 m. SW Sichuan.

**412. *Rhododendron venator*** Tagg ex L. Rothschild, Suppl. *Rhododendron* Assoc. Year Book 1933: 102. 1933.

毛柱杜鹃 mao zhu du juan

Shrubs, 2–3 m tall; shoots 3–5 mm in diam. below inflorescence; young shoots glandular-setose and whitish floccose, soon glabrescent. Petiole 10–15 mm, glandular-setose and stellate-tomentose; leaf blade leathery, elliptic-lanceolate to oblong-lanceolate, 7–15 × 2–4 cm; base rounded; margin recurved; apex acuminate, apiculate; abaxial surface brownish, glabrous except for tomentose midrib, hairs folioliferous; adaxial surface green, glabrous; midrib conspicuously raised grooved; lateral veins 15–18-paired, slightly prominent abaxially. Inflorescence racemose-umbellate, 6–10-flowered; rachis 6–10 mm, fawn to rusty tomentose. Pedicel stout, 1–1.5 cm, stellate-tomentose and

glandular-setulose; calyx lobes 5, small, broadly rounded, densely tomentose and glandular at base, margin glandular-ciliate; corolla tubular-campanulate, fleshy, crimson, 3.5–4 cm, with 5 black-crimson nectar-pouches at base; lobes 5, orbicular, 1.2–1.6 cm; stamens 10, unequal, 2–3 cm, filaments glabrous; ovary cylindric, ca. 6 mm, densely tomentose; style 2–2.5 cm, stellate-tomentose at base, stigma slightly swollen. Capsule slightly curved, 15–20 mm. Fl. Apr–May.

- Forests, rocky valley slopes; 2400–2800 m. SE Xizang.

This distinctive species differs from the remaining members of this subsection in the indumentum, which is composed of folioliferous hairs, a feature that suggests a distant affinity with *Rhododendron* subsect. *Maculifera*. In the past it has been placed in the unispecific *R.* subsect. *Venatora*.

**20. *Rhododendron* subsect. *Barbata*** (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 544. 1949.

硬刺杜鹃亚组 ying ci du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Barbata* Tagg in J. B. Stevenson, Sp. *Rhodod.* 126. 1930 [*“Barbatum”*].

Shrubs or small trees; bark smooth, peeling; young shoots usually stoutly setose, or glandular-hairy (setae sometimes absent in *R. barbatum*). Leaf blade elliptic, oblong to broadly obovate, glabrous or with abaxial surface coarsely setose to glandular-hairy at maturity, sometimes with thin continuous or discontinuous layer of dendroid hairs. Inflorescence dense, 10–20-flowered; rachis 5–7(–10)mm. Calyx small to large, usually colored, to 15 mm, lobes rounded; corolla tubular-campanulate, 5-lobed, fleshy, deep red to rarely rose, with nectar pouches at base; stamens (8–)10; filaments glabrous; ovary glabrous to densely glandular-hairy, with or without brown branched hairs, and glands; style glabrous.

Five species: Bhutan, China, India, Nepal, Myanmar, Sikkim; four species (one endemic) in China.

- 1a. Leaf blade abaxially glabrous except for midrib which is setose near base; pedicel glabrous ..... 413. *R. barbatum*
- 1b. Leaf blade abaxially glandular-hairy or ± tomentose; pedicel glandular-hairy.
  - 2a. Pedicel sparsely glandular; leaf blade broadly ovate or subobovate, abaxial surface sparsely glandular-hairy ..... 414. *R. exasperatum*
  - 2b. Pedicel densely long glandular-hairy or glandular-setose; leaf blade elliptic to oblong-lanceolate or obovate, abaxial surface ± tomentose.
    - 3a. Leaf blade elliptic to oblong-lanceolate, 10.5–12.3 × 3.3–4 cm; style ca. 1.6 cm ..... 415. *R. argipeplum*
    - 3b. Leaf blade broadly elliptic or oblong-elliptic to obovate, 8–10.5(–16.5) × (3–)3.7–4.5(–9) cm; style ca. 2.1 cm ..... 416. *R. erosum*

**413. *Rhododendron barbatum*** Wallich ex G. Don, Gen. Hist. 3: 844. 1834.

硬刺杜鹃 ying ci du juan

*Rhododendron lancifolium* J. D. Hooker (1849), not Moench (1794).

Large shrubs or small trees, 1.5–8 m tall; old branches grayish brown, glabrous; young branches setose, rarely glabrous. Petiole 12–22 mm, sparsely blackish brown glandular-setose or glabrous; leaf blade leathery, oblong to obovate-oblong, 9.8–18 × 3.5–5.8 cm; base truncate to rounded; margin reflexed; apex acuminate; abaxial surface whitish green, midrib and base setose, other parts slightly hairy when young; adaxial surface green; midrib raised abaxially, impressed adaxially; lateral veins 17–21-paired. Inflorescence densely umbellate, 10–20-flowered; rachis ca. 5 mm, glabrous. Pedicel 0.5–1.3 cm, glabrous; calyx green flushed red, cupular; lobes 5, 7–15 mm, broadly ovate or obovate-oblong, glabrous or with base hairy;

margin erose; corolla tubular-campanulate, fleshy, deep red to blood-red, 3.1–3.6 × 3–3.6 cm, with 5 deep blackish red nectar pouches at base, glabrous; lobes 5, ± rounded, ca. 1.8 × 1.6–1.8 cm, apex deeply emarginate; stamens 10, unequal, 1.3–2.1 cm, filaments white, glabrous, anthers subelliptic, purplish black, 1.6–2 mm; ovary cone-shaped, ca. 5 mm, densely short-glandular-hairy; style ca. 1.6 cm, glabrous; stigma small, reddish, ca. 1.8 mm wide. Capsule cylindric, ribs obvious, slightly curved, 20–24 mm, with vestigial glandular hairs; calyx persistent; style persistent. Fl. May–Jun, fr. Aug–Sep.

*Abies* forests, *Rhododendron* thickets; 2400–3500 m. S Xizang [Bhutan, India, Nepal, Sikkim].

**414. *Rhododendron exasperatum*** Tagg in J. B. Stevenson, Sp. *Rhodod.* 836. 1930.

粗糙叶杜鹃 cu cao ye du juan

Shrubs or small trees, 2–5 m tall; young shoots ca. 7 mm in diam. below inflorescence, densely glandular-setose. Petiole



short and stout, 10–15 mm, usually setose, occasionally without setae; leaf blade leathery, broadly ovate or subobovate, 10–18 × 4–10 cm; base rounded; margin with caducous setae; apex rounded, acuminate; abaxial surface greenish, sparse brownish glandular-hairy, midrib setose, mainly at base; adaxial surface deep green, nearly smooth, with scattered setae, base of midrib with or without brownish setae; midrib narrow, raised abaxially, impressed adaxially; lateral veins 12–15-paired, slightly raised abaxially, slightly impressed adaxially, net veins inconspicuous. Inflorescence densely umbellate, 10–15-flowered; rachis ca. 5 mm. Pedicel 1(–1.5) cm, slightly glandular; calyx lobes 5, 4–5 mm, subovate, glabrous; corolla tubular-campanulate, fleshy, deep red, 3.5–4.5 × ca. 3.5 cm, with small deep red nectar pouches at base, glabrous inside; lobes 5, slightly unequal, ca. 1 × 1.8 cm, apex emarginate; stamens 10, unequal, 1.3–2.2 cm, filaments glabrous; anthers oblong, brown, 1.6–2 × 1–1.2 mm; ovary broadly cone-shaped, apex truncate, ca. 6 × 3 mm, densely glandular-hairy; style slender, ca. 2.2 cm, glabrous, stigma flattened, truncate, ca. 1 mm wide. Young fruits with dense persistent hair bases; calyx persistent.

*Abies* forests, *Rhododendron* thickets; 3000–3600 m. SE Xizang [India, Myanmar].

**415. *Rhododendron argipeplum*** I. B. Balfour & R. E. Cooper, Notes Roy. Bot. Gard. Edinburgh 9: 213. 1916.

毛枝杜鹃 *mao zhi du juan*

*Rhododendron macrosmithii* Davidian; *R. smithii* Nuttall ex Hooker (1859), not *R. ×smithii* Sweet (1830).

Shrubs or small trees, 2–7.5 m tall; young shoots ca. 4.5 mm in diam. below inflorescence, long-setose. Petiole stout, 10–20 mm, densely glandular-setose; leaf blade leathery, elliptic to oblong-lanceolate, 10.5–12.3 × 3.3–4 cm; base obtuse to rounded; margin reflexed; apex acute, with a sharp point; abaxial surface indumentum continuous, thinly yellowish brown floccose turning whitish later, hairs dendroid; midrib usually with a few bristles at base; adaxial surface moderately bullate, deep green, glabrous; midrib raised abaxially, impressed adaxially; lateral veins 12–17-paired, deeply impressed adaxially. Inflorescence densely umbellate, 10–20-flowered; rachis ca. 5 mm. Pedicel stout, 0.8–1.5 cm, densely glandular-setose; calyx red, fleshy; lobes 5, 5–10 mm, oblong or suborbicular, outside with a few glandular setae; margin glandular-ciliate; corolla

tubular-campanulate, fleshy, deep red, ca. 3.2 × 3.5 cm, with 5 deep red nectar pouches at base, glabrous; lobes 5, rounded, ca. 1 × 1.8 cm, apex emarginate; stamens 8–10, unequal, 1–2 cm; filaments glabrous; anthers obovate, purplish red, 1.8–2 mm; ovary cone-shaped, ca. 4 mm, densely rufous-tomentose and glandular-hairy; style ca. 1.6 cm, glabrous; stigma small, punctiform. Capsule cylindric, straight or slightly curved, ribbed, 20–25 × 4.5–5.5 mm, blackish brown, with vestigial glandular hairs; calyx and style persistent. Fl. May–Jun, fr. Jul–Aug.

Secondary forests on mountain slopes, scrub; 2700–3600 m. S Xizang [Bhutan, NE India, Sikkim].

**416. *Rhododendron erosum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 225. 1937.

嗜蚀杜鹃 *nie shi du juan*

Shrubs or small trees, 4.5–6 m tall; bark grayish brown, flaking; branchlets ca. 4 mm in diam. below inflorescence; young shoots grayish white, densely glandular-hairy. Petiole stout, 7–12(–20) mm, densely brown glandular-setose; leaf blade leathery, broadly elliptic or oblong-elliptic to obovate, 8–10.5(–16.5) × (3–)3.7–4.5(–9) cm; base rounded or shallowly cordate; margin slightly reflexed; apex obtuse or broadly rounded, with small hard point; abaxial surface greenish, yellowish brown floccose-woolly or with gray to yellowish brown wool and glands; adaxial surface markedly bullate, green, brown floccose on base of midrib; midrib raised abaxially, impressed adaxially; lateral veins (10–)15–17-paired, deeply impressed adaxially. Inflorescence umbellate, 12–15-flowered; rachis ca. 15 mm, sparsely yellowish glandular-hairy. Pedicel 0.8–0.9 cm, with long glandular hairs; calyx cup-shaped; lobes 5, 5–5.2 mm, suborbicular, margin glandular-ciliate, ca. 4 mm; corolla tubular-campanulate, deep rose-red, 2.8–3.3 × 3.2–3.8 cm, base with 5 deep red nectar pouches, inner surface of tube white-puberulent; lobes 5, suborbicular, ca. 1.2 cm, apex deeply emarginate; stamens 10, unequal, 1.4–2.3 cm; filaments white, glabrous; anthers obovate, deep brown, ca. 1.3 mm; ovary oblong, ca. 5 mm, densely glandular; style white, ca. 2.1 cm, glabrous; stigma slightly lobed, ca. 1.6 mm wide. Capsule long-cylindric, 15–20 × ca. 6 mm. Fl. Apr–May, fr. Oct.

• Coniferous forests, *Betula* and *Rhododendron* forests and thickets; 3000–3700 m. S Xizang.

**21. *Rhododendron*** subsect. *Neriiflora* (Tagg) Sleumer, Bot. Jahrb. Syst. 74: 545. 1949.

火红杜鹃亚组 *huo hong du juan ya zu*

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* ser. *Neriiflora* Tagg in J. B. Stevenson, Sp. Rhodod. 507. 1930 [“*Neriiflorum*”].

Shrubs, sometimes dwarf and creeping, or small trees; bark smooth; young shoots with a thin or thick woolly, whitish to rufous indumentum composed of rosulate, branched or dendroid hairs, sometimes with setae or glands. Leaf blade elliptic, lanceolate, oblong, ovate, rarely orbicular; abaxial surface glabrous or with continuous, discontinuous, compacted or woolly whitish or brown to rufous indumentum. Inflorescence 1–12(–20)-flowered; rachis 3–10 mm. Calyx minute to well-developed, often colored, 1–6(–20) mm, cupular; corolla tubular-campanulate rarely campanulate, 5-lobed, usually fleshy, white to yellow through various shades of pink to deep carmine, with basal nectar pouches; stamens 10; ovary with or without stipitate-glands or glabrous; style glabrous.

Twenty-seven species: Bhutan, China, India, Myanmar; 27 species (13 endemic) in China.

*Rhododendron ×hillieri* Davidian (Rhododendrons Magnolias Camelias 47. 1974), described from Xizang, is a hybrid between two species in *R.* subsect. *Neriiflora*.

- 1a. Ovary tapering into style.
  - 2a. Abaxial leaf surface glabrous ..... 427. *R. neriiflorum*
  - 2b. Abaxial leaf surface with continuous or discontinuous indumentum.
    - 3a. Abaxial leaf surface with 2-layered indumentum at maturity.
      - 4a. Young shoots, pedicels, petiole and ovary eglandular, densely floccose; upper layer of leaf indumentum lax, lanate ..... 426. *R. albertsenianum*
      - 4b. Young shoots, pedicels, petiole and ovary stipitate-glandular and tomentose; upper layer of leaf indumentum spongy ..... 429. *R. euchroum*
    - 3b. Abaxial leaf surface with 1-layered indumentum at maturity.
      - 5a. Young shoots, pedicels and ovary glandular-setose, tomentose; abaxial leaf surface with continuous white to cinnamon indumentum ..... 430. *R. sperabile*
      - 5b. Young shoots and ovary usually eglandular, abaxial leaf surface with discontinuous reddish brown indumentum.
        - 6a. Leaf blade narrowly elliptic to oblong or elliptic, glaucous, abaxial epidermis papillate; filaments glabrous ..... 431. *R. floccigerum*
        - 6b. Leaf blade oblong-elliptic to oblanceolate, 4.5–8.5 cm, abaxial epidermis epapillate; filaments pubescent at base ..... 432. *R. sperabiloides*
- 1b. Ovary apex truncate.
  - 7a. Abaxial leaf surface with a continuous, thick, 1- or 2-layered rufous or brown to cinnamon (rarely whitish) indumentum.
    - 8a. Adaxial leaf surface markedly rugose.
      - 9a. Leaf blade elliptic to oblong, abaxial surface with 2-layered appressed tomentose indumentum, upper layer fulvous ..... 419. *R. piercei*
      - 9b. Leaf blade broadly obovate to obovate or obovate to elliptic, abaxial surface with 1-layered rufous indumentum.
        - 10a. Young shoots and petiole densely tomentose; leaf blade 4–7.5 cm wide; shrubs or small trees 3–6(–8) m tall ..... 417. *R. mallotum*
        - 10b. Young shoots stellate-setose and glandular-hairy; leaf blade 2–4 cm wide; small, upright shrubs, 2–3 m tall ..... 418. *R. beanianum*
    - 8b. Adaxial leaf surface smooth.
      - 11a. Young shoots densely setulose-glandular; ovary densely stipitate-glandular.
        - 12a. Leaf blade oblong to ovate; petiole tomentose and setulose-glandular; calyx 6–10 mm ..... 420. *R. pocophorum*
        - 12b. Leaf blade obovate; petiole glandular; calyx 3(–7) mm ..... 421. *R. coelicum*
      - 11b. Young shoots eglandular; ovary tomentose, eglandular.
        - 13a. Young shoots glabrous; corolla yellow or orange to red ..... 424. *R. citriniflorum*
        - 13b. Young shoots setulose or tomentose, with or without sparse setulae; corolla white, pink, crimson or purple.
          - 14a. Young shoots setulose; corolla white ..... 422. *R. chionanthum*
          - 14b. Young shoots tomentose; corolla pink, crimson or purple.
            - 15a. Calyx 13–20 mm; pedicel pale brown tomentose ..... 425. *R. catacosmum*
            - 15b. Calyx 3–7 mm; pedicel ferruginous tomentose ..... 423. *R. haematodes*
    - 7b. Abaxial leaf surface glabrous or with discontinuous or continuous indumentum.
      - 16a. Creeping shrubs, 0.2–0.9(–1.5) m; inflorescence 1(or 2)-flowered; leaves obovate to orbicular, 1.3–2.5 × 1.2–1.7 cm ..... 436. *R. forrestii*
      - 16b. Upright or creeping shrubs, 0.1–2 m; inflorescence, (1–)2–6-flowered; leaf shape various.
        - 17a. Shrubs 1–2.5 m, abaxial leaf surface with whitish to cinnamon appressed indumentum.
          - 18a. Abaxial leaf surface with buff to cinnamon indumentum; ovary floccose or stipitate-glandular; filaments puberulent at base ..... 433. *R. microgynum*
          - 18b. Abaxial leaf surface with whitish to gray appressed thin indumentum; ovary eglandular.
            - 19a. Filaments pubescent at base; corolla orange to red; leaves narrowly elliptic, oblanceolate or obovate ..... 434. *R. dichroanthum*
            - 19b. Filaments glabrous; corolla yellow, pink, or red to deep crimson, sometimes bicolored; leaves obovate, broadly elliptic to narrowly oblong ..... 435. *R. sanguineum*
        - 17b. Shrubs often dwarf, 0.2–2 m tall; abaxial leaf surface glabrous or with a discontinuous indumentum.
          - 20a. Branchlets with persistent bud-scales; abaxial leaf surface glabrous.
            - 21a. Pedicels 1.3–3 cm, glandular and with dendroid hairs; leaves obovate to oblanceolate; petiole wide, eglandular ..... 437. *R. aperantum*

- 21b. Pedicels 0.8–1.3 cm, glandular or eglandular; leaves obovate to oblong-obovate; petiole narrow, sometimes glandular and tomentose ..... 438. *R. chamaethomsonii*
- 20b. Branchlets without bud-scales or, if with bud-scales, then abaxial leaf surface puberulent.
- 22a. Corolla pale yellow, white or pink; ovary glabrous or glandular.
- 23a. Leaf blade 5.2–6.4 cm; pedicel 0.6–2 cm; corolla white, rose, or pale yellow, with conspicuous flecks; ovary glandular ..... 439. *R. parmulatum*
- 23b. Leaf blade 1–3.2 cm; pedicel 2–3 cm; corolla pale yellow, without flecks; ovary glabrous ..... 440. *R. trilactorum*
- 22b. Corolla purple, crimson or pale rose; ovary glandular-hairy, often also tomentose.
- 24a. Leaf blade narrowly lanceolate, 7–10 cm; corolla purple ..... 428. *R. bijiangense*
- 24b. Leaf blade elliptic to oblong-obovate, 1.5–6 cm; corolla pink to crimson.
- 25a. Leaf blade oblong or oblong-elliptic, 3–6 × 1.3–2.3 cm, abaxial epidermis pale gray-green, papillate; calyx 3–4 mm ..... 441. *R. temenium*
- 25b. Leaf blade elliptic to oblong-obovate, 1.5–4(–6.2) × 0.5–1.4(–2) cm, abaxial epidermis green, epapillate; calyx ca. 1.5 mm.
- 26a. Filaments puberulent at base; creeping shrubs, 0.05–0.5 m tall; leaf blade elliptic to oblong-obovate, abaxial surface puberulent ..... 442. *R. erastum*
- 26b. Filaments glabrous; shrubs 0.3–1.2(–1.8) m tall; leaf blade long-elliptic or oblong-obovate, abaxial surface with discontinuous indumentum ..... 443. *R. eudoxum*

**417. *Rhododendron mallotum*** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 10: 118. 1917.

羊毛杜鹃 yang mao du juan

*Rhododendron aemulorum* I. B. Balfour.

Shrubs or small trees, evergreen, 3–6(–8) m tall; older branches glabrous; branchlets stout, usually 7–9 mm in diam.; young shoots densely ferruginous-tomentose. Petiole stout, 15–27 mm, densely tomentose; leaf blade leathery, broadly oblanceolate or obovate, 7–14 × 4–7.5 cm; base obtuse; margin revolute; apex rounded, apiculate; abaxial surface densely rufous woolly-tomentose; adaxial surface dark green, rugose, midrib tomentose, otherwise glabrous; lateral veins 10–12-paired, deeply grooved. Inflorescence 7–14-flowered; rachis 10–15 mm, densely tomentose. Pedicel 1–1.3 cm, tomentose; calyx lobes 5, 1.8–3 mm, ferruginous-tomentose; corolla tubular-campanulate, fleshy, crimson, ca. 4 cm, with 5 dark basal nectar pouches, lobes 5; stamens 10, unequal, 2.2–3.2 cm, filaments red at base, glabrous; ovary ovoid, ca. 7 mm, densely rufous-tomentose; style ca. 2.3 cm, glabrous; stigma small. Capsule cylindrical, oblique, slightly curved, 10–20 × 5–6 mm, with a persistent tomentum. Fl. May–Jun, fr. Aug–Oct.

Forests, *Rhododendron* thickets, rocky gullies; 3000–3700 m. W Yunnan [NE Myanmar].

**418. *Rhododendron beanianum*** Cowan, New Fl. & Silva 10: 246. 1938.

刺枝杜鹃 ci zhi du juan

Upright small shrubs, 2–3 m tall; young shoots dendroid stellate-setose and glandular-hairy. Petiole 15–20 mm, brownish setulose-tomentose; leaf blade leathery, obovate to elliptic, 6.3–10 × 2–4 cm; base rounded; margin revolute; apex rounded, apiculate; abaxial surface indumentum 1-layered, fulvous tomentose, hairs dendroid; adaxial surface rugulose, glabrous; midrib grooved adaxially; lateral veins ca. 13-paired, impressed adaxially. Inflorescence 6–10-flowered; rachis ca. 6 mm, glabrous. Pedicel ca. 1.7 cm, densely setulose-tomentose; calyx cupular; lobes 5, 7–9 mm, puberulent outside; corolla tubular-campanulate, carmine to blood-red, ca. 3.9 cm, with 5

dark nectar pouches at base; lobes 5, suborbicular ca. 1.3 × 1.8 cm; stamens 10, unequal, 1.6–2.5 cm, filaments red at base, glabrous; ovary ovoid, ca. 5.5 × 4 mm, densely stellate-tomentose; style ca. 2.4 cm, tomentose at base; stigma capitate. Capsule not known.

Forests, forest margins, thickets, gullies, alpine slopes; 3000–3700 m. SE Xizang [NE India, NE Myanmar].

**419. *Rhododendron piercei*** Davidian, Quart. Bull. Amer. Rhododendron Soc. 30: 211. 1976.

察隅杜鹃 cha yu du juan

*Rhododendron beanianum* Cowan var. *compactum* Cowan.

Straggling shrubs, 1.5–2.5 m tall; young shoots tomentose. Petiole stout, 7–10 mm, tomentose; leaf blade leathery, elliptic to oblong, 4–11 × 2–5.2 cm; base rounded; apex rounded, apiculate; abaxial surface with indumentum 2-layered, upper layer thick, fulvous-tomentose, hairs dendroid, lower layer whitish, thin and appressed, midrib rufous-pubescent; adaxial surface green, rugose, glabrous when mature; midrib prominent abaxially, grooved adaxially; lateral veins 11–13-paired, impressed adaxially. Inflorescence 6–8-flowered; rachis ca. 5 mm. Pedicel 1.2–1.5 cm, tomentose; calyx 3–6 mm, irregular, glabrous; corolla tubular-campanulate fleshy crimson, 2.8–3.6 cm, with 5 darker nectar pouches at base; stamens 10, unequal; ovary densely tomentose. Capsule 14–18 × ca. 4.5 mm.

• Thickets; 3900–4200 m. SE Xizang.

**420. *Rhododendron pocophorum*** I. B. Balfour ex Tagg, Notes Roy. Bot. Gard. Edinburgh 15: 316. 1927.

杯萼杜鹃 bei e du juan

Shrubs, evergreen, 0.6–3 m tall; shoots 5–6 mm in diam. below inflorescence; young shoots glandular-setulose. Petiole stout, 10–15 mm, glandular-hairy and tomentose when young; leaf blade thickly leathery, oblong to obovate, 6.5–14 × 2.5–5.6 cm; base cuneate; apex obtuse, markedly apiculate; abaxial surface indumentum patchy or continuous, thickly rufous tomentose; adaxial surface glaucous, glabrous when mature, midrib

grooved adaxially; lateral veins 12–14-paired, impressed adaxially. Inflorescence dense, 10(–20)-flowered; rachis ca. 5 mm, tomentose. Pedicel 0.7–1.8 cm, densely glandular-hairy and tomentose; calyx cupular; lobes 5, 6–10 mm, unequal, glabrous outside, margin glandular-ciliate; corolla tubular-campanulate, fleshy, light to deep crimson, with deeply colored flecks, 4–5 cm, nectar pouches at base; lobes 5, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary conoid, ca. 7 mm, densely glandular-hairy; style ca. 2.6 cm, glabrous; stigma small. Capsule 20–25 × 7–9 mm. Fl. Jul, fr. Sep.

Forests, thickets, rocky slopes; 3300–4500 m. SE Xizang, NW Yunnan [NE India].

*Rhododendron* ×*hemigyllum* (Tagg & Forrest) D. F. Chamberlain (Notes Roy. Bot. Gard. Edinburgh 37: 333. 1979 [*“hemigyllum”*]); *R. chaetomallum* I. B. Balfour & Forrest var. *hemigyllum* Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 16: 189. 1931), described from Xizang, is a hybrid between *R. pocophorum* and *R. ecleptum*. It is intermediate between the two putative parents, with the broad petiole, leaf blade shape, and setose to stipitate-glandular young shoots and petioles of *R. ecleptum*, but with a leaf indumentum more typical of *R. pocophorum*. Both parents occur at the localities from which this entity has been recorded.

- 1a. Abaxial leaf surface with continuous indumentum ..... 420a. var. *pocophorum*
- 1b. Abaxial leaf surface with a patchy discontinuous indumentum ..... 420b. var. *hemidartum*

**420a. *Rhododendron pocophorum* var. *pocophorum***

杯萼杜鹃(原变种) bei e du juan (yuan bian zhong)

Abaxial leaf surface indumentum continuous. Pedicel 0.7–1.8 cm, densely glandular-hairy and tomentose.

Forests, thickets, rocky slopes; 3300–4500 m. SE Xizang, NW Yunnan [NE India].

**420b. *Rhododendron pocophorum* var. *hemidartum*** (I. B. Balfour ex Tagg) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1978.

腺柄杯萼杜鹃 xian bing bei e du juan

*Rhododendron hemidartum* I. B. Balfour ex Tagg, Notes Roy. Bot. Gard. Edinburgh 15: 314. 1927.

Abaxial leaf surface indumentum patchy, discontinuous. Pedicel glandular-hairy.

- Forests; 3900–4200 m. SE Xizang, NW Yunnan.

**421. *Rhododendron coelicum*** I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 13: 250. 1922.

滇缅杜鹃 dian mian du juan

Small shrubs; branches usually ca. 5.5 mm in diam. below inflorescence. Petiole stout, 10–14 mm, shortly glandular-hairy; leaf blade leathery, obovate, 6–8.5 × 2.8–4.4 cm; base rounded; margin revolute; apex rounded, apiculate ca. 2 mm; abaxial surface thickly rufous tomentose, hairs dendroid; adaxial surface green, glabrous; midrib grooved adaxially, lateral veins 13–15-paired, impressed or obscure. Inflorescence umbellate, 10–12 (–15)-flowered; rachis short, ca. 7 mm, tomentose. Pedicel ca.

1.1 cm, sparsely shortly glandular-hairy, often also with the remnants of juvenile tomentum; calyx cupular, fleshy; lobes 5, 3(–7) mm, rounded, glabrous; corolla tubular-campanulate, crimson, 3.5–4.5 cm, with 5 deep crimson nectar pouches at base; lobes 5, suborbicular, ca. 1.1 × 1.5 cm, emarginate; stamens 10, 1.7–2.9 cm, filaments glabrous; ovary conoid, with truncate apex, ca. 6.5 × 3 mm, glandular-hairy and tomentose; style ca. 2.8 cm, glabrous; stigma small. Capsule not known.

Shaded creeks, cliffs; 2700–4400 m. W Yunnan [Myanmar].

**422. *Rhododendron chionanthum*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 309. 1927.

高山白花杜鹃 gao shan bai hua du juan

Shrubs ca. 0.1 m tall; bark brown, usually falling off in flakes; branches 3–4 mm in diam. below inflorescence, setose; bud scales persistent. Petiole with decurrent wing, 4–10 mm, glabrescent; leaf blade obovate or widely oblanceolate, 4–8.5 × 1.5–3 cm; base cuneate; margin revolute; apex obtuse, apiculate; abaxial surface indumentum discontinuous, rufous; adaxial surface dark green, clearly rugose, glabrescent; midrib grooved adaxially; lateral veins 7–9-paired, impressed adaxially. Inflorescence lax, umbellate, 4–6-flowered, rachis ca. 4 mm, tomentose. Pedicel 1.5–1.8 cm, glandular-setose; calyx lobes 5, 2–3 (–8) mm, elliptic, ciliate; corolla tubular-campanulate, white, 3–3.5 cm, lobes 5, suborbicular, ca. 1.2 × 1.5 cm, emarginate; stamens 10, unequal, 1.5–2 cm, filaments glabrous; ovary ovoid, with truncate apex, ca. 5 mm, rufous-tomentose; style ca. 2 cm, glabrous; stigma capitate, small. Capsule not known. Fl. Jul.

Grasslands, rocky slopes, alpine regions; 3900–4400 m. W Yunnan [NE Myanmar].

**423. *Rhododendron haematodes*** Franchet, Bull. Soc. Bot. France 33: 232. 1886.

似血杜鹃 si xue du juan

Small shrubs, 1.5–3 m tall; bark gray; young shoots densely ferruginous-tomentose to setose; bud scales persistent. Petiole 5–12 mm, tomentose, sometimes also setose; leaf blade leathery, oblong to obovate, 2.7–7.5 × 0.7–3.2 cm; base cuneate, rarely rounded; margin revolute; apex obtuse or rounded, apiculate; abaxial surface with indumentum 2-layered, matted, upper layer fawn to red-brown, lower layer whitish, thin, compacted; adaxial surface dark green, glabrous when mature; midrib grooved adaxially; lateral veins 7–10-paired, impressed. Inflorescence umbellate, 6–8-flowered; rachis ca. 4 mm, tomentose. Pedicel pink, 2–2.5 cm, densely tomentose or setose; calyx minute or cupular; lobes 5, 3–7 mm, irregular, glabrous; corolla tubular-campanulate, fleshy scarlet to deep crimson, 3–4(–5) cm, with 5 deeply colored nectar pouches at base; lobes 5, suborbicular, emarginate; stamens 10, filaments glabrous or puberulous; stigma small. Capsule ca. 10 × 6.5 × 9 mm, densely tomentose. Fl. May–Jun, fr. Aug–Sep.

*Pinus* forests, alpine thickets, valleys; 3100–4000 m. SE Xizang, W Yunnan [NE Myanmar].

- 1a. Petioles and young shoots tomentose, setae slender or lacking ..... 423a. subsp. *haematodes*
- 1b. Petioles and young shoots stoutly setose ..... 423b. subsp. *chaetomallum*

**423a. *Rhododendron haematodes* subsp. *haematodes***

似血杜鹃(原亚种) *si xue du juan* (*yuan ya zhong*)

*Rhododendron haematodes* var. *calycinum* Franchet; *R. haematodes* var. *hypoleucum* Franchet.

Young shoots and petioles tomentose, setae slender or absent.

- Alpine thickets, valleys; 3200–4000 m. W Yunnan.

**423b. *Rhododendron haematodes* subsp. *chaetomallum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 333. 1979.

绢毛杜鹃 *juan mao du juan*

*Rhododendron chaetomallum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 95. 1920; *R. chaetomallum* var. *glaucescens* Tagg & Forrest.

Young shoots and petioles with stout setae.

*Pinus* forests, alpine thickets; 3100–4000 m. SE Xizang, NW Yunnan [NE Myanmar].

**424. *Rhododendron citriniflorum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 35. 1919.

橙黄杜鹃 *cheng huang du juan*

Dwarf shrubs, 0.6–1.2 m tall; bark gray-brown, smooth, usually falling off in flakes; young shoots glabrous; bud scales persistent. Petiole flat, usually winged, 5–10 mm, white-tomentose when young; leaf blade leathery, oblong-obovate, 2.5–6 × 1.5–2 cm; base cuneate; margin revolute; apex obtuse, rounded, apiculate; abaxial surface densely gray-brown tomentose, hairs dendroid; adaxial surface green, glabrous; midrib grooved adaxially; lateral veins 8-paired, impressed. Inflorescence umbellate, 2–6-flowered; rachis ca. 3 mm, tomentose and glandular. Pedicel 1–2.6 cm, eglandular to densely glandular-setose; calyx 2–12 mm, glandular or woolly, glandular-ciliate; corolla tubular-campanulate, yellow or orange to carmine, ca. 3.5 cm, glabrous; lobes 5, ovate, ca. 1.3 × 1.8 cm, emarginate; stamens 10, 2–2.7 cm, filaments pubescent at base; ovary with truncate apex, ca. 5.6 mm; woolly-tomentose and glandular-setose; style ca. 2.4 cm, glabrous; stigma capitate. Capsule 8–12 mm. Fl. Jun–Jul.

- Alpine meadows, cliffs; 3600–5400 m. SE Xizang, NW Yunnan.

Two varieties occur in China; intermediate between them is subsp. *rubens* Cowan (Notes Roy. Bot. Gard. Edinburgh 20: 76. 1940; *R. horaeum* I. B. Balfour & Forrest var. *rubens* (Cowan) Davidian), described from Xizang. *Rhododendron chaetomallum* I. B. Balfour & Forrest var. *xanthanthum* Tagg & Forrest (Notes Roy. Bot. Gard. Edinburgh 15: 308. 1927; *R. xanthanthum* (Tagg & Forrest) D. F. Chamberlain), described from Xizang, is almost certainly a hybrid of *R. citriniflorum*.

- 1a. Corolla yellow; calyx 2–5(–10) mm; ovary and pedicels glandular-hairy ..... 424a. var. *citriniflorum*
- 1b. Corolla orange to carmine; calyx (2–)7–12 mm; ovary and pedicels eglandular ..... 424b. var. *horaeum*

**424a. *Rhododendron citriniflorum* var. *citriniflorum***

橙黄杜鹃(原变种) *cheng huang du juan* (*yuan bian zhong*)

*Rhododendron chlanidotum* I. B. Balfour & Forrest.

Pedicel and ovary glandular-hairy; calyx 2–5(–10) mm; corolla yellow.

- Alpine meadows, cliffs; 3900–5400 m. SE Xizang, NW Yunnan.

**424b. *Rhododendron citriniflorum* var. *horaeum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 332. 1979.

美艳橙黄杜鹃 *mei yan cheng huang du juan*

*Rhododendron horaeum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 264. 1922; *R. citriniflorum* subsp. *aureolum* Cowan; *R. citriniflorum* subsp. *horaeum* (I. B. Balfour & Forrest) Cowan.

Pedicel and ovary eglandular; calyx (2–)7–12 mm; corolla orange to carmine.

- Alpine meadows, cliffs; 3600–4500 m. SE Xizang, NW Yunnan.

**425. *Rhododendron catacosmum*** I. B. Balfour ex Tagg, Notes Roy. Bot. Gard. Edinburgh 15: 307. 1927.

瓣萼杜鹃 *ban e du juan*

Shrubs, 1.2–3 m tall; shoots 6–7 mm in diam. below inflorescence; young shoots brown-tomentose and sparsely setose. Petiole 10–15 mm, tomentose; leaf blade leathery, obovate, 6–9 × 3–5.2 cm; base cuneate; margin revolute; apex rounded, apiculate; abaxial surface with indumentum 2-layered, pale cinnamon, upper layer loosely tomentose, hairs dendroid, lower layer whitish, compacted; adaxial surface dark green, glabrous; midrib grooved adaxially; lateral veins 9–11-paired, impressed. Inflorescence 7–9-flowered; rachis ca. 8 mm, tomentose. Pedicel 2.2–3.5 cm, with same indumentum; calyx cupular, 1.3–2 cm; lobes 5, oblong, ca. 11 × 6 mm, glabrous except for ciliate margin; corolla tubular-campanulate, fleshy, crimson, ca. 4 cm, with 5 deep crimson basal nectar pouches; lobes 5, suborbicular, ca. 1.2 × 1.8 cm, emarginate; stamens 10(–12), 1.5–2 cm, filaments glabrescent; ovary with truncate apex, ca. 5 mm, densely rufous-tomentose; style ca. 1.6 cm, glabrous; stigma small. Capsule oblong, 20–25 × 10–12 mm, rough. Fl. Jun–Jul, fr. Sep–Oct.

- Alpine thickets; 3900–4200 m. SE Xizang, NW Yunnan.

**426. *Rhododendron albertsenianum*** Forrest ex I. B. Balfour, Notes Roy. Bot. Gard. Edinburgh 11: 21. 1919.

亮红杜鹃 *liang hong du juan*

Shrubs 1–3 m tall; young shoots thinly whitish floccose-tomentose, eglandular. Petiole 6–10 mm, whitish tomentose; leaf blade leathery, elliptic, 4–5.5(–9) × 1–2.5 cm; base cuneate, unequal; apex rounded, apiculate; abaxial surface with indumentum 2-layered, continuous, upper layer light brown, woolly, loose; lower layer felted and compacted; adaxial surface green, glabrous; midrib grooved; lateral veins 12–15-paired, impress-

ed. Inflorescence umbellate, 5- or 6-flowered; rachis 2–3 mm, brown-floccose. Pedicel 1(–1.8) cm, with same indumentum; calyx red, cupular, fleshy, 2.5–4 mm, tomentose; corolla tubular-campanulate, bright crimson-rose, ca. 3 cm, glabrous; lobes 5, suborbicular, ca. 1.7 × 2.2 cm; stamens 10, unequal, 2–2.5 cm, filaments glabrous; ovary conoid, tapering into style ca. 5.5 mm, tomentose; style glabrous; stigma small. Capsule cylindric, 8–12 × 4–5 mm, with remnants of indumentum. Fl. Jul, fr. Oct.

• Thickets, mountain slopes; 3200–3300 m. W Yunnan.

**427. *Rhododendron neriiflorum*** Franchet, Bull. Soc. Bot. France 33: 230. 1886.

火红杜鹃 huohong dujuan

Shrubs 1–3 m tall; bark gray-brown, usually falling off in flakes; young shoots 3–4 mm in diam. below inflorescence, whitish tomentose, glabrescent. Petiole purple, 10–15 mm, glabrous when mature or glandular; leaf blade leathery, oblong to obovate, 4–11 × 1.5–3.5 cm; base obtuse; apex obtuse or rounded, apiculate; abaxial surface glaucous, glabrous, epidermis papillate, sometimes markedly so and with strong reticulations; adaxial surface green, smooth, glabrous; midrib prominent abaxially, grooved adaxially; lateral veins 15–17-paired. Inflorescence umbellate, 5–12-flowered; rachis ca. 10 mm, tomentose. Pedicel 1–1.5 cm, sparsely stellate-tomentose; calyx fleshy when well-developed; lobes 5, 4–10 mm, glabrous; corolla tubular-campanulate, fleshy, crimson or bright red, 3–4.5 cm, with 5 dark crimson basal nectar pouches; lobes 5, rounded, ca. 1.5 cm, emarginate; stamens 10, unequal, 1.8–2.9 cm, filaments purple, glabrous; ovary conoid, tapering into style ca. 7 mm, densely tomentose, glandular, rarely glabrous; style glabrous. Capsule cylindric, ca. 22 × 5 mm, with remnants of indumentum. Fl. Apr–May, fr. Sep–Oct.

Mixed forests, *Pinus* forests, *Rhododendron* forests, bamboo forests; 2100–3600 m. SE Xizang, W Yunnan [Bhutan, NE India, Myanmar].

- 1a. Pedicel and ovary glandular; leaf blade 8–11 cm; petiole sometimes with glands ..... 427c. var. *appropinquans*
- 1b. Pedicel and ovary eglandular; leaf blade 4–9 cm; petiole eglandular.
  - 2a. Leaf blade smooth abaxially, without marked reticulations ..... 427a. var. *neriiflorum*
  - 2b. Leaf blade with marked reticulations abaxially, forming alveoli, with some papillae horizontal ..... 427b. var. *agetum*

**427a. *Rhododendron neriiflorum* var. *neriiflorum***

火红杜鹃(原变种) huohong dujuan (yuanbian zhong)

*Rhododendron euchaites* I. B. Balfour & Forrest; *R. neriiflorum* subsp. *euchaites* (I. B. Balfour & Forrest) Tagg; *R. neriiflorum* var. *euchaites* (I. B. Balfour & Forrest) Davidian; *R. neriiflorum* subsp. *phoenicodum* (I. B. Balfour & Farrer) Tagg; *R. phoenicodum* I. B. Balfour & Farrer.

Petioles, pedicels and ovary eglandular; leaf blade abaxial surface flat, without marked reticulations. Pedicel and calyx eglandular. Fl. Apr–May, fr. Sep–Oct.

• Mixed forests, *Pinus* forests, *Rhododendron* forests; 2500–3600 m. SE Xizang, W Yunnan.

**427b. *Rhododendron neriiflorum* var. *agetum*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 169. 1984.

网眼火红杜鹃 wangyan huohong dujuan

*Rhododendron agetum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 29. 1920; *R. neriiflorum* subsp. *agetum* (I. B. Balfour & Forrest) Tagg.

Petioles, pedicels and ovary eglandular; leaf blade 4–9 cm; abaxial surface with marked reticulations that form alveoli, with some papillae horizontal. Pedicel and calyx eglandular.

• *Pinus* forests, bamboo forests; 2700–2800 m. W Yunnan.

**427c. *Rhododendron neriiflorum* var. *appropinquans*** (Tagg & Forrest) W. K. Hu in L. C. Hu & M. Y. Fang, Fl. Reipubl. Popularis Sin. 57(2): 290. 1994.

腺房火红杜鹃 xianfang huohong dujuan

*Rhododendron floccigerum* Franchet var. *appropinquans* Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 312. 1927; *R. floccigerum* subsp. *appropinquans* (Tagg & Forrest) D. F. Chamberlain; *R. neriiflorum* subsp. *phaedropum* (I. B. Balfour & Farrer) Tagg; *R. neriiflorum* var. *phaedropum* (I. B. Balfour & Farrer) T. L. Ming; *R. phaedropum* I. B. Balfour & Farrer; *R. tawangense* K. C. Sahni & H. B. Naithani.

Petiole sometimes with glands; leaf blade 8–11 cm.

Mixed forests, *Pinus* forests; 2100–3600 m. SE Xizang, W Yunnan [Bhutan, NE India, Myanmar].

As this taxon has a more westerly distribution than that of typical *Rhododendron neriiflorum*, it should probably be treated at subspecific rank, as subsp. *phaedropum*. Then, if var. *agetum* is to be recognized, it should be placed in subsp. *neriiflorum*.

**428. *Rhododendron bijiangense*** T. L. Ming, Acta Bot. Yunnan. 3: 116. 1981.

碧江杜鹃 bijiang dujuan

Shrubs ca. 1 m tall; shoots ca. 5 mm in diam. below inflorescence; young shoots densely glandular-setose, glabrescent. Petiole ca. 10 mm, densely glandular-setose; leaf blade leathery, narrowly lanceolate, 7–10 × 2–2.5 cm; base obtuse or rounded; margin revolute; apex acute, apiculate; abaxial surface whitish, prominent midrib and nerves with sparse glands, otherwise glabrous; adaxial surface dark green, glabrous; midrib grooved adaxially; lateral veins 14–15-paired, impressed. Inflorescence 10–12-flowered; rachis ca. 10 mm, densely tomentose. Pedicel 1.8–2 cm, densely glandular-setose; calyx red, fleshy; lobes 5, 5–8 mm, narrowly lanceolate, glandular-setose; margin glandular-ciliate; corolla campanulate, fleshy, crimson, ca. 3 cm, with 5 nectar pouches; lobes 5, suborbicular, ca. 1.3 cm, emarginate; stamens 10, 1.5–2 cm, filaments glabrous; ovary conoid, with ± truncate apex, ca. 5 mm, densely glandular-setose; style glabrous, stigma capitate. Capsule not known. Fl. May.

• Mixed forests; ca. 2900 m. W Yunnan.

**429. *Rhododendron euchroum*** I. B. Balfour & Kingdon Ward., Notes Roy. Bot. Gard. Edinburgh 9: 228. 1916.

滇西杜鹃 dian xi du juan

Dwarf shrubs, 0.5–0.6 m tall; young shoots floccose-tomentose and glandular-hairy. Petiole narrowly winged, ca. 10 mm, setulose-glandular, also floccose; leaf blade leathery, 4–7.5 × 1.7–3 cm; base cuneate; apex rounded, apiculate; abaxial surface with indumentum 2-layered, upper layer fulvous, spongy, lower layer appressed, whitish, epidermis epappillate; adaxial surface green, rugose, glabrous; midrib grooved adaxially; lateral veins 7–8-paired, impressed adaxially. Inflorescence an umbel, 4- or 5-flowered; rachis short. Pedicel ca. 1.5 cm, densely glandular-hairy, and floccose-tomentose; calyx lobes 5, 1–2 mm, rounded, densely tomentose and glandular-hairy; corolla tubular-campanulate, fleshy, bright red to scarlet, 2.3–3 cm, with 5 basal nectar pouches; lobes 5, suborbicular, ca. 1 cm; stamens 10, 2–4 cm, filaments pubescent at base; ovary conoid, tapering into the style, ca. 5 mm, densely glandular-hairy and stellate-tomentose; style ca. 2.2 cm, densely tomentose and glandular below; stigma small. Capsule not known. Fl. Jul.

Thickets, slopes; 3200–3300 m. W Yunnan [NE Myanmar].

**430. *Rhododendron sperabile*** I. B. Balfour & Farrer, Notes Roy. Bot. Gard. Edinburgh 13: 297. 1922.

纯红杜鹃 chun hong du juan

Shrubs, upright, 1–2 m tall, branches ca. 3.5 mm in diam. below inflorescence, with whitish stellate tomentum intermixed with setose-glands. Petiole 10–15 mm, densely whitish tomentose and setulose-glandular; leaf blade leathery, elliptic to lanceolate, or narrowly oblong, 6.7–11.5 × 1.5–3.5 cm; base obtuse to rounded; margin revolute; apex acute to rounded; abaxial surface epidermis glaucous-papillate, whitish to cinnamon continuously tomentose, hairs dendroid, glandular setae on midrib; adaxial surface green, whitish tomentose and glandular-hairy when young, glabrescent, midrib grooved adaxially, lateral veins 10–12-paired, deeply impressed adaxially. Inflorescence umbellate, 4- or 5-flowered; rachis 2–3 mm, tomentose. Pedicel 1–2 cm, whitish stellate-tomentose and setulose-glandular; calyx cupular; lobes 5, 1–3 mm, glandular-ciliate; corolla tubular-campanulate, fleshy, crimson, 3–3.7 cm, with 5 nectar pouches, glabrous; lobes 5, rounded, ca. 1.3 × 1.6 cm, emarginate; stamens 10, filaments glabrous; ovary conoid, tapering into style ca. 6 mm, densely tomentose and glandular-setulose; style glabrous. Capsule cylindrical, curved, ca. 15 × 3.5 mm. Fl. Apr–May, fr. Oct–Nov.

Thickets, rocky slopes, cliffs; 2600–4200 m. NW Yunnan [NE Myanmar].

Two varieties have been recognized in China. Field observations suggest that var. *sperabile* is closely allied to, and probably a subspecies of, *R. floccigerum*, whereas var. *weihsiense* deserves specific rank.

- 1a. Leaf blade elliptic or lanceolate, abaxial surface with cinnamon indumentum ..... 430a. var. *sperabile*

- 1b. Leaf blade narrowly oblong, rarely lanceolate or elliptic, abaxial surface with whitish indumentum ..... 430b. var. *weihsiense*

**430a. *Rhododendron sperabile* var. *sperabile***

纯红杜鹃(原变种) chun hong du juan (yuan bian zhong)

Leaf blade elliptic to lanceolate; abaxial surface indumentum cinnamon.

Thickets, cliffs; 2600–3700 m. NW Yunnan [NE Myanmar].

**430b. *Rhododendron sperabile* var. *weihsiense*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 319. 1927.

维西纯红杜鹃 wei xi chun hong du juan

Leaf blade narrowly oblong, rarely lanceolate or elliptic; abaxial surface indumentum whitish.

• Rocky slopes, cliffs; 3900–4200. NW Yunnan.

**431. *Rhododendron floccigerum*** Franchet, J. Bot. (Morot) 12: 259. 1898.

绵毛杜鹃 mian mao du juan

Shrubs 0.6–3 m tall; young shoots slender, densely floccose-tomentose and setulose-glandular. Petiole 8–12 mm, glabrous when mature; leaf blade leathery, narrowly elliptic to oblong or elliptic, 5–7.5(–12) × (1–)1.6–2 cm; base cuneate; margin revolute; apex acuminate, apiculate; abaxial surface epidermis glaucous-papillate, usually patchily and discontinuously rufous tomentose, hairs dendroid; adaxial surface green, glabrous when mature, midrib grooved adaxially; lateral veins 10–14-paired. Inflorescence umbellate, 4–7-flowered; rachis 2–3 mm, densely rufous-tomentose. Pedicel 1–1.2 cm, sparsely tomentose; calyx lobes 5, 1–4 mm, suborbicular, sparsely tomentose or glabrous, margin ciliate; corolla tubular-campanulate, crimson to scarlet, occasionally yellow or pink, ca. 3.5 cm, with 5 basal nectar pouches; lobes 5, suborbicular, ca. 1.2 × 1.5 cm, emarginate; stamens 10, 1.5–2.8 cm, filaments purple, glabrous; ovary conoid, tapering into style ca. 5.5 mm, densely stellate-tomentose; style glabrous; stigma capitate, small. Capsule cylindrical, ca. 30 × 4 mm, rufous-tomentose. Fl. May–Jun, fr. Sep–Oct.

• *Rhododendron* thickets, cliffs; 2300–4000 m. SE Xizang, NW Yunnan.

**432. *Rhododendron sperabiloides*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 15: 319. 1927.

糠秕杜鹃 kang bi du juan

Dwarf shrubs 0.6–2 m tall; older branches glabrous, shoots ca. 3 mm in diam. below inflorescence; young shoots with pale rufous tomentum, eglandular. Petiole 5–10 mm, tomentose; leaf blade leathery, oblong-elliptic to oblanceolate, 4.5–8.5 × 1.5–2.4 cm; base rounded; apex obtuse, apiculate; abaxial surface discontinuously rufous tomentose, hairs branched to subsulate; adaxial surface green, slightly rugose, glabrous, midrib and lateral nerves raised abaxially, grooved adaxially, lateral veins 10–14-paired, raised abaxially, impressed adaxially. Inflorescence umbellate, 4–6-flowered; rachis 2–3 mm, floccose. Ped-

icel 1–1.3 cm, pale rufous-floccose; calyx lobes 5, small, sparsely tomentose, ciliate; corolla tubular-campanulate, fleshy, crimson to deep red, 3.5–4.5 cm, with 5 basal nectar pouches; lobes 5, ca. 1.2 × 1.5 cm, emarginate; stamens 10, 1.7–3.1 cm, filaments puberulent at base; ovary conoid, tapering into style ca. 5.3 × 3.2 mm, densely rufous-tomentose; style glabrous; stigma capitate. Capsule cylindrical, slightly curved, 18–20 × 3–4 mm. Fl. May–Jun, fr. Oct–Nov.

• *Pinus* forests, alpine thickets; 2800–3700 m. SE Xizang, NW Yunnan.

**433. *Rhododendron microgynum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 99. 1919.

短蕊杜鹃 duan rui du juan

*Rhododendron gymnocarpum* I. B. Balfour ex Tagg; *R. perulatum* I. B. Balfour & Forrest.

Dwarf shrubs 0.6–1.6 m tall; young shoots stout, usually ca. 4 mm in diam., whitish tomentose. Petiole stout, 5–8(–10) mm, glabrescent; leaf blade leathery, lanceolate to oblanceolate, 4–8 × 1.5–2 cm; base cuneate to rounded; margin revolute; apex acuminate, apiculate; abaxial surface indumentum densely felted, cinnamon to buff, hairs rosulate; adaxial surface dark green, glabrous; midrib grooved adaxially; lateral veins 12–15-paired, impressed adaxially. Inflorescence 3–6-flowered; rachis ca. 5 mm, tomentose. Pedicel 1–2 cm, floccose and glandular-hairy; calyx lobes 5, ca. 2 mm, sparsely floccose; corolla open-campanulate, fleshy, rose to deep crimson, sometimes with faint flecks, 2.7–3 cm, glabrescent inside; lobes 5, suborbicular, 1.2–1.3 × 1.5–2 cm, margin crenate; stamens 10, 0.8–1.4 cm, filaments puberulent at base; ovary short, ca. 3 mm, floccose and glandular; style short, ca. 0.5 cm, glabrous. Capsule not known. Fl. Jul.

• *Pinus* forests, alpine thickets; 3300–4300 m. SE Xizang, NW Yunnan.

**434. *Rhododendron dichroanthum*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 212. 1912.

两色杜鹃 liang se du juan

Dwarf shrubs 1–2.5 m tall; older branches glabrous; young shoots white-floccose, sometimes with some setae. Petiole 5–10 mm, white floccose very quickly glabrescent; leaf blade leathery, narrowly elliptic, obovate to oblanceolate, 4–10 × 1.6–4 cm; base rounded to cuneate; margin revolute; apex obtuse, with a rigid apiculus; abaxial surface indumentum 1-layered, continuous, silvery white to fawn, compacted, hairs rosulate; adaxial surface green, rugose, glabrous when mature; midrib grooved adaxially; lateral veins 7–14-paired, impressed adaxially. Inflorescence umbellate, 2–8-flowered; rachis 5–8 mm, puberulent. Pedicel 1.3–2.5 cm, rufous-tomentose; calyx cupular, fleshy; lobes 5, 2–3.5 mm, puberulent, margin ciliate; corolla tubular-campanulate fleshy, yellow flushed red or orange-red, 3.5–4 cm, with 5 deeply colored nectar pouches at base, glabrous; lobes 5, suborbicular; stamens 10, 1.7–2.6 cm, filaments pubescent at base; ovary conoid, ca. 5.2 × 4 mm, rufous-tomentose or glandular-hairy; style ca. 2.6 cm, glabrous. Capsule cylindrical, 10–15 × 4–6 mm. Fl. May.

Forests, alpine thickets, alpine meadows, rocky slopes, cliffs; 2600–4300 m. W Yunnan [Myanmar].

- 1a. Young shoots usually glandular-setose; ovary glandular-hairy.
- 2a. Leaf blade 5.5–8 × 1.6–3 cm ..... 434d. subsp. *septentrionale*
- 2b. Leaf blade 6–9.5 × 2.5–4 cm ..... 434c. subsp. *scyphocalyx*
- 1b. Young shoots setose, or setae absent; ovary without glandular hairs or with a few at base.
- 3a. Leaf blade 4–7 × 2.5–3.5 cm, abaxial indumentum silvery to fawn ..... 434b. subsp. *apodectum*
- 3b. Leaf blade 4–10 × 1.6–4 cm.
- 4a. Leaf blade 4–10 × 3–4 cm, abaxial indumentum silvery, appressed .... 434a. subsp. *dichroanthum*
- 4b. Leaf blade 5.5–8 × 1.6–3 cm, abaxial indumentum whitish to fawn ..... 434d. subsp. *septentrionale*

**434a. *Rhododendron dichroanthum*** subsp. *dichroanthum*

两色杜鹃(原亚种) liang se du juan (yuan ya zhong)

Young shoots with or without setae. Leaf blade 4–10 × 1.6–4 cm; abaxial indumentum silvery or whitish. Ovary without glandular hairs, or rarely with one or two towards the base.

• Forests; 2700–3100 m. W Yunnan.

**434b. *Rhododendron dichroanthum*** subsp. *apodectum* (I. B. Balfour & W. W. Smith) Cowan, Notes Roy. Bot. Gard. Edinburgh 20: 86. 1940.

可喜杜鹃 ke xi du juan

*Rhododendron apodectum* I. B. Balfour & W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 83. 1917; *R. dichroanthum* var. *apodectum* (I. B. Balfour & W. W. Smith) T. L. Ming; *R. jangtzwense* I. B. Balfour & Forrest; *R. liratum* I. B. Balfour & Forrest.

Leaf blade 4–7 × 2.5–3.5 cm; abaxial indumentum silvery to fawn. Corolla orange-red; ovary without glandular hairs, or with a few towards the base.

Forests; 2600–3600 m. W Yunnan [Myanmar].

**434c. *Rhododendron dichroanthum*** subsp. *scyphocalyx* (I. B. Balfour & Forrest) Cowan, Notes Roy. Bot. Gard. Edinburgh 20: 88. 1940.

杯萼两色杜鹃 bei e liang se du juan

*Rhododendron scyphocalyx* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 291. 1922; *R. dichroanthum* subsp. *herpesticum* (I. B. Balfour & Kingdon Ward) Cowan; *R. dichroanthum* var. *scyphocalyx* (I. B. Balfour & Forrest) T. L. Ming; *R. herpesticum* I. B. Balfour & Kingdon Ward; *R. torquatum* I. B. Balfour & Farrer (1922), not L. C. Hu (1992).

Young shoots glandular-setose. Leaf blade 6–9.5 × 2.5–4 cm. Ovary glandular-hairy.



Alpine meadows, rocky slopes; 2900–3900 m. NW Yunnan [NE Myanmar].

**434d. *Rhododendron dichroanthum* subsp. *septentrionale*** Cowan, Notes Roy. Bot. Gard. Edinburgh 20: 87. 1940.

腺梗两色杜鹃 xian geng liang se du juan

*Rhododendron dichroanthum* var. *septentrionale* (Cowan) T. L. Ming.

Young shoots with or without setae. Leaf blade 5.5–8 × 1.6–3 cm; abaxial indumentum whitish to fawn. Ovary with a few glandular hairs at base or glands absent.

Alpine thickets, cliffs; 3900–4300 m. W Yunnan [NE Myanmar].

**435. *Rhododendron sanguineum*** Franchet, J. Bot. (Morot) 12: 259. 1898.

血红杜鹃 xue hong du juan

Dwarf shrubs, 0.3–1.5 m tall; bark gray-brown, usually falling off in flakes; shoots 3–3.8 mm in diam. below inflorescence; young shoots green, with a thin eglandular indumentum; bud scales sometimes persistent. Petiole 5–8 mm, tomentose when young; leaf blade leathery, obovate, widely elliptic to narrowly oblong, 3.8–8 × 1.8–3 cm; base cuneate, decurrent along petioles; apex obtuse or rounded, apiculate; abaxial surface indumentum continuous, silvery to grayish, hairs rosulate; adaxial surface green, glabrous; midrib grooved adaxially; lateral veins 19–20-paired, impressed adaxially. Inflorescence umbellate, (3–)5–7-flowered; rachis ca. 5 mm. Pedicel 1.2–3 cm, densely tomentose; calyx pink, cupular; lobes 5, 2–4 mm, rounded, glandular-ciliate; corolla tubular-campanulate, fleshy, yellow to pink or crimson to blackish crimson, 3–4 cm, with 5 basal nectar pouches, glabrous; lobes 5, suborbicular, emarginate; stamens 10, filaments red, glabrous; ovary ovoid, ca. 5 × 4 mm, densely tomentose, hairs dendroid, eglandular or partly glandular; style ca. 2 cm, glabrous; stigma capitate. Capsule cylindrical, 12–15 × 5–7 mm, rough. Fl. May–Jul, fr. Sep–Oct.

*Rhododendron* thickets, alpine meadows, rocky slopes; 2800–4300(–4500) m. SE Xizang, NW Yunnan [NE Myanmar].

- 1a. Ovary at least partly glandular; bud scales usually persistent.
  - 2a. Corolla yellow flushed pink, to pink ..... 435e. var. *didymoides*
  - 2b. Corolla deep blackish crimson ..... 435f. var. *didymium*
- 1b. Ovary eglandular; bud scales usually deciduous.
  - 3a. Corolla crimson.
    - 4a. Corolla bright crimson ..... 435a. var. *sanguineum*
    - 4b. Corolla deep blackish crimson ..... 435b. var. *haemaleum*
  - 3b. Corolla yellow to pink, rarely white.
    - 5a. Corolla yellow ..... 435c. var. *himertum*
    - 5b. Corolla white, or yellow flushed pink, to pink ..... 435d. var. *cloiophorum*

**435a. *Rhododendron sanguineum* var. *sanguineum***

血红杜鹃(原变种) xue hong du juan (yuan bian zhong)

*Rhododendron sanguineum* subsp. *sanguineoides* Cowan; *R. sanguineum* var. *sanguineoides* (Cowan) Davidian.

Bud scales usually deciduous. Corolla bright crimson; ovary eglandular. Fl. May–Jul, fr. Sep–Oct.

*Rhododendron* thickets, alpine meadows; 2800–4300 m. SE Xizang, NW Yunnan [NE Myanmar].

**435b. *Rhododendron sanguineum* var. *haemaleum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1979.

紫血杜鹃 zi xue du juan

*Rhododendron haemaleum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 71. 1919; *R. sanguineum* subsp. *haemaleum* (I. B. Balfour & Forrest) Cowan; *R. sanguineum* subsp. *mesaeum* I. B. Balfour ex Cowan; *R. sanguineum* var. *mesaeum* (I. B. Balfour ex Cowan) Davidian.

Bud scales usually deciduous. Corolla deep blackish crimson; ovary eglandular.

• *Rhododendron* thickets, rocky slopes; 3100–4300 m. SE Xizang, NW Yunnan.

**435c. *Rhododendron sanguineum* var. *himertum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1979.

蜜黄血红杜鹃 mi huang xue hong du juan

*Rhododendron himertum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 48. 1920; *R. himertum* subsp. *nebrites* (I. B. Balfour & Forrest) Tagg; *R. himertum* subsp. *poliopeplum* (I. B. Balfour & Forrest) Tagg; *R. nebrites* I. B. Balfour & Forrest; *R. poliopeplum* I. B. Balfour & Forrest; *R. sanguineum* subsp. *aizoides* Cowan; *R. sanguineum* subsp. *himertum* (I. B. Balfour & Forrest) Cowan; *R. sanguineum* subsp. *melleum* Cowan.

Bud scales usually deciduous. Corolla yellow; ovary eglandular.

• *Rhododendron* thickets; 3100–4100 m. SE Xizang, NW Yunnan.

**435d. *Rhododendron sanguineum* var. *cloiophorum*** (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1979.

褪色血红杜鹃 tui se xue hong du juan

*Rhododendron cloiophorum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 37. 1919; *R. asmenistum* I. B. Balfour & Forrest; *R. cloiophorum* subsp. *asmenistum* (I. B. Balfour & Forrest) Tagg; *R. cloiophorum* subsp. *leucopetalum* (I. B. Balfour & Forrest) Tagg; *R. cloiophorum* var. *leucopetalum* (I. B. Balfour & Forrest) Davidian; *R. leucopetalum* I. B. Balfour & Forrest; *R. sanguineum* subsp. *cloiophorum* (I. B. Balfour & Forrest) Cowan; *R. sanguineum* subsp. *leucopetalum* (I. B. Balfour & Forrest) Cowan.

Bud scales usually deciduous. Corolla white, or yellow blushed to pink, to pink; ovary eglandular.

• Alpine *Rhododendron* thickets, rocky slopes; 3800–4300 m. SE Xizang, NW Yunnan.

**435e. *Rhododendron sanguineum* var. *didymoides*** Tagg & Forrest, Notes Roy. Bot. Gard. Edinburgh 16: 208. 1931.

变色血红杜鹃 bian se xue hong du juan

*Rhododendron cloiophorum* subsp. *mannophorum* (I. B. Balfour & Forrest) Tagg; *R. cloiophorum* var. *mannophorum* (I. B. Balfour & Forrest) Davidian; *R. cloiophorum* subsp. *roseotinctum* (I. B. Balfour & Forrest) Tagg; *R. cloiophorum* var. *roseotinctum* (I. B. Balfour & Forrest) Davidian; *R. mannophorum* I. B. Balfour & Forrest; *R. roseotinctum* I. B. Balfour & Forrest; *R. sanguineum* subsp. *consanguineum* Cowan; *R. sanguineum* var. *consanguineum* (Cowan) Davidian; *R. sanguineum* subsp. *didymoides* (Tagg & Forrest) Cowan; *R. sanguineum* subsp. *roseotinctum* (Tagg & Forrest) Cowan.

Bud scales usually persistent. Corolla yellow flushed pink, to pink; ovary at least partly glandular-tomentose.

Rocky slopes; 3200–4300 m. SE Xizang, NW Yunnan [NE Myanmar].

**435f. *Rhododendron sanguineum* var. *didymum*** (I. B. Balfour & Forrest) T. L. Ming, Acta Bot. Yunnan. 6: 171. 1984.

黑血红杜鹃 hei hong xue hong du juan

*Rhododendron didymum* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 256. 1922; *R. sanguineum* subsp. *didymum* (I. B. Balfour & Forrest) Cowan.

Bud scales usually persistent. Corolla deep blackish crimson; ovary at least partly glandular-tomentose.

• Thickets, alpine meadows, rocky slopes; 3000–3800(–4500) m. SE Xizang, NW Yunnan.

*Rhododendron sanguineum* subsp. *atrorubrum* Cowan (Notes Roy. Bot. Gard. Edinburgh 20: 69. 1940), described from Xizang, is intermediate between var. *didymum* and var. *sanguineum*; it is not formally treated here as its exact status is uncertain.

**436. *Rhododendron forrestii*** I. B. Balfour ex Diels, Notes Roy. Bot. Gard. Edinburgh 5: 211. 1912.

紫背杜鹃 zi bei du juan

Dwarf creeping shrubs, 20–60(–90) m tall; young shoots ca. 2 mm in diam. below inflorescence; sparsely tomentose and glandular; bud scales persistent. Petiole 4–8 mm, glandular-hairy and sparsely floccose-tomentose; leaf blade leathery, obovate to orbicular, 1.3–2.8 × 0.8–1.7 cm; base broadly cuneate, narrowly decurrent; apex rounded or retuse, sometimes mucronate; abaxial surface pale purple or green, whitish puberulent with a few glandular hairs, or glaucous and papillate when mature; adaxial surface green, glabrous; midrib grooved adaxially; lateral veins 6–7-paired, impressed adaxially. Inflorescence 1(or 2)-flowered. Pedicel 1(–2.5) cm, densely glandular-hairy and puberulent; calyx saucer-shaped, fleshy; lobes 5, 1–3 mm, margin glandular-ciliate; corolla tubular-campanulate, crimson, 2.9–3.8 cm, with 5 basal nectar pouches; lobes 5, suborbicular, 0.9–1 × ca. 1.5 cm, emarginate; stamens 10, 1.5–1.8 cm, filaments glabrous; ovary conoid, ca. 4.5 mm, densely glandular-hairy and tomentose; style glabrous; stigma small. Capsule cylindrical, ca. 10 × 6–7 mm. Fl. May–Jul, fr. Oct–Nov.

Moist stony pastures, moist stony slopes, rocky slopes, cliffs; 3000–4200 m. SE Xizang, NW Yunnan [NE Myanmar].

*Rhododendron forrestii* var. *tumescens* Cowan & Davidian (*Rhododendron* Year Book 6: 69. 1951), described from Xizang, Yunnan, and Myanmar, is intermediate between subsp. *forrestii* and subsp. *papillatum* and does not merit formal recognition.

*Rhododendron ×pyrrhoanthum* I. B. Balfour (Notes Roy. Bot. Gard. Edinburgh 12: 154. 1920) was described from a rogue hybrid in a batch of *R. forrestii* raised from seed collected by George Forrest in Yunnan. It is known only in cultivation.

- 1a. Leaf blade 1.2–1.7 cm wide, abaxial surface purple or green, not papillate, glandular hairs few or absent ..... 436a. subsp. *forrestii*
- 1b. Leaf blade 0.8–1.2 cm wide, abaxial surface glaucous-papillate, glandular hairs conspicuous ..... 436b. subsp. *papillatum*

**436a. *Rhododendron forrestii* subsp. *forrestii***

紫背杜鹃(原亚种) zi bei du juan (yuan ya zhong)

*Rhododendron forrestii* var. *repens* (I. B. Balfour & Forrest) Cowan & Davidian; *R. repens* I. B. Balfour & Forrest.

Leaf blade 1.3–2.5 × 1.2–1.7 cm; abaxial surface purple or green, not papillate, glandular hairs few or absent. Fl. May–Jul, fr. Oct–Nov.

Moist stony pastures, rocky slopes; 3000–4200 m. SE Xizang, NW Yunnan [NE Myanmar].

**436b. *Rhododendron forrestii* subsp. *papillatum*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 338. 1979.

乳突紫背杜鹃 ru tu zi bei du juan

Leaf blade 1.8–2.8 × 0.8–1.2 cm; abaxial surface glaucous-papillate, glandular hairs conspicuous.

• Moist stony slopes, cliffs; 3300–3900 m. SE Xizang.

**437. *Rhododendron aperantum*** I. B. Balfour & Kingdon Ward, Notes Roy. Bot. Gard. Edinburgh 13: 231. 1922.

宿鳞杜鹃 su lin du juan

Dwarf matted shrubs, 0.3–0.6 m tall; young shoots floccose-tomentose; bud scales persistent. Petiole broad, 3–6 mm, floccose, glabrescent; leaf blade leathery, obovate to oblanceolate, 3–6.5 × 1.4–2.4 cm; base cuneate; apex rounded, apiculate; abaxial surface glaucous, papillate, glabrous when mature, sometimes with vestiges of reddish brown or whitish indumentum persisting on main veins and midrib; adaxial surface green, rugose, glabrous. Inflorescence lax, 4–6-flowered; rachis ca. 2 mm. Pedicel 1.5–3 cm, floccose-tomentose and glandular-hairy; calyx cupular; lobes 5, 3–6 mm, glandular-ciliate, otherwise glabrous; corolla tubular-campanulate, white, yellow flushed pink to orange or rose, 3–4.5 cm, lobes 5, rounded, ca. 1.3 × 2 cm, glabrous; stamens 10, 1.3–2.5 cm, filaments glabrous; ovary conoid, ca. 5 mm, rufous-tomentose, and glandular-setose; style ca. 2.2 cm, glabrous. Capsule oblong, 12–20 × 4.2–7 mm; calyx persistent, tomentose. Fl. Jul, fr. Oct.

*Rhododendron* thickets, cliffs; 3600–4500 m. NW Yunnan [NE Myanmar].

**438. *Rhododendron chamaethomsonii*** (Tagg) Cowan & Davidian, *Rhododendron Year Book* 6: 70. 1951.

云雾杜鹃 yun wu du juan

Upright shrubs, 0.15–0.9 m tall, bark falling off in flakes; shoots 2.5–3 mm in diam. below inflorescence; young shoots glandular-hairy or tomentose; bud scales usually deciduous. Petiole 7–16 mm, glandular; leaf blade leathery, obovate or oblong-obovate, 2.5–6.5(–9) × 1.1–3.5(–4) cm; base obtuse, decurrent; margin revolute; apex rounded, apiculate; abaxial surface pale green, puberulent and glandular towards the base, or glabrous; adaxial surface green, glabrous; midrib grooved adaxially; lateral veins 8–10-paired, impressed adaxially. Inflorescence umbellate, 1–4-flowered. Pedicel 0.8–1.3(–1.6) cm, glandular; calyx 1–4 mm; corolla tubular-campanulate whitish to pale pink to deep crimson, 2.6–2.8(–4.8) cm, pubescent at base outside; lobes 5, unequal, 1.5–3.4 cm, emarginate; ovary conoid, 5–6 mm, hairy, with or without glandular hairs; style glabrous. Capsule cylindrical, 15–23 mm, with vestiges of glands; calyx persistent. Fl. Jun.

• *Rhododendron* thickets, alpine thickets, stony slopes, damp rocky alpine slopes; 3300–4500 m. SE Xizang, NW Yunnan.

At least some forms of this entity may be hybrids of *Rhododendron forrestii*. One of us (Chamberlain) has seen one such hybrid between the latter species and *R. stewartianum* in the field above Gongshan in NW Yunnan. This plant was a good fit with *R. chamaethomsonii*.

- 1a. Corolla pale to deep pink; calyx to 1 mm; ovary densely hairy ..... 438c. var. *chamaethauma*
- 1b. Corolla carmine to crimson; calyx lobes 2–4 mm; ovary sparsely hairy, sometimes glandular.
  - 2a. Leaf blade glabrous; petiole and young shoots glandular ..... 438a. var. *chamaethomsonii*
  - 2b. Leaf blade with thin discontinuous indumentum when mature; petiole and young shoots eglandular ..... 438b. var. *chamaedoron*

**438a. *Rhododendron chamaethomsonii* var. *chamaethomsonii***

云雾杜鹃(原变种) yun wu du juan (yuan bian zhong)

*Rhododendron repens* I. B. Balfour & Forrest var. *chamaethomsonii* Tagg in J. B. Stevenson, Sp. Rhodod. 514. 1930 [*“chamae-Thomsonii”*].

Young shoots and petioles glandular-hairy. Leaf blade with both surfaces glabrous. Calyx 2–4 mm; corolla pale pink to deep crimson; ovary sparsely hairy, sometimes glandular.

• Damp rocky alpine slopes; 4200–4500 m. SE Xizang, NW Yunnan.

**438b. *Rhododendron chamaethomsonii* var. *chamaedoron*** (Tagg) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 332. 1979.

毛背云雾杜鹃 mao bei yun wu du juan

*Rhododendron repens* var. *chamaedoron* Tagg in J. B. Stevenson, Sp. Rhodod. 514. 1930.

Leaf blade with both surfaces with thin discontinuous indumentum when mature. Calyx 2–4 mm; corolla pale pink to deep crimson; ovary sparsely hairy, sometimes glandular.

• Alpine thickets, stony slopes; 3300–4400 m. SE Xizang, NW Yunnan.

**438c. *Rhododendron chamaethomsonii* var. *chamaethauma*** (Tagg) Cowan & Davidian, *Rhododendron Year Book* 6: 71. 1951.

短萼云雾杜鹃 duan e yun wu du juan

*Rhododendron repens* var. *chamaethauma* Tagg in J. B. Stevenson, Sp. Rhodod. 514. 1930.

Calyx less than 1 mm; corolla whitish to deep pink; ovary densely brownish hairy.

• *Rhododendron* thickets, damp stony alpine slopes; 4200–4400 m. SE Xizang, NW Yunnan.

**439. *Rhododendron parmulatum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 182. 1936.

盘萼杜鹃 pan e du juan

Small shrubs, 1–2 m tall; shoots 3–4 mm in diam. below inflorescence; young shoots glabrescent; bud scales deciduous. Petiole ca. 5 × 2.7 mm, glabrescent; leaf blade leathery, elliptic to obovate, 5.2–6.4 × 2.5–3.2 cm; base rounded; apex apiculate; abaxial surface glaucous, papillate, midrib and main veins with white hairs; adaxial surface green glabrous; midrib grooved adaxially, lateral veins 11–13-paired, impressed adaxially. Inflorescence 4–6-flowered; rachis 3–5 mm, glabrous. Pedicel 1–2 cm, puberulent; calyx disk-shaped, fleshy, 4–6 mm, glabrous; corolla tubular-campanulate, white or yellow, sometimes flushed pink, with red flecks, 4–5 cm, 5 deep purple nectar pouches at base; lobes 5, rounded to obovate, 1.2–1.4 × 1.2–1.5 cm, emarginate; stamens 10, 1.7–2.8 cm, filaments puberulent on lower half; ovary cylindrical, 5–6 mm, with a few scattered hairs; style 2.7–3 cm, glabrous. Capsule not known. Fl. Jun.

• *Pinus* forests, cliffs; 3000–3700 m. S Xizang.

**440. *Rhododendron trilactorum*** Cowan, Notes Roy. Bot. Gard. Edinburgh 21: 144. 1953.

朗贡杜鹃 lang gong du juan

Dwarf shrubs, 0.15–0.3 m tall; bud scales persistent. Petiole winged, 3–5 mm, glabrescent; leaf blade leathery, obovate or obovate-spathulate, 1–3.2 × 0.6–1.8 cm; base attenuate, decurrent; margin revolute; apex rounded, apiculate; abaxial surface pale green, glabrous; adaxial surface deep green, glabrous, midrib raised abaxially, grooved adaxially; lateral veins 7–11-paired, raised abaxially, impressed adaxially. Inflorescence 2–3(–5)-flowered; rachis minute. Pedicel 2–3 cm, glabrescent; calyx green flushed pink, fleshy; lobes 5, 1–3 mm, glabrous; corolla funnel-campanulate, fleshy, pale yellow, white-puberulent near base inside, 3.3–4 cm, lobes 5, widely ovate, ca. 1.5 × 1.5–1.8 cm, emarginate; stamens 10, 2–3 cm, filaments white-pubescent at base; ovary cylindrical, ca. 6 mm;

style 2.7–3 cm, glabrous; stigma capitate, small. Capsule not known. Fl. Jun.

Rocky slopes; 3600–4300 m. SE Xizang [NE India].

**441. *Rhododendron temenium*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 146. 1919.

滇藏杜鹃 dian zang du juan

Upright dwarf shrubs, 0.6–1 m tall; older branches with swollen verrucae; shoots 3–4 mm in diam. below inflorescence; young shoots setulose and tomentose. Petiole ca. 4 mm, glabrescent; leaf blade leathery, oblong to oblong-elliptic, 3–6 × 1.3–2.3 cm; base widely cuneate or obtuse; margin revolute; apex obtuse, apiculate; abaxial surface glaucous-papillate, glabrous or with remains of whitish floccose indumentum, especially on midrib and main veins; adaxial surface deep green, glabrous; midrib grooved adaxially; lateral veins 9–11-paired, impressed adaxially. Inflorescence lax or dense, 4–6-flowered; rachis ca. 5 mm, puberulent. Pedicel 1–2 cm, setulose, tomentose; calyx cupular; lobes 5, 3–4(–10) mm, ovate, glabrous, margin ciliate; corolla tubular-campanulate, fleshy, white to yellow, pink or crimson to deep crimson, 3–4 cm, lobes 5, sub-orbicular, ca. 1.1 × 1.5 cm, emarginate; stamens 10, 1.5–2 cm, filaments glabrous; ovary ovoid, ca. 4.5 mm, densely tomentose and glandular-hairy; style ca. 2 cm, glabrous. Capsule cylindrical, ca. 8 mm, with remnants of indumentum. Fl. Jun–Jul, fr. Aug–Oct.

• Alpine thickets, meadows, rocky or stony slopes, cliffs; 3000–4500 m. SE Xizang, NW Yunnan.

*Rhododendron ×fulvastrum* I. B. Balfour & Forrest (Notes Roy. Bot. Gard. Edinburgh 13: 45. 1920), described from Xizang, is a hybrid between *R. temenium* and perhaps *R. sanguineum*.

- 1a. Young shoots and pedicels setulose; inflorescence lax; corolla white to deep rose-pink ..... 441c. var. *dealbatum*
- 1b. Young shoots and pedicels strongly setose; inflorescence dense; corolla yellow or crimson to carmine.
  - 2a. Corolla carmine to crimson ..... 441a. var. *temenium*
  - 2b. Corolla yellow ..... 441b. var. *gilvum*

**441a. *Rhododendron temenium* var. *temenium***

滇藏杜鹃(原变种) dian zang du juan (yuan bian zhong)

*Rhododendron eudoxum* I. B. Balfour & Forrest subsp. *temenium* (I. B. Balfour & Forrest) Tagg; *R. eudoxum* subsp. *pothinum* (I. B. Balfour & Forrest) Tagg; *R. pothinum* I. B. Balfour & Forrest; *R. temenium* subsp. *pothinum* (I. B. Balfour & Forrest) Cowan.

Young shoots and pedicels strongly setose. Leaf blade glabrous. Inflorescence 4–6-flowered; corolla carmine to crimson; ovary densely tomentose. Fl. Jun–Jul, fr. Aug–Oct.

• Alpine thickets, meadows, rocky slopes; 3000–4400 m. SE Xizang, NW Yunnan.

**441b. *Rhododendron temenium* var. *gilvum*** (Cowan) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1979.

黄花滇藏杜鹃 huang hua dian zang du juan

*Rhododendron temenium* subsp. *gilvum* Cowan, Notes Roy. Bot. Gard. Edinburgh 20: 82. 1940; *R. fulvastrum* I. B. Balfour & Forrest var. *gilvum* (Cowan) Davidian; *R. temenium* subsp. *chrysanthemum* Cowan.

Young shoots and pedicels strongly setose. Corolla yellow.

• Alpine stony slopes, cliffs; 3600–4500 m. SE Xizang, NW Yunnan.

**441c. *Rhododendron temenium* var. *dealbatum*** (Cowan) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 334. 1979.

粉红滇藏杜鹃 fen hong dian zang du juan

*Rhododendron temenium* subsp. *dealbatum* Cowan, Notes Roy. Bot. Gard. Edinburgh 20: 83. 1940; *R. eudoxum* subsp. *glaphyrum* (I. B. Balfour & Forrest) Tagg; *R. glaphyrum* I. B. Balfour & Forrest; *R. glaphyrum* var. *dealbatum* (Cowan) Davidian; *R. temenium* subsp. *glaphyrum* (I. B. Balfour & Forrest) Cowan.

Young shoots weakly setose or setulose. Inflorescence lax, 2–4-flowered; corolla white to rose.

• Alpine thickets, stony slopes; 3600–4300 m. SE Xizang, NW Yunnan.

**442. *Rhododendron erastum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 60. 1919.

匍匐杜鹃 pu fu du juan

*Rhododendron porphyrophyllum* I. B. Balfour & Forrest; *R. serpens* I. B. Balfour & Forrest.

Dwarf shrubs, 0.05–0.5 m tall; branchlets 3–3.8 mm in diam. below inflorescence; young shoots densely floccose-tomentose; bud scales persistent. Petiole 5–10 mm, sparsely floccose-tomentose; leaf blade leathery, elliptic to narrowly elliptic or oblong-ovate to oblanceolate, 1.5–4(–6.2) × 0.5–1.1(–2) cm; base cuneate, decurrent along petioles; apex obtuse, apiculate; abaxial surface purple or green, whitish tomentose and with a few glandular hairs, especially on the midrib; adaxial surface green, slightly rugose, glabrous, midrib grooved adaxially; lateral veins 7–11(–12)-paired. Inflorescence umbellate, (1–)3- or 4-flowered. Pedicel ca. 1 cm, sparsely tomentose and glandular; calyx saucer-shaped, fleshy; lobes 5, ca. 2 mm, puberulent; corolla tubular-campanulate, pale rose, 2.2–3 cm, with 5 nectar pouches at base; lobes 5, rounded, emarginate; stamens 10, 1–1.3 cm, filaments pubescent at base; ovary conoid, ca. 3 mm, densely floccose-tomentose, intermixed with glandular hairs; style ca. 1.5 cm, glabrous. Capsule not known. Fl. Jul.

• Rocky alpine meadows; 3900–4300 m. SE Xizang, NW Yunnan.

**443. *Rhododendron eudoxum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 62. 1919.

华丽杜鹃 hua li du juan

Dwarf shrubs, 0.3–1.2(–1.8) m tall; bark gray-brown, usually falling off in flakes; shoots 2.2–2.4 mm in diam. below

inflorescence; young shoots tomentose, with a few weak setae. Petiole 5–10 mm, tomentose, intermixed with a few setulae; leaf blade leathery, long-elliptic to oblong-obovate, 2.3–3 × 0.8–1.4 cm; base cuneate; margin revolute; apex obtuse or rounded, apiculate; abaxial surface whitish to brownish, indumentum thin, discontinuous; adaxial surface green, glabrous; midrib grooved adaxially; lateral veins 7–9-paired, impressed adaxially. Inflorescence umbellate, 3–5(–10)-flowered. Pedicel 1–1.2 cm, tomentose, also glandular; calyx cupular when well-developed, undulate, 2–7 mm, sparsely tomentose, glandular; corolla tubular-campanulate to campanulate, fleshy, pink to rose-carmine, 2.5–4 cm, with 5 nectar pouches at base, lobes 5, emarginate; stamens 10, 1–1.6 cm filaments glabrescent; ovary ovoid, 3.4–4 mm, predominantly glandular to predominantly tomentose; style ca. 2.8 cm, glabrous. Capsule cylindric, ca. 12 mm, with vestigial glands. Fl. Jun, fr. Oct–Nov.

• Bamboo forests, alpine *Rhododendron* thickets, stony slopes, cliffs; 3300–4300 m. SE Xizang, NW Yunnan.

- 1a. Ovary predominantly glandular; leaf blade 2.3–3 cm ..... 443a. var. *eudoxum*
- 1b. Ovary predominantly tomentose; leaf blade 3.5–9 cm.
  - 2a. Leaf blade 7–9 cm, indumentum brownish; corolla ca. 4 cm .... 443b. var. *brunneifolium*
  - 2b. Leaf blade 3.5–7 cm, indumentum whitish; corolla 3–3.5 cm ..... 443c. var. *mesopolium*

**443a. *Rhododendron eudoxum* var. *eudoxum***

华丽杜鹃(原变种) hua li du juan (yuan bian zhong)

*Rhododendron eudoxum* subsp. *trichomiscum* (I. B. Balfour & Forrest) Tagg; *R. fulvastrum* I. B. Balfour & Forrest subsp. *trichomiscum* (I. B. Balfour & Forrest) Cowan; *R. fulvastrum* subsp. *trichophlebium* (I. B. Balfour & Forrest) Cowan; *R. temenium* I. B. Balfour & Forrest subsp. *albipetalum* Cowan; *R. temenium* subsp. *rhodanthum* Cowan; *R. trichomiscum* I. B. Balfour & Forrest; *R. trichophlebium* I. B. Balfour & Forrest.

**22. *Rhododendron* subsect. *Fulgensia* D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 336. 1979.**

猩红杜鹃亚组 xing hong du juan ya zu

Hu Linzhen (胡琳贞 Hu Ling-cheng); David F. Chamberlain

Shrubs or small trees; young shoots tomentose, glandular or glabrous. Leaf blade oblong-elliptic to obovate; abaxial surface densely fulvous woolly, hairs fasciculate or long-stipitate stellate. Inflorescence terminal, lax or dense, 4–14-flowered; rachis 0.2–2.5 cm. Calyx minute to well-developed and cup-shaped, 1–10 mm, 5-lobed; corolla funnel- to tubular-campanulate, 5-lobed, fleshy, blood-red, or scarlet to deep carmine, with nectar pouches; stamens 10; ovary and style glabrous. Capsule straight or slightly curved.

Three species: Bhutan, China, India, Nepal, Sikkim; three species (two endemic) in China.

The circumscription of *Rhododendron* subsect. *Fulgensia* is problematic. Whereas *R. fulgens* is perfectly distinct, both *R. miniatum* and *R. sherriffii* are closely allied to species in *R.* subsect. *Thomsonia*, though with leaves abaxially densely hairy.

- 1a. Young shoots glabrous; inflorescence 8–14-flowered; corolla tubular-campanulate, blood-red to scarlet, 2–3.5 cm; calyx 1–2 mm ..... 444. *R. fulgens*
- 1b. Young shoots ± hairy; inflorescence 4–6-flowered; corolla funnelform-campanulate, deep carmine; calyx 3–10 mm.
  - 2a. Young shoots glandular; abaxial leaf surface with long-stipitate stellate hairs; calyx 3–5 mm; corolla 3.5–4 cm ..... 445. *R. sherriffii*
  - 2b. Young shoots eglandular; abaxial leaf surface with fasciculate hairs; calyx 8–10 mm; corolla 3–3.5 cm ..... 446. *R. miniatum*

Leaf blade 2.3–3 × 0.8–1.4 cm; abaxial surface with thin, discontinuous indumentum. Ovary predominantly glandular. Fl. Jun, fr. Oct–Nov.

• Alpine *Rhododendron* thickets; 3300–4200 m. SE Xizang, NW Yunnan.

**443b. *Rhododendron eudoxum* var. *brunneifolium* (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 333. 1979.**

褐叶华丽杜鹃 he ye hua li du juan

*Rhododendron brunneifolium* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 33. 1920; *R. eudoxum* subsp. *brunneifolium* (I. B. Balfour & Forrest) Tagg.

Leaf blade 7–9 cm; abaxial surface with brown indumentum. Corolla rose, ca. 4 cm; ovary predominantly tomentose.

• Alpine *Rhododendron* thickets, stony slopes, cliffs; 3300–4200 m. SE Xizang, NW Yunnan.

**443c. *Rhododendron eudoxum* var. *mesopolium* (I. B. Balfour & Forrest) D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 37: 333. 1979.**

白毛华丽杜鹃 bai mao hua li du juan

*Rhododendron mesopolium* I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 13: 51. 1920; *R. asteium* I. B. Balfour & Forrest; *R. epipastum* I. B. Balfour & Forrest; *R. eudoxum* subsp. *asteium* (I. B. Balfour & Forrest) Tagg; *R. eudoxum* subsp. *epipastum* (I. B. Balfour & Forrest) Tagg; *R. eudoxum* subsp. *mesopolium* (I. B. Balfour & Forrest) Tagg; *R. fulvastrum* subsp. *epipastum* (I. B. Balfour & Forrest) Cowan; *R. fulvastrum* subsp. *mesopolium* (I. B. Balfour & Forrest) Cowan.

Leaf blade 3.5–7 cm; abaxial surface with whitish, discontinuous indumentum. Corolla pink, 3–3.5 cm; ovary predominantly tomentose.

• Bamboo forests, alpine *Rhododendron* thickets, stony slopes; 3800–4300 m. SE Xizang, NW Yunnan.

**444. *Rhododendron fulgens*** J. D. Hooker, *Rhododendr. Sikkim-Himalaya* 3: t. 25. 1851.

猩红杜鹃 xing hong du juan

Shrubs, 1.5–4 m tall; young shoots and petioles glabrous. Petiole 10–25 mm; leaf blade leathery, oblong-ovate to obovate, 6–11 × 4.5–7 cm; base rounded or slightly cordate; apex rounded, apiculate; abaxial surface densely fulvous woolly, hairs fasciculate; adaxial surface glossy, glabrous. Inflorescence compactly racemose-umbellate, 8–14-flowered; rachis 10–20 mm. Pedicel ca. 1 cm, glabrous; calyx red, 1–2 mm, glabrous; corolla tubular-campanulate, fleshy, scarlet to blood-red, unspotted, 2–3.5 cm, with 5 dark red nectar pouches at base inside; lobes 5; stamens unequal, 1–2.2 cm, filaments white, or tinted pink at base, glabrous; ovary conical, 4–5 mm, glabrous; style slightly curved upwards, tinted pink, 1.5–1.7 cm, glabrous. Capsule narrowly elongate-cylindric, slightly curved, 5-valved, 10–30 × 4–8 mm. Fl. Apr–May, fr. Aug.

*Rhododendron* thickets, mountains; 3700–4500 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].

**445. *Rhododendron sherriffii*** Cowan, *Notes Roy. Bot. Gard. Edinburgh* 19: 231. 1937.

红钟杜鹃 hong zhong du juan

Shrubs, 2–4 m tall; young shoots tomentose and shortly glandular-hairy. Petiole 12–15 mm, glabrous; leaf blade leathery, oblong-ovate, 4.5–6 × 2.5–4 cm; base rounded; apex obtuse or rounded, apiculate; abaxial surface with a thick fulvous indumentum, hairs long-stipitate stellate; adaxial surface glabrous. Inflorescence umbellate, 4–6-flowered; rachis ca. 4 mm.

**23. *Rhododendron*** subsect. ***Thomsonia*** (Tagg) Sleumer, *Bot. Jahrb. Syst.* 74: 545. 1949.

蜜腺杜鹃亚组 mi xian du juan ya zu

Fang Mingyuan (方明渊); David F. Chamberlain

*Rhododendron* subser. *Thomsonia* Tagg in J. B. Stevenson, *Sp. Rhodod.* 735. 1930 [*“Thomsonii”*].

Shrubs or small trees. Leaf blade orbicular to oblong-elliptic, both surfaces glabrous at maturity, sometimes with scattered fasciculate hairs on abaxial surface that are restricted to the lateral veins. Inflorescence 2–15-flowered. Calyx usually well-developed and cupular, often red, 2–12 mm; corolla campanulate to tubular-campanulate, 5-lobed, fleshy, creamy white to deep crimson, rarely yellow, with 5 large nectar pouches; stamens 10(–12); ovary glabrous, rufous-tomentose or glandular-hairy; style glabrous or glandular to tip. Capsule stout and short, usually with glaucous bloom.

Fifteen species: Bhutan, China, India, Myanmar, Nepal, Sikkim; 15 species (seven endemic) in China.

1a. Leaf blade narrowly oblong-elliptic or oblanceolate, base usually not decurrent (except in *R. hookeri*).

2a. Leaf blade 9–17 × 3–6 cm; inflorescence rachis 5–15 mm.

3a. Petiole 0.5–1 cm, stipitate-glandular and dendroid-hairy; pedicel slender, 0.5–1 cm; calyx ca. 3 mm ..... 454. *R. faucium*

3b. Petiole 1.5–3 cm, glabrous; pedicel stout, 1.5–2 cm; calyx 5–8 mm.

4a. Petiole cylindrical; inflorescence usually 2–3-flowered; corolla 5.5–7 cm; ovary and the base of style pubescent and glandular ..... 455. *R. megalanthum*

4b. Petiole with adaxial surface flat; inflorescence usually 10–15-flowered; corolla 3.5–4.5 cm; ovary and style glabrous.

5a. Lateral leaf veins 11–13 each side of midrib, abaxially with stout beadlike fasciculate hairs, corolla deep crimson or rose pink ..... 456. *R. hookeri*

5b. Lateral leaf veins 15–18 each side of midrib, abaxially with slender fasciculate hairs; corolla pale rose or pinkish ..... 452. *R. hylaeum*

2b. Leaf blade 3–8 × 1.5–2.5 cm; inflorescence rachis 3–5 mm.

6a. Corolla crimson; calyx 8–12 mm, irregularly split; pedicel 5–8 mm; ovary and style glabrous ..... 449. *R. populare*

Pedicel 1–2 cm, glabrous; calyx crimson, 3–5 mm, glabrous; corolla funnelform-campanulate, fleshy, deep carmine, 3.5–4 cm, with dark red nectar pouches at base, lobes 5, slightly spreading, round; stamens unequal, 2–3 cm, filaments glabrous; ovary oblong-conical, furrowed, ca. 5 mm, ca. 5-locular, glabrous; style carmine, ca. 2.8 cm, glabrous; stigma slightly lobulate. Capsule cylindric, straight, ca. 13 × 7 mm, calyx and style persistent. Fl. Apr, fr. Oct.

• *Rhododendron* thickets on mountain slopes; 3500–4000 m. S Xizang.

**446. *Rhododendron miniatum*** Cowan, *Notes Roy. Bot. Gard. Edinburgh* 19: 229. 1937.

焰红杜鹃 yan hong du juan

Shrubs, 1.5–2 m tall; young shoots sparsely black-floccose, eglandular. Petiole 6–8 mm, tomentose or glabrescent; leaf blade thickly leathery, elliptic to oblong-ovate, 3.3–5.5 × 2–2.8 cm; base rounded or cordate; apex bluntly rounded, apiculate; abaxial surface thickly fawn woolly, hairs fasciculate; adaxial surface glabrous except for ± floccose-hairy groove of midrib. Inflorescence umbellate, 4–6-flowered; rachis 3–5 mm, tomentose. Pedicel 0.5–0.6 cm, sparsely floccose or glabrescent; calyx crimson, fleshy; lobes 8–10 mm, unequal, glabrous; corolla funnelform-campanulate, vermilion, 3–3.5 cm, with black-red nectar pouches at base, lobes 5, spreading outwards, rounded; stamens unequal, 1.5–2.5 cm, filaments white, glabrous; ovary elongate-cylindric, 5–6 mm, 5-locular, glabrous; style white, 2.5–2.8 cm, glabrous; stigma capitate, red. Fl. May.

• Forests, cliffs; ca. 3700 m. S Xizang.

- 6b. Corolla white or rose to crimson; calyx 2–8 mm; pedicel 10–25 mm; ovary and style glandular.
  - 7a. Petiole ca. 5 mm; stamen filaments tomentose at base; style glabrous towards tip ..... 461. *R. euryisiphon*
  - 7b. Petiole 8–10 mm; stamen filaments glabrous; style glandular to tip.
    - 8a. Leaf blade 5–8 × 2–2.5 cm; pedicel slender, 2–3 cm; corolla 3.5–4 cm ..... 448. *R. cerasinum*
    - 8b. Leaf blade 4–5 × ca. 1.5 cm; pedicel short, ca. 1.5 cm; corolla ca. 2.5 cm ..... 447. *R. bonvalotii*
- 1b. Leaf blade elliptic, obovate or sub-orbicular, base sometimes decurrent, then with petiole narrowly winged.
  - 9a. Leaf blade suborbicular, base rounded or cordate; abaxial surface sometimes glaucous, often with some red stipitate glands.
    - 10a. Petiole slender, cylindric, 1–1.5 mm wide; calyx 4–7 mm; ovary tomentose and glandular ..... 451. *R. viscidifolium*
    - 10b. Petiole thick or flat, 2–4 mm wide; calyx 0.5–1.2 cm, red; ovary only glandular.
      - 11a. Petiole cylindric, ca. 2 mm wide; leaf blade 4–7 cm; corolla crimson; filaments tomentose at base ..... 450. *R. thomsonii*
      - 11b. Petiole flat, 3–4 mm wide; leaf blade 8–13 cm; corolla white or pink; filaments glabrous ..... 458. *R. cyanocarpum*
  - 9b. Leaf blade obovate, broadest above the middle, base cuneate, rarely rounded; abaxial surface not glaucous, glabrous or with brownish indumentum.
    - 12a. Style glandular, with dendroid hairs along whole length ..... 453. *R. ramipilosum*
    - 12b. Style glabrous.
      - 13a. Abaxial leaf surface thinly persistently fawn-farinoso; inflorescence 3–7-flowered, rachis conical, 1–2 mm; petiole 5–10 mm, not winged ..... 460. *R. stewartianum*
      - 13b. Abaxial leaf surface glabrous or pubescent along midrib only; inflorescence 5–10-flowered, 2–12 mm; petiole (5–)10–30 mm, flat, often narrowly winged.
        - 14a. Stamens 3–4 cm, filaments glabrous; abaxial leaf surface glabrous; corolla lobes 2.5–3 cm wide ..... 457. *R. meddianum*
        - 14b. Stamens 1.8–3 cm, filaments pubescent at base; abaxial leaf surface pubescent along midrib; corolla lobes ca. 2 cm wide ..... 459. *R. eclecticum*

**447. *Rhododendron bonvalotii*** Franchet, J. Bot. (Morot) 5: 94. 1891 [“*bonvaloti*”].

折多杜鹃 zhe duo du juan

Shrubs; young shoots glabrous. Petiole cylindric, 5–8 mm, shortly glandular-hairy; leaf blade elliptic or oblong-lanceolate, 4–5 × ca. 1.5 cm; base obtuse or rounded; margin revolute; apex acute; abaxial surface greenish, glabrous; adaxial surface deep green, slightly shiny, with 2–4 longitudinal ridges towards the apex; midrib prominently raised abaxially, grooved adaxially; lateral veins 12–14-paired, obscure. Inflorescence racemose-umbellate, usually 4- or 5-flowered; rachis stout, ca. 15 mm, shortly glandular-hairy. Calyx lobes 5, ca. 4 mm, ovate or irregularly suborbicular, fringed with glands; corolla campanulate, pale pink, 2–2.5 cm, lobes 5, suborbicular, ca. 1 × 1.5 cm, emarginate; stamens 10, 1–1.5 cm, unequal, filaments glabrous; ovary ovoid, 4–6 mm, densely glandular; style glandular to tip. Capsule not known.

- W Sichuan (near Kangding).

This species has the flower characters of *Rhododendron* subsect. *Thomsonia*, but the elliptic or oblong-oblong-lanceolate leaves resemble those of *R. selense*, suggesting that it could be hybrid of *R. selense*, possibly with *R. souliei*. It has not been seen since it was first collected over a century ago.

**448. *Rhododendron cerasinum*** Tagg in J. B. Stevenson, Sp. Rhodod. 737. 1930.

櫻花杜鹃 ying hua du juan

Shrubs, 2–4 m tall; older branches grayish brown; bark exfoliating into thin and small irregular flakes; young shoots green, glabrescent. Petiole cylindric, with adaxial surface flattened, 10–15 mm, pubescent; leaf blade thinly leathery, oblong-

elliptic to narrowly obovate, 5–8 × 1.5–2.5 cm; base cuneate; apex obtuse, apiculate; abaxial surface floccose, glabrescent; adaxial surface green, pubescent, especially along midrib; midrib prominent, raised abaxially; lateral veins 13–15-paired, obscure. Inflorescence 3–6-flowered; rachis conical, 2–5 mm. Pedicel 2–3 cm, glandular; calyx cupular; lobes 5, ca. 2 mm; outer surface glandular; corolla campanulate, crimson to scarlet or bicolored, creamy-white and cherry-red, 3–3.5 cm, base with darker nectar pouches; lobes 5, rounded, ca. 1.2 × 2 cm, emarginate; stamens 10, unequal, 2–3 cm, filaments slender, glabrous; ovary conoid, ca. 5 mm, densely glandular-hairy; style stout, glandular to tip; stigma lobulate. Capsule 20–25 mm, glandular, base enclosed by swollen and persistent calyx. Fl. Jun.

*Abies* forest margins, *Rhododendron* thickets; 3200–3800 m. SE Xizang [Myanmar].

**449. *Rhododendron populare*** Cowan, Notes Roy. Bot. Gard. Edinburgh 19: 251. 1937.

蜜腺杜鹃 mi xian du juan

Small trees or shrubs, 2–5 m tall; older branches brown, bark exfoliating into thin and small irregular flakes; young shoots slender, pale brown-green, glabrous. Petiole stout, 5–10 mm, floccose when young, glabrescent; leaf blade leathery, obovate-elliptic or oblong-elliptic, 6–8 × 2–3 cm; base rounded or broadly cuneate; margin revolute; apex obtuse, apiculate; both surfaces glabrous; midrib prominently raised abaxially, grooved adaxially; lateral veins 13–15-paired, obscure on both surfaces. Inflorescence racemose-umbellate, usually 4–6-flowered; rachis conical, 1–2 mm, glabrous. Pedicel slender, pink, 0.5–1 cm, glabrous; calyx reddish, cupular; lobes 8–12 mm, irregular; corolla campanulate, crimson, 3–3.5 cm, with 5 deep

crimson nectar pouches at base; lobes 5, rounded, ca. 1.3 cm, emarginate; stamens 10, unequal, 1.5–3 cm, filaments white, glabrous; ovary ovoid, ca. 5 mm, glabrous; style ca. 2.5 cm, glabrous; stigma slightly swollen. Capsule not known. Fl. Apr–May.

• *Rhododendron* thickets, bamboo thickets; 3500–4000 m. S Xizang.

**450. *Rhododendron thomsonii*** J. D. Hooker, *Rhododendron* Sikkim-Himalaya 2: t. 12. 1851 [“*thomsonii*”].

半圆叶杜鹃 ban yuan ye du juan

Shrubs or small trees, 2–4 m tall; older branches pale gray-brown; bark exfoliating in flakes; young shoots greenish, glabrous. Petiole slender, 10–30 × ca. 2 mm, glabrous; leaf blade leathery, oblong-elliptic to ovate or orbicular to obovate, 3–7 × 2–6 cm; base rounded to cordate; margin reflexed; apex rounded, apiculate; abaxial surface glaucous, papillate, with some red glandular hairs, sometimes sparsely hairy; adaxial surface dark green, smooth, glabrous; midrib prominent and raised abaxially, flat adaxially; lateral veins 13–14-paired, conspicuous. Inflorescence racemose-umbellate, 4–8-flowered; rachis 5–12 mm, glabrous. Pedicel 1–2 cm, usually glabrous; calyx with upper half tinged red, lower half green, cupular to irregularly split; lobes 5, 2–12 mm, rounded or truncate, glabrous; corolla campanulate, deep crimson, 4–5 cm, fleshy, lobes 5, suborbicular, ca. 1 × 1.5 cm, emarginate; stamens 10, unequal, 2–3 cm; ovary conoid-cylindric, 5–7 mm, glabrous or glandular-hairy; style 3–3.5 cm, glabrous or densely glandular-hairy; stigma slightly swollen. Capsule oblong, 12–15 × 5–8 mm, glabrous, calyx persistent. Fl. Jun.

Mixed forests, thickets, rocky slopes; 3000–4000 m. S Xizang [Bhutan, N India, Nepal, Sikkim].

- 1a. Leaf blade orbicular to obovate; calyx 5–12 mm; ovary glabrous ..... 450a. subsp. *thomsonii*
- 1b. Leaf blade oblong-elliptic to ovate; calyx 2–3 mm; ovary densely stipitate-glandular ..... 450b. subsp. *lopsangianum*

**450a. *Rhododendron thomsonii*** subsp. ***thomsonii***

半圆叶杜鹃(原亚种) ban yuan ye du juan (yuan ya zhong)

Leaf blade orbicular to broadly obovate, 4–7 × 3–6 cm; apex obtuse, apiculate; both surfaces glabrous. Calyx irregularly split, 5–12 mm; ovary glabrous. Fl. May–Jun.

Mixed forests; 3000–4000 m. S Xizang [Bhutan, N India, Nepal, Sikkim].

**450b. *Rhododendron thomsonii*** subsp. ***lopsangianum*** (Cowan) D. F. Chamberlain, *Notes Roy. Bot. Gard. Edinburgh* 39: 420. 1982.

小半圆叶杜鹃 xiao ban yuan ye du juan

*Rhododendron lopsangianum* Cowan, *Notes Roy. Bot. Gard. Edinburgh* 19: 250. 1937; *R. thomsonii* var. *lopsangianum* (Cowan) T. L. Ming.

Leaf blade oblong-elliptic to ovate, 3–5 × 2–4 cm; abaxial

surface sometimes sparsely hairy. Calyx 2–3 mm; ovary densely shortly glandular-hairy. Fl. May.

• Thickets, rocky slopes; ca. 3800 m. S Xizang.

*Rhododendron thomsonii* var. *pallidum* Cowan (*Notes Roy. Bot. Gard. Edinburgh* 19: 253. 1937), described from Xizang, is thought to be a hybrid between subsp. *lopsangianum* and *R. campylocarpum*. It differs from subsp. *lopsangianum* in its relatively short calyx (2–8 mm), pink corolla, and glandular ovary.

**451. *Rhododendron viscidifolium*** Davidian, *Rhododendron Camellia Year Book* 21: 104. 1966.

铜色杜鹃 tong se du juan

Shrubs, 1–2 m tall; older branches pale gray-brown; bark exfoliating into thin and small irregular flakes; young shoots slender, smooth, glabrous. Petiole 12–20 mm, glandular, later smooth; leaf blade leathery, obovate or suborbicular, 4–7 × 3–5 cm; base cordate or suborbicular; apex obtuse, apiculate; abaxial surface glaucous, with scattered viscid glands; adaxial surface deep green, glabrous; midrib prominently raised abaxially, grooved adaxially; lateral veins 12–16-paired, flat on both surfaces, obscure. Inflorescence racemose-umbellate, 1- or 2-flowered; rachis 1–3 mm, puberulent or glabrous. Pedicel ca. 1 cm, glandular-hairy; calyx pale green to pink, cupular; lobes 5, 5–7 mm, ovate or rounded, glabrous, fringed with stalked glands; corolla tubular-campanulate, fleshy, coppery-red or pink, with dark flecks, 3.5–4 cm, nectar pouches present; lobes 5, ca. 1.5 × 2.5 cm, emarginate; stamens 10, unequal, 1.5–3 cm, filaments glabrous; ovary cylindric, ca. 6 × 3 mm, densely tomentose and shortly glandular-hairy; style 2.5–3 cm, glabrous; stigma slightly swollen. Capsule cylindric, ca. 20 × 9 mm, tomentose, base enclosed by persistent calyx. Fl. May.

• Valleys, stream banks; 2700–3300 m. SE Xizang.

**452. *Rhododendron hylaeum*** I. B. Balfour & Farrer, *Notes Roy. Bot. Gard. Edinburgh* 13: 265. 1922.

粉果杜鹃 fen guo du juan

Shrubs or small trees, 6–12 m tall; trunk massive, bark slate gray to purplish, smooth when mature; older branches smooth and glabrous; young shoots glandular. Petiole slender, 15–20 mm, glandular-hairy when young, glabrescent; leaf blade leathery, oblong-elliptic to obovate-elliptic, 8–15 × 2.5–3.5 cm; base cuneate to broadly cuneate; apex obtuse, apiculate; abaxial surface glaucous, glabrous; adaxial surface green, glabrous; midrib flat or grooved adaxially; lateral veins 15–18-paired, not conspicuous. Inflorescence racemose-umbellate, 10–12-flowered; rachis 20(–45) mm, glabrous. Pedicel stout, ca. 1 cm, glabrous or glandular; calyx greenish, cupular, fleshy; lobes 5, 3–5 mm, undulate, often deflexed; corolla tubular-campanulate, fleshy, pale rose or pink, with dark flecks, 4–4.5 cm, basal nectar pouches 5; lobes 5, ca. 1.5 × 2.5 cm, emarginate; stamens 10, unequal, 2–3.5 cm, filaments glabrous; ovary cylindric, ca. 6 × 4 mm, glabrous; style glabrous. Capsule 15–20 × 7–8 mm, glaucous, glabrous, calyx usually persistent. Fl. May–Jun, fr. Aug.

Forests, mountain slopes; 2800–3600 m. SE Xizang, NW Yunnan [NE Myanmar].



**453. *Rhododendron ramipilosum*** T. L. Ming, Acta Bot. Yunnan. 6: 159. 1984.

线裂杜鹃 xian lie du juan

Shrubs, ca. 1.5 m tall; older branches grayish; young shoots green, glabrous. Petiole ca. 15 mm, glabrous; leaf blade leathery, elliptic, ca.  $7 \times 3.5$  cm; base rounded; apex obtuse or rounded, apiculate; abaxial surface glabrous though with brown punctate glands; adaxial surface glabrous; midrib prominent and raised abaxially, grooved adaxially; lateral veins ca. 10-paired, flat on both surfaces. Inflorescence racemose-umbellate, 5–8-flowered; rachis ca. 6 mm, glabrous. Pedicel 2–2.6 cm, glabrous or sparsely glandular; calyx lobes 5, 5–8  $\times$  1.5–2 mm, linear-lanceolate, outer surface sparsely glandular, margin fringed; corolla and stamens not known; ovary conoidal, ca. 7 mm, glandular and with dendroid hairs; style 2–2.5 cm, glandular, with dendroid hairs to tip. Capsule not known. Fl. Jun–Jul.

• Alpine scrub. SE Xizang.

From the incomplete description, this species is probably allied to *Rhododendron bonvalotii* and *R. cerasinum*, sharing with them a style that is glandular throughout its length. However, *R. ramipilosum* differs in the relatively broader leaf blade, ca.  $2 \times$  as long as wide.

**454. *Rhododendron faucium*** D. F. Chamberlain, Notes Roy. Bot. Gard. Edinburgh 36: 124. 1978.

猴斑杜鹃 hou ban du juan

Shrubs or small trees, 1.5–6.5 m tall; trunk smooth; young shoots glabrous. Petiole 10–15 mm, with glandular hairs or dendroid hairs; leaf blade thinly leathery, obovate-elliptic or oblanceolate, 7–9  $\times$  1.5–3 cm; base broadly cuneate or  $\pm$  rounded; margin revolute; apex rounded, apiculate; abaxial surface greenish, epidermis epappillate, with a few scattered hairs near the midrib towards the base; adaxial surface green, glabrous; lateral veins 13–14-paired, obscure. Inflorescence racemose-umbellate, 5–10-flowered; rachis 10–20 mm, glabrous or puberulent. Pedicel slender, 0.5–1 cm, glandular-hairy or glabrous; calyx usually greenish, cupular, 3–4 mm, glandular-ciliate; corolla campanulate, pink to white tinged pink, with purple flecks, 3.5–4 cm, lobes 5, 1–1.5 cm, emarginate; stamens 10, 2–3 cm, filaments glabrous; ovary cylindrical, ca. 5  $\times$  3 mm, densely glandular; style ca. 3.5 cm, glabrous; stigma slightly swollen. Capsule not known. Fl. Apr.

Forest margins; 2600–3400 m. SE Xizang [NE India].

**455. *Rhododendron megalanthum*** M. Y. Fang, Acta Phytotax. Sin. 26: 66. 1988.

西藏杜鹃 xi zang du juan

Small trees or shrubs, 2–5 m tall; branchlets stout, glabrous. Petiole cylindrical, 20–30 mm, glabrous; leaf blade thickly leathery, elliptic or oblong-elliptic, 13–17  $\times$  4–6 cm; base rounded, asymmetrical; apex obtuse or acuminate; both surfaces glabrous; abaxial surface pale green; adaxial surface deep green; midrib conspicuous, raised abaxially, flat or slightly impressed adaxially; lateral veins 16–20-paired. Inflorescence racemose-umbellate, 2- or 3-flowered; rachis 5–7 mm, glabrous. Pedicel stout, 1.5–2 cm, glabrous; calyx cupular; lobes 5, 5–7 mm, rounded, glabrous; corolla campanulate or funnel-campanulate,

deep rose, 5.5–7 cm, base with 5 deep purple nectar pouches; lobes 5, orbicular, 2–2.5 cm in diam., emarginate; stamens 12, unequal, 2.5–3.5 cm, filaments glabrous or puberulent at base; ovary ovoid, 5–7 mm, glandular, densely setose; style 5–6 cm, setose and glandular at base; stigma swollen. Capsule not known. Fl. Mar–Apr.

• Mixed forests, valleys, stream banks; 1800–2200 m. SE Xizang.

**456. *Rhododendron hookeri*** Nuttall, Hooker's J. Bot. Kew Gard. Misc. 5: 359. 1853.

串珠杜鹃 chuan zhu du juan

Shrubs or small trees, 1–4 m tall; young shoots glaucous becoming green, with a waxy farina, glabrous. Petiole cylindrical, 15–20 mm, glabrous; leaf blade leathery, oblong-elliptic or obovate-elliptic, 8–12.5  $\times$  3–5 cm; base rounded; apex obtuse or apiculate; abaxial surface glaucous, glabrous except for lateral veins with well-developed fasciculate hairs; adaxial surface green, glabrous; midrib prominently raised abaxially, flat adaxially; lateral veins 11–13-paired, slightly raised abaxially. Inflorescence racemose-umbellate, 10–15-flowered; rachis 10–25 mm, glabrous. Pedicel slender, 1–1.5 cm, glabrous; calyx membranous, pink; lobes 5, 5–7 mm, unequal in size, suborbicular, glabrous; corolla campanulate or tubular-campanulate, deep rose to crimson, 3.5–4 cm, base with 5 dark nectar pouches; lobes 5, suborbicular, emarginate; stamens 9 or 10, unequal, 2.5–3.5 cm, filaments glabrous; ovary cylindrical-oval, ca. 5 mm; style glabrous. Capsule 20–25 mm, base enclosed by persistent calyx. Fl. Mar, fr. Jun.

Thickets, S-facing mountain slopes; 2200–3000 m. SE Xizang [NE India].

**457. *Rhododendron meddianum*** Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 136. 1920.

红萼杜鹃 hong e du juan

Shrubs, 1–2 m tall; older branches grayish; bark falling off in small irregular flakes; young shoots stout, glabrous or glandular. Petiole flat, 10–15  $\times$  5–6 mm, glabrous; leaf blade leathery or thinly leathery, obovate-elliptic to broadly elliptic, broadest above middle of blade, 6–10  $\times$  3–5 cm; base rounded or cuneate; margin reflexed; apex obtuse or rounded, apiculate; abaxial surface pale green, glabrous; adaxial surface green, glabrous; midrib prominently raised abaxially, impressed adaxially; lateral veins 13–15-paired. Inflorescence racemose-umbellate, usually 5–10-flowered; rachis 2–3 mm, glabrous. Pedicel 1–1.5 cm, glabrous or glandular; calyx crimson, cupular; lobes 5, 5–8 mm, unequal; corolla tubular-campanulate, deep rose to deep crimson, 4–5 cm, base with 5 black-crimson nectar pouches; lobes 5, suborbicular, 1.5–2  $\times$  2.5–3 cm, emarginate; stamens 10, 3–4 cm, filaments glabrous; ovary cylindrical, glabrous or glandular; style glabrous. Capsule slightly curved, 15–20  $\times$  6–7 mm, glabrous or glandular. Fl. Apr–Jun, fr. Sep.

*Rhododendron* thickets, bamboo brakes, stream banks, rocky slopes; 3000–3700 m. W Yunnan [NE Myanmar].

1a. Young shoots, pedicel, and (usually) ovary glabrous; leaf blade leathery

..... 457a. var. *meddianum*

- 1b. Young shoots glandular; pedicel and ovary densely glandular; ovary viscid; leaf blade thinly leathery ..... 457b. var. *atrokermesinum*

**457a. *Rhododendron meddianum* var. *meddianum***

红萼杜鹃(原变种) hong e du juan (yuan bian zhong)

Young shoots stout, glabrous. Leaf blade leathery. Pedicel glabrous; ovary usually glabrous.

*Rhododendron* thickets, rocky slopes; 3000–3700 m. W Yunnan [NE Myanmar].

**457b. *Rhododendron meddianum* var. *atrokermesinum*** Tagg in J. B. Stevenson, Sp. Rhodod. 742. 1930.

腺房红萼杜鹃 xian fang hong e du juan

Young shoots glandular. Leaf blade thinly leathery. Pedicel densely glandular; ovary densely glandular, viscid.

*Rhododendron* thickets, stream banks; ca. 3200 m. W Yunnan [NE Myanmar].

**458. *Rhododendron cyanocarpum*** (Franchet) Franchet ex W. W. Smith, Trans. Bot. Soc. Edinburgh 26: 275. 1914.

蓝果杜鹃 lan guo du juan

*Rhododendron thomsonii* J. D. Hooker var. *cyanocarpum* Franchet, J. Bot. (Morot) 9: 389. 1895; *R. cyanocarpum* var. *eriphyllum* (I. B. Balfour & W. W. Smith) Tagg; *R. hedythamnium* I. B. Balfour & Forrest var. *eglandulosum* Handel-Mazzetti.

Shrubs or small trees 2–4 m tall; older branches grayish, bark falling off in flakes; branchlets 4–5 mm in diam. below inflorescence; young shoots greenish, glabrous. Petiole often slightly winged, 20–30 × 3–4 mm; leaf blade leathery, broadly elliptic to suborbicular, 8–13 × 5–9 cm; base rounded; margin reflexed; apex apiculate; abaxial surface glaucous, glabrous or with a few scattered hairs; adaxial surface deep green, glabrous; midrib flat adaxially; lateral veins 11–14-paired, slightly impressed on both surfaces. Inflorescence 5–9-flowered; rachis 8–15 mm, pubescent or glabrous. Pedicel 1–2 cm, glabrous; calyx pale pink, cupular, fleshy; lobes 5, 7–12 mm, glabrous; corolla campanulate or funnel-campanulate, fleshy, creamy-white to clear pink, flecks lacking, 5–6 cm, base with dark nectar pouches; lobes 5, rounded, ca. 1.5 × 2.3 cm, emarginate; stamens 10, unequal, 2–4 cm, filaments glabrous; ovary conical 6–7 mm, glabrous or with a few glands; style 2.5–3 cm, glabrous. Capsule oblong, blunt, 12–20 × 7–10 mm, glaucous, base usually enclosed by persistent calyx. Fl. Apr–May, fr. Aug–Oct.

• *Pinus* forest margins, *Rhododendron* thickets; 3000–4000 m. W Yunnan.

**459. *Rhododendron eclecticum*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 105. 1920.

杂色杜鹃 za se du juan

Shrubs, 2–3 m tall; older branches grayish, bark falling off in flakes; young shoots usually shortly glandular-hairy. Petiole flat, usually narrowly winged, 5–30 mm; leaf blade leathery, obovate-elliptic to elliptic, sometimes fiddle-shaped, 5–12 × 2–

5 cm; base cuneate to rounded; apex obtuse, apiculate to retuse; abaxial surface pale green, glabrous except near midrib; adaxial surface deep green, glabrous; midrib raised abaxially, flat adaxially; lateral veins 9–12-paired, conspicuous abaxially. Inflorescence 5–10-flowered; rachis 5–12 mm, glabrous. Pedicel 1–2 cm, glabrous; calyx cupular; lobes 5, 7–10 mm, unequal in size; corolla tubular-campanulate, white, rose to deep crimson, or rarely yellowish, 3.5–5 cm, lobes 5, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.8–3 cm, filaments pubescent at base; ovary cylindrical-ovoid, ca. 5 mm, densely glandular-hairy; style ca. 3 cm, glabrous. Capsule ca. 12 × 6 mm, glaucous, base enclosed by persistent calyx.

*Pinus* forests, thickets, *Rhododendron* scrub; 2600–4000 m. SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

- 1a. Leaf blade fiddle-shaped, with straight hairs near midrib abaxially; petiole 4–10 mm; corolla usually deep crimson, rarely pale yellow ..... 459a. var. *eclectum*
- 1b. Leaf blade not fiddle-shaped, with curved hairs near midrib abaxially; petiole 8–30 mm; corolla white or yellowish to rose ..... 459b. var. *bellatulum*

**459a. *Rhododendron eclecticum* var. *eclectum***

杂色杜鹃(原变种) za se du juan (yuan bian zhong)

*Rhododendron brachyandrum* I. B. Balfour & Forrest; *R. eclecticum* var. *brachyandrum* (I. B. Balfour & Forrest) Cowan & Davidian.

Petiole 4–10 mm; leaf blade fiddle-shaped, 5–12 × 2.5–5 cm; abaxial surface with dense straight hairs near midrib. Corolla deep rose to crimson, rarely pale yellow. Fl. May–Jun, fr. Aug–Oct.

*Pinus* forests, *Rhododendron* thickets; 3000–4000 m. SW Sichuan, SE Xizang, NW Yunnan [NE Myanmar].

**459b. *Rhododendron eclecticum* var. *bellatulum*** Tagg in J. B. Stevenson, Sp. Rhodod. 739. 1930.

长柄杂色杜鹃 chang bing za se du juan

Petiole 8–30 mm; leaf blade not fiddle-shaped, 5–7.5 × 2–3.5 cm; abaxial surface puberulent with curved hairs near midrib. Corolla white or yellowish to rose, always pale.

• Thickets, *Rhododendron* scrub; 2600–3800 m. SE Xizang, NW Yunnan.

Field observations suggest that var. *bellatulum* is a hybrid between *Rhododendron eclecticum* and *R. selense*.

**460. *Rhododendron stewartianum*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 211. 1912.

多趣杜鹃 duo qu du juan

*Rhododendron aiolosalpinx* I. B. Balfour & Farrer; *R. nipobolium* I. B. Balfour & Farrer; *R. stewartianum* var. *aiolosalpinx* (I. B. Balfour & Farrer) Cowan & Davidian; *R. stewartianum* var. *tantulum* Cowan & Davidian.

Small shrubs, 1–2 m tall; young shoots glabrous. Petiole

5–10 mm, glabrous; leaf blade leathery, obovate to elliptic, broadest above middle of blade, 5.5–7.5 × 2.5–3.5 cm; base broadly cuneate or rounded; margin reflexed; apex obtuse, apiculate; abaxial surface with mammillate epidermis, thinly persistently fawn-farinoso; adaxial surface green, glabrous; midrib prominent, raised abaxially; lateral veins 11–13-paired, obscure. Inflorescence 3–7-flowered; rachis conical, 1–2 mm, glabrous. Pedicel 1–1.5 cm, glandular at first, later smooth; calyx cupular; lobes 5, 5–10 mm, unequal, glabrous; corolla campanulate or tubular-campanulate, white or soft yellow to pale rose, variable in color, 3.5–4 cm; lobes 5, orbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.5–2.5 cm, filaments pubescent at base; ovary cylindrical, ca. 4 mm, densely glandular; style ca. 2.5 cm, glabrous, stigma small. Capsule slightly curved, 20–25 × ca. 8 mm, base enclosed by persistent calyx. Fl. May–Jun, fr. Oct–Nov.

*Rhododendron* thickets, bamboo brakes; 3000–4000 m. E Xizang, NW Yunnan [NW Myanmar].

**461. *Rhododendron eurysiphon*** Tagg & Forrest in J. B. Stevenson, Sp. Rhodod. 708. 1930.

**6. *Rhododendron* subg. *Azaleastrum*** Planchon ex K. Koch, Dendrologie 2(1): 159. 1872.

马银花亚属 *ma yin hua ya shu*

He Mingyou (何明友); David F. Chamberlain

Shrubs or small trees, evergreen; new foliage shoots arising from subterminal buds and from axils of leaves; young shoots not scaly, glabrous or pubescent and glandular-setose. Leaf blade not scaly. Inflorescence subterminal, 1- to several-flowered. Calyx lobes large or inconspicuous; corolla rotate-funnelform to narrowly funnelform, tube usually shorter than the lobes, rarely longer; stamens 5 or 10, unequal; filaments pubescent; ovary 5–6-locular, glabrous, pubescent or shortly glandular-hairy; style glabrous or shortly setose near base. Capsule conical ovoid or cylindrical, glabrous or pubescent, with glandular setae.

About 30 species: from China and Japan to peninsular Malaysia and Indonesia; 26 species (18 endemic) in China.

Recent evidence from DNA sequencing suggests that the two sections in *Rhododendron* subg. *Azaleastrum* are only distantly related; each may therefore merit subgeneric rank in its own right. For the most recent Chinese account of *R.* subg. *Azaleastrum* see Gao Lianming (Phylogeny of *Rhododendron* subg. *Azaleastrum sensu* Sleumer (Ericaceae). PhD thesis, Kunming Institute of Botany. 2002), who (pers. comm., 2004) reviewed the same subgenus in the present account.

- 1a. Stamens 5; calyx lobes large and broad; capsule conical-ovoid, upper valves and style not contiguous when mature; seeds without terminal appendages ..... 1. *R.* sect. *Azaleastrum*
- 1b. Stamens 10; calyx lobes inconspicuous or rarely narrowly lanceolate; capsule cylindrical, upper valves and style contiguous when mature; seeds with short caudate appendages at both ends ..... 2. *R.* sect. *Choniastrum*

**1. *Rhododendron* sect. *Azaleastrum*** Planchon ex Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 16(9): 15, 45. 1870.

马银花组 *ma yin hua zu*

Shrubs or small trees, evergreen. Leaf blade ovate, broadly ovate, elliptic, elliptic-ovate or oblong-elliptic, [sometimes sparsely puberulent when young,] glabrous except on midrib. Inflorescence [subapical,] 1-flowered. Calyx lobes large and broad, glabrous or with short-glandular hairs or pubescence on the margin; corolla rotate or broadly funnelform; tube shorter than the lobes, rarely longer; lobes spreading; stamens 5, unequal; ovary 5-celled, with short glandular hairs; style glabrous, or with short glandular hairs near the base. Capsule conical, ovoid. Seeds without terminal appendages.

About nine species: China, Laos, Myanmar, Vietnam; eight species (five endemic) in China.

The present authors have seen no specimens of *Rhododendron taichungianum* S. S. Ying (Mem. Coll. Agric. Natl. Taiwan Univ. 31: 29. 1991), described from Taiwan. It is therefore not treated in this account.

- 1a. Style glandular-hairy for most of its length; leaf blade sublanceolate, 6–8 × 2–2.3 cm ..... 469. *R. medoense*
- 1b. Style glabrous; leaf blade various.
  - 2a. Corolla broadly tubular to tubular-funnelform, lobes shorter than tube, dark red; pedicel 4–8 mm ..... 468. *R. vialii*
  - 2b. Corolla rotate, lobes longer than tube, white or various shades of pink or purple (not known for *R. tianlinense*); pedicel 8–25 mm.

宽筒杜鹃 *kuan tong du juan*

Shrubs, 1–2 m tall; older branches greenish, glabrescent; branchlets slender, 2–3 mm in diam. below inflorescence, shortly glandular-hairy. Petiole 5–6 mm, glandular; leaf blade leathery, long-elliptic or oblong, 3–5.5 × 1.5–2.5 cm; base rounded; apex rounded, apiculate; both surfaces glabrous; midrib prominent and raised abaxially, flat adaxially; lateral nerves obscure on both surfaces. Inflorescence racemose-umbellate, 3–5-flowered; rachis 3–5 mm, tomentose. Pedicel 1–2 cm, sparsely glandular-hairy; calyx cupular; lobes 5, 3–4 mm; outer surface sparsely glandular-hairy; corolla campanulate, creamy white to pale rose, with crimson flecks, 3.5–4 cm, base with nectar pouches; lobes 5, suborbicular, ca. 1.5 × 2 cm, emarginate; stamens 10, unequal, 1.3–3 cm, filaments stout, pubescent at base; ovary ovoid, ca. 5 mm, densely glandular; style glabrous. Capsule oblong, slightly curved, 15–20 × ca. 6 mm, base enclosed by persistent calyx.

• *Rhododendron* thickets, scrub, stony slopes; ca. 4000 m. SE Xizang.

- 3a. Leaf blade lanceolate, oblong-lanceolate or elliptic-lanceolate; style 2–2.2 cm.  
 4a. Young shoots densely white-pubescent; calyx lobes ca. 7 mm; pedicel 15–25 mm ..... 466. *R. leptothrium*  
 4b. Young shoots glabrous; calyx lobes ca. 5 mm; fruiting pedicel 13–15 mm ..... 467. *R. tianlinense*  
 3b. Leaf blade ovate, broadly ovate, elliptic, elliptic-ovate or oblong-elliptic; style 2.4–4 cm.  
 5a. Calyx lobe margin glabrous, sometimes pubescent near the base on outer surface; capsule 8–9 mm.  
 6a. Leaf blade ovate or elliptic-ovate; corolla purplish, purple or pink, with purple flecks within;  
 stamens 1.5–2.1 cm ..... 462. *R. ovatum*  
 6b. Leaf blade elliptic-oblong, rarely obovate-oblong; corolla white flushed red; stamens  
 2–2.5 cm ..... 463. *R. mitriforme*  
 5b. Calyx lobe margin densely glandular-hairy; capsule 4–7 mm.  
 7a. Bud-scales hairy on outer surface; corolla pink or purple; young shoots gray-brown pubescent  
 and sparsely glandular-setose ..... 464. *R. bachii*  
 7b. Bud-scales glabrous on outer surface; corolla white; young shoots glabrous or with a few  
 short glandular hairs only ..... 465. *R. hongkongense*

**462. *Rhododendron ovatum*** (Lindley) Planchon ex Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 15: 230. 1871.

马银花 ma yin hua

*Azalea ovata* Lindley, J. Hort. Soc. London 1: 149. 1846;  
*Rhododendron lamprophyllum* Hayata; *R. ovatum* var. *lamprophyllum* (Hayata) Y. C. Liu; *R. ovatum* var. *prismatum* P. C. Tam; *R. ovatum* var. *setuliferum* M. Y. He.

Shrubs, 2–4(–6) m tall; young shoots sparsely glandular-hairy and pubescent. Petiole ca. 8 mm, narrowly winged, pubescent; leaf blade ovate to oblong-elliptic, 3.5–5 × 1.9–2.5 cm; base rounded or rarely broadly cuneate; margin slightly curved; apex acute and mucronate; adaxial surface glabrous or pubescent; lateral and net veins inconspicuous abaxially. Inflorescence subapical, 1-flowered. Pedicel 0.8–1.8 cm, densely gray-brown pubescent, also with short glandular hairs; calyx deeply lobed; lobes ovate or oblong-ovate, 4–5 × 3–4 mm, densely gray-brown pubescent, also sparsely glandular hairy at base abaxially, margin glabrous; corolla rotate, purplish, purple, or pink, with purple flecks inside tube, 1.6–2.3 cm, outer surface glabrous, inner surface puberulent; lobes oblong-obovate or broadly obovate; stamens 5, unequal, 1.5–2.1 cm, slightly shorter than corolla, filaments flat, pubescent in lower half; ovary ovoid, with dense short glandular hairs; style ca. 2.4 cm, exserted, glabrous. Capsule broadly ovoid, ca. 8 × 6 mm, densely gray-brown pubescent, also sparsely glandular. Fl. Apr–May, fr. Jul–Oct.

• Thickets; 300–1600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang.

Gao Lianming (pers. comm.) notes that recent field studies have shown that the differences used to separate var. *setuliferum* from the type of the species, namely the narrower leaf blade and the style with dense bristles near the base, are not even borne out by the type of this variety, and in any case these features vary continuously between the two varieties.

**463. *Rhododendron mitriforme*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 91. 1982.

头巾马银花 tou jin ma yin hua

Shrubs or small trees, up to 7 m tall; young shoots purple or purplish, subglabrous. Petiole stout, 6–13 mm, gray-blue when dried, subglabrous; leaf blade elliptic-oblong, rarely obovate-oblong, 4–10 × 2–3 cm; base broadly cuneate or sub-

rounded; margin entire; apex acuminate or obliquely caudate-acute. Inflorescence 1-flowered. Pedicel 1–1.7 cm, glabrous or with gland-tipped bristles; calyx persistent, large, enclosing capsule; lobes obovate-elliptic or ovate, ca. 10 × 8 mm or ca. 5 mm, glabrous; apex obtuse; corolla rotate, white flushed with red or purple, sometimes with dark purple flecks on lobes, 2–2.5 cm; lobes 5, ovate-elliptic or obovate, 1.3–1.7 cm wide, glabrous or pubescent near base within; stamens 5, unequal, 2–2.5 cm, shorter than to as long as corolla, filaments white-puberulent in lower half; ovary conical to conical-ovoid, ca. 3–3.5 mm, shortly glandular setose; style 3–4 cm, exserted, glabrous. Capsule ovoid, ca. 9 × 8 mm, with dark brown flecks and glandular hairs; style persistent, ca. 4 cm. Fl. Apr–May, fr. Sep–Oct.

• Dense forests, forest margins, slopes, valleys; 500–1600 m. W Guangdong, E Guangxi, SW Hunan.

- 1a. Pedicel glabrous ..... 463a. var. *mitriforme*  
 1b. Pedicel glandular-setulose ..... 463b. var. *setaceum*

**463a. *Rhododendron mitriforme* var. *mitriforme***

头巾马银花(原变种) tou jin ma yin hua (yuan bian zhong)

*Rhododendron xinganense* G. Z. Li, p.p., excl. typ.

Pedicel ca. 1 cm, glabrous; calyx lobes obovate-elliptic, ca. 10 × 8 mm; corolla white flushed red; lobes ovate-elliptic, shorter than to as long as corolla, 1.3–1.6 cm wide, glabrous; ovary conical, ca. 3 mm; style ca. 3 cm. Capsule with dark brown flecks and glandular setae. Fl. Apr–May, fr. Sep–Oct.

• Dense forests, valleys; 500–800(–1300) m. W Guangdong, E Guangxi, SW Hunan.

**463b. *Rhododendron mitriforme* var. *setaceum*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 91. 1982.

腺刺马银花 xian ci ma yin hua

*Rhododendron xinganense* G. Z. Li, p.p.

Pedicel (0.1–)1.7 cm, glandular-setulose; calyx lobes ovate, ca. 5 mm; corolla purple, with dark purple flecks on lobes; lobes obovate, shorter than corolla, ca. 1.7 cm wide, pubescent near base within; ovary black, conical-ovoid, ca. 3.5 mm; style 3.5–4 cm. Capsule enlarged, with short glandular hairs on margin when young. Fl. Apr, fr. Sep–Oct.

• Dense forests, forest margins, slopes; 900–1600 m. NE Guangxi (Xing'an).

The amplified description given for var. *setaceum* is based on a specimen from Guangxi: Xing'an County, Miao'er Shan, *G. Z. Li 149*.

**464. *Rhododendron bachii*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 102. 1913.

腺萼马银花 xian e ma yin hua

*Rhododendron hangzhouense* W. P. Fang & M. Y. He; *R. sanidodeum* P. C. Tam.

Shrubs, 2–3(–8) m tall; young shoots gray-brown pubescent and sparsely glandular-setose. Petiole ca. 5 mm, pubescent and glandular-hairy; leaf blade subleathery, ovate or ovate-elliptic, 3–5.5 × 1.5–2.5 cm; base broadly cuneate or subrounded; margin finely undulate-crenate; both surfaces glabrous except for the pubescent midrib abaxially. Inflorescence subapical, 1-flowered. Pedicel 1.2–1.6 cm, pubescent and glandular-hairy; calyx deeply lobed; lobes ovate or obovate, 3–5 × 3–4 mm, puberulent abaxially or glandular-hairy, margin with dense short glandular hairs, apex obtuse and fluted; corolla rotate, purple or purplish, with dark red flecks on upper three lobes, 1.8–2.1 cm; lobes broadly obovate, ca. 1.4 cm wide, pubescent near the base within; stamens 5, unequal, 2–2.8 cm, as long as or slightly shorter than corolla; filaments flat, puberulent below the middle; ovary densely shortly glandular-hairy; style 2.5–3.2 cm, slightly curved, exerted, longer than stamens, glabrous. Capsule ovoid, ca. 7 × 6 mm, densely shortly glandular-hairy. Fl. Apr–May, fr. Jun–Oct.

• Open forests; 600–1600 m. Anhui, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang.

The characters used to separate *Rhododendron bachii* from *R. ovatum* are fairly trivial, especially those relating to the calyx indumentum. Furthermore, there is continuous variation in these characters, suggesting that *R. bachii* should be treated as a synonym of *R. ovatum*.

**465. *Rhododendron hongkongense*** Hutchinson in J. B. Stevenson, Sp. Rhodod. 562. 1930.

白马银花 bai ma yin hua

*Azalea myrtifolia* Champion, Bot. Mag. 77: t. 4609. 1851, not *Rhododendron myrtifolium* Loddiges (1824), nor Schott & Kotschy (1851).

Shrubs, 1–2(–7) m tall; young shoots dense, fine and firm, glandular hairy, glabrescent. Petiole 4–7(–10) mm, puberulent above; leaf blade leathery, elliptic, elliptic-ovate or obovate-lanceolate, 2.5–6.5 × 1.5–2.3 cm; base ± cuneate; margin slightly revolute; apex acute and mucronate; abaxial surface obscurely glaucous; adaxial surface dark green when dried, sparsely puberulent on midrib only; midrib prominent on both surfaces; lateral veins conspicuous on abaxial surface. Inflorescences subapical, usually in clusters of 2–4, 1-flowered. Pedicel 1–1.5 cm, densely glandular-hairy and pubescent; calyx lobes papery, oblong-ovate, margin with short glandular hairs, apex fimbriate; corolla rotate, white or pale pink, with darker flecks on upper lobes, 2–3 cm, tube ca. 6 mm, ca. 5 mm wide at base; lobes obovate, 1.8–2.4 cm; stamens 5, shorter than corolla, filaments

flat, with spreading white pubescence below middle; ovary ovoid, shortly glandular-hairy; style longer than stamens, exerted, glabrous. Capsule subovoid to broadly ovoid, 4–8 mm, shortly glandular-hairy or tuberculate only. Fl. Mar–Apr, fr. Jul–Dec.

• Sparse forests; 600–1600 m. Guangdong.

**466. *Rhododendron leptothrium*** I. B. Balfour & Forrest, Notes Roy. Bot. Gard. Edinburgh 11: 84. 1919.

薄叶马银花 bao ye ma yin hua

*Rhododendron australe* I. B. Balfour & Forrest.

Shrubs or small trees, 3–4(–6) m tall; young shoots densely white-pubescent. Petiole 10–18 mm, densely pubescent or sparsely glandular-hairy; leaf blade subleathery, lanceolate or oblong-lanceolate, 4–12 × 1.8–3.5 cm; base cuneate; margin shallowly undulate, slightly revolute, tapering toward truncate apex; adaxial surface pubescent only on midrib; midrib and lateral veins prominent on both surfaces. Inflorescences subapical, usually in clusters of 2–4, 1-flowered. Pedicel 1.5–2.5 cm, densely shortly glandular-setose; calyx lobes large, elliptic or oblong-ovate, 6–8 mm, glandular hairy at base on outer surface; margin glabrous or glandular-ciliate, apex obtuse; corolla rotate, pale rose to magenta-purple, with dark flecks on upper lobes, tube shorter than lobes; lobes obovate, 2–2.5 cm; stamens 5, unequal, shorter than corolla, filaments flat, pubescent below the middle; ovary ovoid, ca. 3 mm, apex glandular hairy; style ca. 2.2 cm, longer than stamens, exerted, glabrous. Capsule ovoid, ca. 6 mm, glandular and glandular-setose, surrounded by persistent calyx lobes. Fl. May–Jun, fr. Sep–Nov.

Thickets; 1700–3200 m. SW Sichuan, SE Xizang, W Yunnan [Myanmar].

**467. *Rhododendron tianlinense*** P. C. Tam, Surv. Gen. Rhododendron S. China, 112. 1983.

田林马银花 tian lin ma yin hua

Shrubs or small trees, ca. 4 m tall; young shoots glabrous. Petiole 10–19 mm, sulcate and puberulent adaxially; leaf blade papery, lanceolate or elliptic-lanceolate, 5.5–9.5 × 1.5–3 cm; base narrowly cuneate; margin slightly revolute; apex oblong-acuminate and mucronate; both surfaces pubescent along midrib; lateral veins 7–10-paired, conspicuous on both surfaces. Inflorescence subapical, 1-flowered. Fruiting pedicel slender, 1.3–1.5 cm, glandular-setose; calyx lobes (in fruit) 5, oblong-lanceolate or oblong-ovate, ca. 5 × 3 mm, glandular-setose at base abaxially, glabrous within, margin sparsely shortly glandular-setose; corolla not known; persistent style ca. 2 cm, glabrous. Capsule ovoid, 5–6 × ca. 5 mm, densely shortly glandular-hairy or glandular-setose.

• Dense mountain forests, usually with *Pinus* and bamboos; ca. 1200 m. NW Guangxi, ?SE Guizhou.

**468. *Rhododendron vialii*** Delavay & Franchet, J. Bot. (Morot) 9: 398. 1895 [“*viali*”].

红马银花 hong ma yin hua

Shrubs, 2–4.5 m tall; young shoots densely pubescent.

Petiole 15–22 mm, glabrous or puberulent; leaf blade subleathery, lanceolate, oblong-lanceolate or obovate-lanceolate, 4–9(–12) × 1.8–4 cm; base narrowly cuneate; margin slightly revolute; apex acuminate, cartilaginous-mucronate; lateral veins reaching margin. Inflorescence subapical, 1-flowered. Pedicel 0.4–0.8 cm, glandular-hairy; calyx deeply lobed; lobes dark red, oblong-rounded, 5–6 mm, densely glandular-setose at base abaxially, margin with dense sessile glands; corolla broadly tubular or tubular-funnelform, dark red, ca. 2.5 cm; tube broadly cylindrical, ca. 15 mm, ca. 4 mm wide at base, outer surface glabrous, inner surface puberulent; lobes oblong, ca. 1 cm, glabrous, apex slightly emarginate; stamens 5, as long as or slightly shorter than corolla; filaments glabrous. Capsule ovoid, ca. 6 × 5 mm, densely glandular-setose. Fl. Feb–Apr, fr. Aug–Nov.

Thickets; 1200–1800(–2800) m. S Yunnan [Laos, Vietnam].

**469. *Rhododendron medoense*** W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 3(1): 1. 1983 var. **medoense**

**2. *Rhododendron* sect. *Choniastrum*** Franchet, Bull. Soc. Bot. France 33: 229. 1886.

长蕊杜鹃组 *chang rui du juan zu*

Shrubs or small trees, evergreen; branches glabrous or glandular setose. Inflorescence axillary or terminal, 1–7-flowered; corolla funnelform to campanulate; stamens 10; style as long as or longer than stamens. Capsule oblong-cylindric or cylindric, glabrous or puberulent, rarely glandular setose; style contiguous and valved on upper part when mature. Seeds with short-caudate appendages at both ends, ornamented.

Twenty species: from China and Japan to peninsular Malaysia and Indonesia; 18 species (13 endemic) in China.

- 1a. Pedicel and sometimes ovary densely glandular-setose.
  - 2a. Inflorescence usually 1-flowered; petiole 0–6 mm ..... 487. *R. substipitatum*
  - 2b. Inflorescence 5–7-flowered; petiole 10–17 mm.
    - 3a. Young shoots, petioles, midrib and abaxial surface of leaf blade sparsely setose or glandular-setose; corolla purplish or pink, 4.5–5 cm ..... 484. *R. henryi*
    - 3b. Young shoots, petioles, and both surfaces of leaf blade densely setose or glandular-setose; corolla white or reddish, 5–6 cm ..... 486. *R. championiae*
- 1b. Pedicel glabrous or pubescent; ovary glabrous or pubescent, sometimes with a few glandular setae.
  - 4a. Pedicel pubescent, tomentose or setose.
    - 5a. Inflorescence terminal, 10–15(–17)-flowered; leaves scattered along the stems ..... 480. *R. cavaleriei*
    - 5b. Inflorescence subterminal, 1–8-flowered; leaves in apical clusters.
      - 6a. Inflorescence 1–3-flowered; pedicel 1.5–2 cm.
        - 7a. Pedicel yellowish brown pubescent; corolla white with yellowish flecks, 4.5–6 cm ..... 482. *R. hancockii*
        - 7b. Pedicel sparsely reddish setose; corolla cherry red, 3–4.5 cm ..... 483. *R. tutcherae*
      - 6b. Inflorescence (3–)4–8-flowered; pedicel 2–3.5 cm.
        - 8a. Corolla 5–5.5 cm; young shoots glandular-setose ..... 485. *R. dayaoshanense*
        - 8b. Corolla 3–3.5 cm; young shoots glabrous ..... 471. *R. stamineum*
  - 4b. Pedicel glabrous.
    - 9a. Inflorescence (3–)4–8-flowered.
      - 10a. Pedicel 1–2 cm.
        - 11a. Calyx lobes minute, triangular, margin usually glabrous; leaves usually in apical clusters ..... 474. *R. truncatovarium*
        - 11b. Calyx lobes sometimes well-developed, ± linear, margin fimbriate-ciliate or glandular pectinate; leaves often scattered along the stems.
          - 12a. Petiole ca. 1 cm; corolla ca. 5 cm, pink to purplish ..... 476. *R. westlandii*
          - 12b. Petiole 1.5–2 cm; corolla 4.5–4.8 cm, white flushed yellow ..... 477. *R. huguansense*
      - 10b. Pedicel 2.5–3 cm; calyx margin usually glabrous; leaves usually in apical clusters.
        - 13a. Calyx lobes narrowly triangular to narrowly lingulate, 5–20 mm, often ciliate; ovary truncate at insertion of style, densely yellowish tomentose ..... 481. *R. longilobum*

墨脱马银花 *mo tuo ma yin hua*

Shrubs, ca. 1 m tall; young shoots cylindric, usually subglabrous. Petiole 15–25 mm, puberulent when young; leaf blade subleathery, oblong-lanceolate, rarely sublanceolate, 6–8 × 2–2.3 cm; base broadly cuneate or subrounded; apex acuminate and mucronate; both surfaces sparsely puberulent when young. Flower not seen. Fruiting pedicel ca. 1.5 cm, puberulent, also with some short glandular hairs; calyx lobes (in fruit) ovate or long-ovate, 6–8 mm, with short glandular hairs at base abaxially, margin glandular-ciliate; corolla not known; persistent style 3.5–4 cm, sparsely shortly stalked glandular hairy for ca. 4/5 its length. Capsule ovoid, ca. 6 mm, densely shortly glandular hairy. Fr. Jul–Aug.

• Forests; 1800–2000 m. SE Xizang.

Chinese plants belong to var. *medoense*; var. *adenostylum* W. P. Fang & M. Y. He (Bull. Bot. Res., Harbin 3(1): 2. 1983) was described from Myanmar.

- 13b. Calyx reduced to an undulate rim or 5 minute teeth, glabrous; ovary tapering into style, glabrous or densely gray-white-tomentose.  
 14a. Lateral veins obsolete ..... 471. *R. stamineum*  
 14b. Lateral veins reticulate and conspicuous on both surfaces ..... 472. *R. feddei*
- 9b. Inflorescence 1–3-flowered.  
 15a. Petiole 2–8 mm.  
 16a. Calyx lobes 5–13 mm; corolla white, 4.5–6 cm ..... 482. *R. hancockii*  
 16b. Calyx lobes 1–2 mm; corolla pale rose or rose-violet, 2.5–4 cm.  
 17a. Flower bud scales uniformly gray-white pubescent on outer surface; corolla 3.2–4 cm; capsule apex acuminate ..... 470. *R. taishunense*  
 17b. Flower bud scales pubescent only on margin and at apex on outer surface; corolla ca. 2.5 cm; capsule apex truncate ..... 479. *R. vaniottii*
- 15b. Petiole 10–15 mm.  
 18a. Corolla cherry red, without markings ..... 483. *R. tutcheriae*  
 18b. Corolla pink to white, with a distinct darker blotch on upper lobe.  
 19a. Ovary tapering into style; pedicel 1–2 cm; inflorescence 2- or 3-flowered ..... 473. *R. moulmainense*  
 19b. Ovary apex truncate; pedicel 2–3 cm; inflorescence often 1-flowered.  
 20a. Corolla 5–5.7 cm; flower bud scales gray-white pubescent on outer surface ..... 475. *R. mackenzianum*  
 20b. Corolla 3.5–4.8 cm; flower bud scales pubescent only on margin and at apex ..... 478. *R. latoucheae*

**470. *Rhododendron taishunense*** B. Y. Ding & Y. Y. Fang, Bull. Bot. Res., Harbin 7(2): 27. 1987.

泰顺杜鹃 *tai shun du juan*

Shrubs or small trees, 2–5 m tall; branches cylindric, setose above. Petiole 2–5 mm, densely setose; leaf blade elliptic-oblong or oblong-lanceolate, 3.5–9 × 1.2–3.2 cm; base cordate; margin slightly revolute, acerose-serrate or acerose-hairy; apex acuminate or caudate-acuminate; both surfaces glabrous; midrib prominent abaxially, impressed and setose adaxially; lateral veins 9–12 pairs, abaxially obscure. Inflorescence subapical, 1-flowered. Pedicel 0.8–1.5 cm, glabrous; calyx shallowly lobed, ca. 2 mm; corolla funnelform, pale rose, 3.2–4 cm; lobes obtuse, oblong, 2–2.5 cm, glabrous; stamens 10, unequal, 1.5–3 cm, filaments pubescent at base; ovary cylindric, ca. 6 mm, glabrous; style slightly exerted, glabrous. Capsule cylindric, 40–45 × ca. 4 mm. Fl. Apr, fr. Sep–Nov.

• Evergreen broad-leaved forests, mountain slopes; 400–600 m. S Zhejiang.

**471. *Rhododendron stamineum*** Franchet, Bull. Soc. Bot. France 33: 236. 1886.

长蕊杜鹃 *chang rui du juan*

Shrubs or small trees, 3–7 m tall; young shoots thin, glabrous. Petioles 8–20 mm, glabrous or shortly glandular-setose; leaf blade elliptic or oblong-lanceolate, 6.5–13 × 2–5.5 cm; base cuneate to subrounded; margin slightly revolute; apex acuminate or obliquely acuminate; abaxial surface rarely white-powdery when dried, glabrous or shortly setose towards base; adaxial surface glabrescent, veins obsolete. Inflorescence subapical, (3–)5–8-flowered; flower buds conical, scales ovate, imbricate, pubescent only on the margin and at the apex. Pedicel 2–2.5 cm, glabrous or grayish tomentose when young; calyx lobes minute, triangular, glabrous; corolla funnelform tapering into narrow tube, white to occasionally pink, the upper lobes with yellow flecks within, 3–3.5 cm, tube ca. 13 mm wide; sta-

mens 10, slender, long-exserted, filaments puberulent in lower part; ovary cylindric, tapering into style, ca. 4 mm, glabrous or densely gray-white-tomentose when young; style 4–5 cm, longer than stamens. Capsule cylindric, slightly curved, apex acuminate, 25–40 mm, glabrous. Fl. Apr–May, fr. Jul–Oct.

• Mixed forests, open forests, forest margins, thickets, mountains; 400–1500 m. Anhui, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shanxi, Sichuan, Yunnan, Zhejiang.

- 1a. Petiole 17–20 mm, sparsely glandular-setose; leaf blade 9–13 × 3–5.5 cm ..... 471c. var. *gaozhaiense*  
 1b. Petiole 8–12 mm, glabrous; leaf blade 6.5–8(–10) × 2–3.5 cm.  
 2a. Pedicel and ovary glabrous ..... 471a. var. *stamineum*  
 2b. Pedicel and ovary densely gray-white-tomentose when young (mature fruit ± glabrous) ..... 471b. var. *lasiocarpum*

**471a. *Rhododendron stamineum* var. *stamineum***

长蕊杜鹃(原变种) *chang rui du juan* (*yuan bian zhong*)

*Rhododendron aucubifolium* Hemsley; *R. cavaleriei* H. Léveillé var. *chaffanjonii* H. Léveillé; *R. esquirolii* H. Léveillé; *R. pittosporifolium* Hemsley.

Petiole 8–12 mm, glabrous; leaf blade 6.5–8(–10) × 2–3.5 cm; base cuneate; abaxial surface entirely glabrous. Pedicel and ovary glabrous. Fl. Apr–May, fr. Jul–Oct.

• Open forests, thickets; 500–1500 m. Anhui, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shanxi, Sichuan, Yunnan, Zhejiang.

**471b. *Rhododendron stamineum* var. *lasiocarpum*** R. C. Fang & C. H. Yang, Acta Bot. Yunnan. 4: 256. 1982.

毛果长蕊杜鹃 *mao guo chang rui du juan*

Petiole 8–12 mm, glabrous; leaf blade 6.5–8 × 2–3.5 cm;

base cuneate; abaxial surface entirely glabrous. Pedicel and ovary densely gray-white tomentose when young, ± glabrous at maturity. Fl. Apr–May, fr. Jul–Aug.

• Mixed forests, mountains; 400–1500 m. SW Sichuan, SE Yunnan.

**471c. *Rhododendron stamineum* var. *gaozhaiense*** L. M. Gao, Acta Bot. Yunnan. 24: 611. 2002.

高寨长蕊杜鹃 gao zhai chang rui du juan

Petiole 17–20 mm, sparsely glandular-setose; leaf blade 9–13 × 3–5.5 cm; base cuneate to subrounded; abaxial surface shortly setose on midrib towards base, otherwise glabrous.

• Mixed forests, forest margins; 600–800 m. Guangxi.

**472. *Rhododendron feddei*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 102. 1913.

黔中杜鹃 qian zhong du juan

Shrubs or small trees, 2–4 m; young branches glabrous. Petiole 12–15 mm, glabrous; leaf blade oblanceolate to oblong-lanceolate, 7–11 × 2–3.2 cm; base narrowly cuneate; apex subacuminate; both surfaces glabrous except for the scattered bristles on the midrib below; lateral veins reticulate and conspicuous on both surfaces. Inflorescence subapical, ca. 5-flowered. Pedicel 2.5–3 cm, glabrous; calyx reduced to an undulate rim, glabrous; corolla and stamens not known; ovary glabrous. Capsule narrowly cylindrical, 25–30 mm, glabrous.

• C and SE Guizhou.

This species is apparently distinct on account of the stiff bristles on the abaxial surface of the leaf midvein. However, the only known specimen is incomplete.

**473. *Rhododendron moulmainsense*** J. D. Hooker, Bot. Mag. 82: t. 4904. 1856.

毛棉杜鹃 mao mian du juan

*Rhododendron klossii* Ridley; *R. leucobotrys* Ridley; ?*R. nematocalyx* I. B. Balfour & W. W. Smith; *R. oxyphyllum* Franchet; *R. pectinatum* Hutchinson; *R. siamense* Diels; *R. stenaulum* I. B. Balfour & W. W. Smith.

Shrubs or small trees, 3–15 m tall; bark gray-brown, not peeling. Petioles stout, 10–15 mm, glabrous; leaf blade leathery, oblong-lanceolate or elliptic-lanceolate, 5–12 × 2.5–5 cm; base cuneate or broadly cuneate; margin revolute; apex acuminate to acute; both surfaces glabrous; lateral veins not reaching margin. Inflorescence subapical, 2- or 3-flowered. Pedicel 1–2 cm, glabrous; calyx lobes 5, shallowly undulate, small, glabrous; corolla narrowly funnelform, white, with a yellow blotch within, 4.3–5.5 cm, tube 15–20 × 3–4 mm in diam., lobes deeply divided, spreading, oblong-obovate, apex entire and rounded; stamens 10, unequal, 3.5–4 cm, slightly shorter than corolla, filaments flat, with silvery-white scurfy pubescence below middle; ovary long-cylindric, tapering into style, 5–10 mm, dark brown, glabrous; style ca. 5 cm, often shorter than corolla, slightly longer than stamens, glabrous. Capsule cylindrical, apex acuminate, 35–60 × 4–6 mm; style persistent. Fl. Mar–Apr, fr. Jul–Dec.

Open forests, thickets; 700–1500 m. S Yunnan [NE India, Indonesia, Malaysia, Myanmar, Thailand].

*Rhododendron nematocalyx* is said to differ in its larger calyx. However, calyx size is in general extremely variable in this section; it is therefore uncertain whether this entity should be treated as a straight synonym of *R. moulmainsense* or maintained as a variety of it.

**474. *Rhododendron truncatovarium*** L. M. Gao & D. Z. Li, Edinburgh J. Bot. 61: 1. 2004.

平房杜鹃 ping fang du juan

Small trees, 3–7 m; young branches gray, glabrous. Petiole 10–15 mm, glabrous; leaf blade lanceolate or elliptic-lanceolate, 8–13 × 3–5 cm; base cuneate; margin slightly revolute; apex acuminate; both surfaces glabrous; midrib grooved adaxially; lateral veins 10–15-paired, not prominent. Inflorescence umbellate, (2- or)3-flowered. Pedicel 1.3–2 cm, glabrous; calyx lobes 5, broadly triangular, minute, ca. 1 mm, glabrous; corolla broadly funnelform, tapering into well-differentiated tube, pink, 4.5–5 cm, tube 10–15 mm, glabrous; lobes 5, 2.5–3 cm; stamens 10, 2.5–3 cm, glabrous at base, pubescent above; ovary truncate at insertion of style, glabrous; style 2.5–3 cm. Capsule cylindrical, 35–50 mm. Fl. Mar–Apr, fr. Sep–Oct.

• Dense or open forests, thickets; 1300–1800 m. Guangxi, SE Yunnan.

**475. *Rhododendron mackenzianum*** Forrest, Notes Roy. Bot. Gard. Edinburgh 12: 132. 1920.

长蒴杜鹃 chang shuo du juan

Shrubs or small trees, 3(–12) m tall; bark peeling with a purplish tinge; young shoots slender, glabrous or sparsely setose. Petiole ca. 10 mm, glabrous or sparsely glandular-setose; leaf blade leathery, oblong or oblong-lanceolate, 8–14 × 2.5–4 cm; base cuneate; margin slightly revolute; apex acuminate to obliquely acuminate, uncinata; both surfaces glabrous; midrib prominent abaxially, impressed adaxially; lateral veins 10–15 (–20)-paired, conspicuous on both surfaces, not reaching margin. Inflorescence subapical, mostly 1-flowered; flower bud scales oblong-ovate, gray-white pubescent adaxially. Pedicel 2–2.5 cm, glabrous; calyx undulate, ca. 1 mm, glabrous; corolla narrowly funnel-campanulate, pink or white, with yellowish orange markings on inner surface of upper lobes, 5–5.7 × ca. 5 cm, tube narrowed towards base, ca. 25 mm, both surfaces glabrous; stamens (9 or)10, unequal, included, filaments subglabrous at base; ovary cylindrical, truncate at junction with style, ca. 7 mm, black when dried, glabrous; style ca. 4 cm, equaling or shorter than corolla, glabrous. Capsule cylindrical, apex truncate, up to 60 × ca. 4 mm; style persistent. Fl. Apr–May, fr. Nov.

Thickets; 2000–2800 m. SE Xizang, W Yunnan [NE Myanmar].

**476. *Rhododendron westlandii*** Hemsley, J. Linn. Soc., Bot. 26: 31. 1889.

凯里杜鹃 kai li du juan

*Rhododendron kaliense* W. P. Fang & M. Y. He; *R. linearicupulare* P. C. Tam; *R. moulmainsense* J. D. Hooker var. *calcaratum* G. Z. Li.

Erect shrubs or small trees, 3–5 m tall; branchlets stout, cylindrical, pale gray-brown at maturity, red-brown when young, glabrous. Petioles stout, ca. 10 mm. Leaf blade thickly leathery,



long-elliptic or subelliptic to oblong-lanceolate, 5–12(–21) × 2.5–5(–8) cm; base cuneate to rounded; apex acute or with a sickle-shaped acumen; both surfaces glabrous; lateral veins 14–18-paired, becoming conspicuous on both surfaces on drying. Inflorescence terminal, umbellate, 5–6-flowered; peduncle short and stout, ca. 5 mm, glabrous. Pedicel 1–1.5 cm, glabrous; calyx usually obscure, sometimes developed and then lobes membranous, linear, to 17 mm, pubescent, margin sparsely fimbriate-ciliate, apex obtuse or two-forked; corolla funnel-campanulate, white or pinkish to rose, with yellow flecks on upper part of inner surface of lobes, ca. 5 cm, tube ca. 15 mm; lobes obovate or ovate, ca. 3 cm; stamens 10, 3.5–4(–4.5) cm, filaments white-pubescent below middle; ovary tapering into style, ca. 8 mm, glabrous; style stout, slightly longer than stamens, glabrous. Capsule cylindrical, sometimes with base curved through almost 90 degrees, 90–100 × ca. 5 mm. Fl. Apr–May, fr. Sep–Dec.

Dense forests, thickets, open areas by rivers, near rocks; 400–1500 m. Fujian, Guangdong, Guangxi, W Guizhou, Hainan, Jiangxi [N Vietnam].

Gao Lianming (pers. comm.) notes that a wider circumscription of *Rhododendron westlandii* is used here than in FRPS (57(2): 355. 1994, where it was treated as a synonym of *R. moulmainense*). Recent herbarium studies indicate that the calyx characters that have been used to separate *R. westlandii* from *R. kaliense* and *R. linearicupulare* are very variable and cannot be reliably used to delimit species.

**477. *Rhododendron huguangense*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 98. 1982

大鳞杜鹃 da lin du juan

*Rhododendron hukwangense* P. C. Tam.

Shrubs, ca. 3 m tall; young shoots cylindrical, gray-brown, glabrous. Petioles stout, 15–20 mm, semicircular, grooved, pubescent abaxially, sparsely glandular-setose adaxially; leaf blade leathery, oblong or oblong-lanceolate, 10–13.5 × 3–4.5 cm; base broadly cuneate or subrounded; margin entire and slightly revolute; apex acuminate; midrib impressed above, prominent abaxially; lateral veins thin, ca. 16-paired, net veins impressed adaxially, obsolete abaxially. Inflorescence terminal, umbellate, 4–5-flowered; flower buds sticky. Pedicel 1.2–1.5 cm, glabrous; calyx lobes usually triangular, 1–2 mm, occasionally linear-subulate, up to 7 mm, margin pectinate with sparse short setae; corolla funnel-campanulate, white to yellowish, 4.5–4.8 cm, tube cylindrical, ca. 15 × 4.5 mm, lobes 5, spatulate, ca. 3.3 cm; stamens 10, unequal, 3–4 cm, filaments puberulent below middle; ovary ca. 7 mm, glabrous; style 4–4.2 cm, longer than stamens, glabrous. Capsule not known. Fl. May.

• Forest margins, mountain slopes; 800–1300 m. Guangdong, E Guangxi, S Hunan.

**478. *Rhododendron latoucheae*** Franchet, Bull. Soc. Bot. France 46: 210. 1899.

西施花 xi shi hua

*Rhododendron amamiense* Ohwi; *R. ellipticum* Maximowicz (1888), not Hoffmannsegg (1826); *R. ellipticum* Maximowicz var. *leptosanthum* (Hayata) S. S. Ying; *R. latoucheae*

var. *amamiense* (Ohwi) T. Yamazaki; *R. latoucheae* var. *ionanthum* (W. P. Fang) G. Z. Li; *R. leiopodium* Hayata; *R. leptosanthum* Hayata (1915), not F. Mueller (1889); *R. leptosanthum* Hayata; *R. tanakae* Hayata; *R. wilsoniae* Hemsley & E. H. Wilson; *R. wilsoniae* var. *ionanthum* W. P. Fang.

Shrubs or small trees, 2–7 m tall; shoots stout. Petioles to 15 mm, glabrous; leaf blade narrowly elliptic-lanceolate oblanceolate or ovate-elliptic, 5–11(–13) × 1.4–5.5 cm; base cuneate to broadly cuneate; margin slightly revolute; apex acuminate; both surfaces glabrous; midrib impressed adaxially, obsolete abaxially; lateral veins net-veined, slightly prominent on both surfaces. Inflorescence subapical, 1(–2)-flowered. Pedicel stout, 2–3 cm, glabrous; calyx lobes obscure or fine and triangular, rarely linear, then to 10 mm, margin and apex finely ciliate; corolla funnelform, pink to white, 3.5–4.8 cm, lobes long-ovate, glabrous, emarginate; stamens 10, included in tube or partly exerted, filaments flat, puberulent below middle; ovary cylindrical, truncate below insertion of style, 3.5–8 × 0.2–0.4 mm, dark brown, glabrous; style 4–8 cm, exerted, glabrous. Capsules cylindrical, ca. 40 × 4 mm; style deciduous. Fl. Mar–May, fr. Sep–Oct.

Mixed forests, rocky mountain slopes; 100–2700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang [Japan (including Ryukyu Islands)].

Gao Lianming (pers. comm.) notes that field observations indicate that the degree of calyx development and the size of the leaves are variable, even within a single population. There is therefore no justification for maintaining *Rhododendron ellipticum* Maximowicz as distinct from *R. latoucheae* (and anyway the former name cannot be used because it is an illegitimate later homonym).

**479. *Rhododendron vaniotii*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 148. 1914.

玫色杜鹃 mei se du juan

Shrubs or small trees; young branches gray, glabrous. Petiole 5–7 mm, glabrous; leaf blade elliptic to oblanceolate, 3–6 × 1–2 cm; base cuneate; margin slightly revolute; apex acuminate; both surfaces glabrous; lateral veins 12–14-paired, conspicuous adaxially, ± obscured abaxially. Inflorescence subapical, 1-flowered. Pedicel ca. 1.5 cm, glabrous; calyx lobes 5, broadly triangular, minute, ca. 1 mm, glabrous; corolla funnelform, rose-violet, ca. 2.5 cm, glabrous; lobes ca. 1.5 cm; stamens 10, ca. 2 cm, filaments pubescent at base; ovary narrowly cylindrical, truncate at insertion of style, ca. 8 mm, glabrous. Capsule not known.

• Guizhou.

This species is distinctive on account of its small flowers and leaves. As it is only known from the type specimen, the range in the size of its flowers and leaves is uncertain.

**480. *Rhododendron cavaleriei*** H. Léveillé, Bull. Soc. Agric. Sarthe, sér. 2, 31: 48. 1903.

多花杜鹃 duo hua du juan

*Rhododendron dentampullum* Chun ex P. C. Tam; *R. henryi* Hance var. *pubescens* K. M. Feng & A. L. Chang.

Shrubs or small trees, 2–3(–8) m tall; branchlets thin.

Petiole 9–15 mm, glabrous; leaf blade lanceolate or oblanceolate, 7–10(–15) × 2.5–3 cm; base cuneate or narrowly cuneate; apex acuminate and mucronate; midrib prominent adaxially. Inflorescence terminal, umbellate, 10–15(–17)-flowered. Pedicel 2.5–4 cm, densely gray-pubescent; calyx lobes obscure, rarely linear, pubescent or glabrous; corolla narrowly funnel-form, white to rose, ca. 4 cm, tube narrowly cylindrical, ca. 10 mm; lobes oblong-lanceolate, 1.9–2.5 cm; stamens 10, slightly shorter than, or as long as the corolla, filaments pubescent below middle; ovary long-ovate, ca. 5 mm, densely white-pubescent; style up to 4.5 cm, longer than stamens, exserted, glabrous. Capsule cylindrical, apex acuminate, 30–40(–55) × 3–5 mm, densely brown-pubescent. Fl. Apr–May, fr. Sep–Nov.

• Dense or open forests; 1000–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Yunnan.

**481. *Rhododendron longilobum*** L. M. Gao & D. Z. Li, *Novon* 13: 192. 2003.

凸纹杜鹃 tu wen du juan

Small trees, 6–8 m; young branches gray, glabrous. Petiole 8–15 mm, grooved adaxially, glabrous; leaf blade elliptic to narrowly elliptic, 7–10.5 × 1.8–2.5 cm; base cuneate; margin slightly revolute; apex long-acuminate; both surfaces glabrous; lateral veins 12–16-paired, prominent. Inflorescence subapical, umbellate, 4- or 5-flowered, rachis ca. 5 mm. Pedicel 2–2.5 cm, glabrous; calyx rim with tufts of long weak hairs; lobes narrowly triangular to narrowly lingulate, 5–20 × ca. 1 mm, sometimes minutely ciliate; corolla narrowly funnel-form, pale rose, ca. 4.5 cm, tube ca. 10 mm, outer surface glabrous; lobes 3–3.5 × ca. 1 cm; stamens 10, shortly exserted, 3–3.5 cm, filaments puberulent in lower half; ovary narrowly cylindrical, truncate at insertion of style, densely yellowish tomentose; style 3–3.5 cm, glabrous. Capsule not known. Fl. May.

• Evergreen broad-leaved forests; 1900–2000 m. SE Yunnan.

This species resembles *Rhododendron cavaleriei*, but differs in the prominent lateral veins of the leaf blade, the longer calyx lobes, and the ovary, which is truncate at the apex.

**482. *Rhododendron hancockii*** Hemsley, *Bull. Misc. Inform. Kew* 1895: 107. 1895.

滇南杜鹃 dian nan du juan

Shrubs or trees, 2–7(–13) m tall; branchlets stout, gray-brown, glabrous. Petiole 6–8 mm, glabrous or glandular-setose; leaf blade obovate or oblong-oblanceolate, 7–13 × 1.5–5 cm, tapering toward the base; margin slightly revolute; sometimes obscurely setose-ciliate; apex shortly acuminate; both surfaces glabrous; lateral veins obsolete abaxially, conspicuously impressed adaxially. Inflorescence subapical, 1(or 2)-flowered. Pedicel ca. 1.5 cm, glabrous or yellowish brown pubescent; calyx lobes polymorphic, lobes triangular or triangular-ovate to linear-lanceolate, or linear, 5–13 mm, pubescent at base on outer surface; corolla broadly funnel-form, white, with yellowish flecks, 4.5–6 × ca. 8 cm; tube cylindrical, ca. 15 mm, lobes broadly obovate or ovate-elliptic, glabrous or puberulent on upper part near margin within; stamens 10, unequal, shorter than corolla, filaments flat, pubescent below middle; ovary

narrowly cylindrical, ca. 6 mm, densely yellowish brown pubescent; style 4.5–5 cm, slightly longer than stamens, glabrous. Capsule cylindrical, ribbed, apex slightly beaked and pubescent, 30–55 × ca. 7 mm. Fl. Apr–May, fr. Aug–Dec.

• Mixed forests, thickets on mountain slopes; 1100–2000 m. C, N, and W Guangxi, C and SE Yunnan.

- 1a. Petiole glabrous; pedicel with a yellowish brown pubescence; leaf blade 2.5–5 cm wide; calyx lobes triangular-ovate to linear-lanceolate, to 9 mm ..... 482a. var. *hancockii*
- 1b. Petiole glandular-setose; pedicel glabrous; leaf blade 1.5–3 cm wide; calyx lobes linear, 5–13 mm ..... 482b. var. *longisepalum*

**482a. *Rhododendron hancockii* var. *hancockii***

滇南杜鹃(原变种) dian nan du juan (yuan bian zhong)

Petiole glabrous; leaf blade 8–13 × 2.5–5 cm. Pedicel yellowish brown pubescent; calyx lobes triangular-ovate to linear-lanceolate, to 9 mm. Fl. Apr–Jun, fr. Jul–Dec.

• Mixed forests, thickets on mountain slopes; 1100–2000 m. C, N, and W Guangxi, C and SE Yunnan.

**482b. *Rhododendron hancockii* var. *longisepalum*** R. C. Fang & C. H. Yang, *Acta Bot. Yunnan.* 23: 294. 2001.

长萼滇南杜鹃 chang e dian nan du juan

Petiole glandular-setose; leaf blade 7–10 × 1.5–3 cm. Pedicel glabrous; calyx lobes linear, 5–13 mm. Fl. Apr.

• Mixed forests; 1500–1600 m. SE Yunnan.

**483. *Rhododendron tutcheriae*** Hemsley & E. H. Wilson, *Bull. Misc. Inform. Kew* 1910: 116. 1910.

香緬樹杜鹃 xiang mian shu du juan

Trees, up to 15 m tall; branches slender, sparsely setose and pubescent when young, shortly setose or glabrescent when mature. Petiole stout, ca. 10 mm, sparsely setose; leaf blade thickly leathery, narrowly oblanceolate or oblong-lanceolate, 8–13 × 1.8–3 cm; base cuneate or broadly cuneate; margin slightly revolute; apex shortly caudate-acuminate; abaxial surface entirely glabrous or sparsely short-setose; midrib and lateral veins impressed above, prominent below. Inflorescence subapical, 1–3-flowered, rachis ca. 4 mm, puberulent. Pedicel 1.5–2 cm, sparsely reddish setose or glabrous; calyx shallowly lobed, small; corolla narrowly funnel-form, cherry-red, 3–4.5 cm, tube subcylindrical, ca. 10 mm; lobes spreading, elliptic, ca. 2.5 cm, apex obtuse or rounded; stamens 10, unequal, slightly shorter than corolla, filaments puberulent below; ovary cylindrical, truncate at apex ca. 9 mm, glabrous or upper part coarsely appressed-puberulent; style glabrous. Capsule cylindrical, apex truncate, 30–40 × 5–6 mm. Fl. Mar–Apr, fr. Sep–Nov.

Evergreen broad-leaved forests, subalpine forests, woods; 1200–2000 m. S Yunnan [N Vietnam].

The label of the type specimen describes the corolla as violet.

- 1a. Abaxial leaf surface glabrous ..... 483c. var. *glabrifolium*
- 1b. Abaxial leaf surface sparsely short-setose.

- 2a. Ovary coarsely puberulent; pedicel  
sparsely setose or glabrous ..... 483a. var. *tutcheriae*  
2b. Ovary and pedicels glabrous  
..... 483b. var. *gymnocarpum*

**483a. *Rhododendron tutcheriae* var. *tutcheriae***

香緬樹杜鵑(原變種) *xiang mian shu du juan (yuan bian zhong)*

Leaf blade abaxial surface sparsely short-setose. Pedicel sparsely setose or glabrous; ovary with upper part coarsely appressed-puberulent.

- Subalpine forests; 1200–2000 m. SE Yunnan.

**483b. *Rhododendron tutcheriae* var. *gymnocarpum* A. L. Chang ex R. C. Fang, Acta Bot. Yunnan. 4: 257. 1982.**

光果香緬樹杜鵑 *guang guo xiang mian shu du juan*

Leaf blade abaxial surface sparsely short-setose. Pedicel glabrous; ovary glabrous.

- Woods; ca. 1800 m. SE Yunnan.

**483c. *Rhododendron tutcheriae* var. *glabrifolium* L. M. Gao & D. Z. Li, Acta Bot. Yunnan. 23: 293. 2001.**

光葉香緬樹杜鵑 *guang ye xiang mian shu du juan*

Leaf blade abaxial surface glabrous. Pedicel sparsely setose or glabrous; ovary with upper part coarsely appressed-puberulent.

Evergreen broad-leaved forests; 1900–2000 m. S Yunnan [N Vietnam].

**484. *Rhododendron henryi* Hance, J. Bot. (Morot) 19: 243. 1881.**

彎蒴杜鵑 *wan shuo du juan*

Shrubs or small trees, 3–6 m tall; branches slender, gray-brown, glabrous, setose or glandular-setose. Petioles 10–12 mm, glabrous or sparsely (sometimes glandular) setose; leaf blade elliptic-ovate or oblong-lanceolate, 5.5–11 × 1.5–3.5 cm; base cuneate or narrowly cuneate; apex shortly acuminate; abaxial surface glabrous though sometimes setose on midrib. Inflorescence terminal, umbellate, 5–6-flowered; peduncle ca. 5 mm, glabrous. Pedicel 2–2.5 cm, densely glandular setose; calyx lobes unequal, triangular, rarely linear, 3(–12) mm, pubescent near base on outer surface, margin glandular hairs, apex with toothed lobes; corolla funnel-campanulate, purplish or pink, 4.5–5 cm, tube tapering towards the base, 10–13 mm; lobes spreading, oblong-obovate, 3–3.5 cm, conspicuously veined, apex puberulent; stamens 10, shorter than corolla, filaments flat, densely pubescent below; ovary cylindrical, ca. 5 mm, glabrous or densely glandular-setose; style as long as corolla or slightly exerted, glabrous. Capsule cylindrical, with midrib, slightly curved, 30–50 mm. Fl. Mar–Apr, fr. Sep–Dec.

- Forests; 500–1000 m. Fujian, Guangdong, Guangxi, Jiangxi, Taiwan, Zhejiang.

- 1a. Young shoots and ovary setose or glandular-setose ..... 484a. var. *henryi*

- 1b. Young shoots and ovary glabrous ..... 484b. var. *dunnii*

**484a. *Rhododendron henryi* var. *henryi***

彎蒴杜鵑(原變種) *wan shuo du juan (yuan bian zhong)*

*Rhododendron ciliatopedicellatum* Hayata; *R. shiwandashanense* P. C. Tam.

Young shoots, petioles, and abaxial surface of leaf midrib sparsely setose or glandular-setose. Ovary and pedicel glandular-setose.

- Forests; 500–1000 m. Fujian, Guangdong, Guangxi, Jiangxi, Taiwan, Zhejiang.

**484b. *Rhododendron henryi* var. *dunnii* (E. H. Wilson) M. Y. He in L. C. Hu & M. Y. Fang, Fl. Reipubl. Popularis Sin. 57(2): 365. 1994.**

禿房彎蒴杜鵑 *tu fang wan shuo du juan*

*Rhododendron dunnii* E. H. Wilson, J. Arnold Arbor. 6: 170. 1925.

Young shoots, petioles, and leaf midrib glabrous. Ovary and pedicel glabrous.

- Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang.

**485. *Rhododendron dayaoshanense* L. M. Gao & D. Z. Li, Novon 13: 189. 2003.**

大姚山杜鵑 *da yao shan du juan*

Small trees, 3–4 m; young branches slender, glandular-setose. Petiole 8–15 mm, grooved adaxially, glandular-setose; leaf blade narrowly oblanceolate or oblong-lanceolate, 8–13 × 1.8–2.5 cm; base cuneate; margin slightly revolute; apex acuminate; abaxial surface mostly sparsely short-setose, denser on midrib; adaxial surface glabrous; lateral veins 14–18-paired. Inflorescence subapical, 4- or 5-flowered, rachis ca. 5 mm. Pedicel 2.5–3.5 cm, densely gray-pubescent and sparsely glandular-setose; calyx with undulate rim; lobes triangular, to 1 mm, glabrous; corolla funnelform, pale rose, with a yellow blotch on upper lobe, 5–5.5 cm, tube 15–20 mm, outer surface glabrous; lobes 5, oblong-obovate to elliptic, 3.5–4 cm; stamens 10, shortly exerted, filaments puberulent below; ovary oblong-cylindrical, densely yellowish tomentose; style 4–4.5 cm, glabrous. Capsule not known. Fl. May.

- Mixed forest margins; 1100–1200 m. E Guangxi.

This species may be a hybrid between *Rhododendron cavaleriei* and *R. championiae* as it occurs with both these species and shares some characteristics with both.

**486. *Rhododendron championiae* Hooker, Bot. Mag. 77: t. 4609. 1851 [“*championae*”].**

刺毛杜鵑 *ci mao du juan*

*Rhododendron championiae* var. *ovatifolium* P. C. Tam.

Shrubs, 0.5–5 m tall; branches pubescent, also spreading glandular-setose. Petiole 12–17 mm, densely glandular-setose; leaf blade papery, elliptical, oblong-lanceolate or ovate, 7–17.5 × 2–5 cm; base cuneate, rarely subrounded; margin densely

long setose, also with a few glandular hairs; apex acuminate; abaxial surface pubescent and setose, with more setae on midrib and lateral veins; adaxial surface sometimes bullate, sparsely short setose. Inflorescence subapical, 5–7-flowered, rachis 4–7 mm, glabrous; flower buds sticky. Pedicel ca. 2 cm, to 2.5 cm in fruit, pubescent and glandular-setose; calyx lobes narrow, to 12 mm, densely ciliate; corolla narrowly funnelform, white or reddish, 5–6(–7) cm; lobes oblong or oblong-lanceolate, 2.8–3.5 cm; stamens 10, unequal, shorter than corolla, filaments slender, pubescent below middle; ovary oblong, ca. 6 mm, densely yellowish brown setose; style longer than stamens, exerted, glabrous to sparsely pubescent near the base. Capsule cylindrical, 6-grooved, slightly curved, up to 55 mm, densely gland-tipped setose and pubescent. Fl. Apr–May, fr. Jul–Nov.

- Open valley forests, mountain slopes; 500–1300 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

*Rhododendron championiae* var. *ovatifolium* is not now considered worthy of formal recognition.

**487. *Rhododendron subestipitatum*** Chun ex P. C. Tam, Bull. Bot. Res., Harbin 2(4): 90. 1982 [“*subespitatum*”].

**7. *Rhododendron* subg. *Pentanthera*** (G. Don) Pojarkova in Schischkin & Bobrov, Fl. URSS 18: 57. 1952.

羊躑躅亚属 yang zhi zhu ya shu

He Mingyou (何明友); David F. Chamberlain

*Rhododendron* sect. *Pentanthera* G. Don, Gen. Hist. 3: 846. 1834.

Shrubs, erect, rarely treelike, deciduous; new leafy shoots from axils of leaves of past season; young shoots sometimes verticillate, not scaly, setose, pubescent or glabrous. Winter buds with many imbricate scales; branches and leaves arising from lower part of buds. Leaves scattered or verticillate. Leaf blade not scaly. Inflorescence terminal, arising from an apical bud on the previous year’s shoots, shortly racemose-umbellate, several- to many-flowered. Calyx usually small, rarely up to 6 mm; corolla funnel-campanulate, or rotate- to tubular-campanulate, tube ca. as long as, or markedly shorter than the lobes, sparsely pubescent on outer surface, often with glands, or glabrous, with or without flecks; stamens 5(–10), included or exerted; filaments puberulent below; ovary 5-locular, pubescent setose or glandular; style glabrous. Capsule with woody carpodium.

About 24 species: mostly in North America, also in E and SW Asia and E and EC Europe; two species in China.

- 1a. Corolla with unicellular hairs on outer surface; stamens 5; leaves scattered along branches ..... 1. *R.* sect. *Pentanthera*
- 1b. Corolla glabrous on outer surface; stamens 10; leaves in verticels of 5–7 or more at apex of branches ... 2. *R.* sect. *Sciadorhodion*

**1. *Rhododendron* sect. *Pentanthera*** G. Don, Gen. Hist. 3: 846. 1834.

五花药组 wu hua yao zu

Shrubs, deciduous. Leaves sparse. Calyx usually small; corolla funnelform, tube ca. as long as or slightly longer than lobes; stamens 5, exerted; ovary strigose or setose, often with glands; style glabrous or pubescent below.

Eighteen or nineteen species: mostly in North America, one species in SW Asia and E and EC Europe, one species in China and Japan.

**488. *Rhododendron molle*** (Blume) G. Don, Gen. Hist. 3: 846. 1834 subsp. **molle**

羊躑躅 yang zhi zhu

*Azalea mollis* Blume, Catalogus, 44. 1823; *A. sinensis* Loddiges; *Rhododendron sinense* (Loddiges) Sweet.

Shrubs, 0.5–2 m tall; branches densely gray-white-pubescent, also sparsely setose when young. Petiole 2–6 mm, puberulent and ± setose; leaf blade papery, oblong to oblong-lanceolate, 5–11 × 1.5–3.5 cm; base cuneate; margin ciliate; apex obtuse and mucronate; abaxial surface densely gray-white-pubescent, yellow-brown setose along midrib; adaxial surface

单花无柄杜鹃 dan hua wu bing du juan

Small shrubs; branches gray-brown, glabrous. Petiole 0–6 mm, glandular-setose; leaf blade subleathery, oblong-lanceolate, 7.5–13.5 × 2–4.5 cm; base broadly cuneate to subcordate; margin ciliate-setose; apex shortly acuminate; both surfaces glabrous at maturity except abaxially for sparsely setose; lateral veins ca. 14-paired. Inflorescence usually 1-flowered; flower buds not sticky. Pedicel ca. 1.7 cm, with brown glandular-villose hairs; calyx obsolete; lobes undulate; corolla campanulate, pink, ca. 5.5 cm; tube ca. 25 mm; lobes ca. 3 cm; stamens 10, unequal, 4.7–5.2 cm, filaments puberulent in lower third; ovary cylindrical, ca. 8 mm, fulvous-puberulent; style ca. 4.7 cm. Capsule not known. Fl. Mar.

- Cliffs. Guangdong.

This species was treated as a synonym of *Rhododendron championiae* in FRPS (57(2): 365. 1994); it may be distinguished by the usually 1-flowered inflorescence, the non-sticky buds, the shorter pedicels (ca. 5 mm), and the pink corolla. The specific epithet was misspelled “*subespitatum*” on p. 90 of the protologue, but was spelled correctly in the caption of the line drawing on p. 97.

sparsely to densely puberulent when young. Inflorescence terminal, racemose-umbellate: flowers opening before or with the leaves; many-flowered. Pedicel 1–2.5 cm, pubescent and sparsely setose; calyx lobes small, rounded, pubescent and setose-ciliate; corolla broadly funnelform, yellow or golden yellow, with dark red flecks on lobes, ca. 4.5 × 5–6 cm; tube cylindrical, tapering towards base, ca. 26 mm wide, outer surface puberulent; lobes 5, elliptic or ovate-oblong, ca. 2.8 cm, puberulent on outer surface; stamens 5, unequal; filaments flat, puberulent below; ovary conical, ca. 4 mm, densely gray-white-pubescent, also sparsely setose; style to 6 cm, glabrous. Capsule conical-cylindrical, 5-ribbed, 25–35 mm, puberulent and sparsely

setose. Fl. Mar–May, fr. Jul–Aug.

• *Pinus* forests, thickets on mountain slopes, exposed grassy hill-sides, ridges; near sea level to 2500 m. Anhui, Fujian, Guangdong, Guang

xi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang.

Kron (Edinburgh J. Bot. 50: 279. 1993) treated *Rhododendron japonicum* A. Gray as *R. molle* subsp. *japonicum* (A. Gray) Kron. This taxon differs from subsp. *molle* in its more densely hairy fruit and yellow to orange-red flowers. It is restricted to Japan.

**2. *Rhododendron* sect. *Sciadorhodium* Rehder & E. H. Wilson, Monogr. Azaleas, 79. 1921.**

十花药组 shi hua yao zu

Shrubs or small trees, deciduous. Leaves in whorls of 5–7 or more at tips of branches. Calyx usually small; corolla rotate-funnelform, tube much shorter than lobes; stamens 10, included or slightly exserted; ovary and lower part of style glandular-hairy.

Three or four species: China, Japan, Korea, E Russia; one species in China.

There is good DNA evidence to suggest that *Rhododendron* sect. *Sciadorhodium* is not related to *R.* sect. *Brachycalyx*, or indeed to *R.* subg. *Tsutsusi*. The subverticillate leaves that are common to both are outweighed by a range of other morphological and anatomical differences.

**489. *Rhododendron schlippenbachii* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 15: 226. 1871.**

大字杜鹃 da zi du juan

*Azalea schlippenbachii* (Maximowicz) Kuntze.

Shrubs, deciduous, 1–4.5 m tall; young shoots densely glandular-hairy. Petiole 2–4 mm, setose or glandular-hairy; leaf blade papery, obovate or broadly obovate, 4.5–7.5 × 2.5–4.5 cm; abaxial surface glandular-hairy and puberulent. Inflorescence terminal, umbellate, 3–6-flowered: flowers appearing before or with the leaves. Pedicel ca. 1.2 cm, densely glandular-hairy;

calyx lobes ovate-elliptic, 1.5–7 mm, outer surface and margin glandular hairy; corolla rotate-funnelform, white to pink or rose, the upper 3 lobes with red-brown flecks, 2.7–3.2 cm; tube ca. 9 mm, outer surface puberulent; lobes 5, broadly obovate; stamens 10, unequal, partly exserted, filaments flat, puberulent below the middle; ovary ovoid, densely glandular-hairy; style longer than stamens, shortly glandular-hairy below. Capsule long-ovoid, dark brown, to 17 mm, densely glandular-hairy. Fl. May, fr. Jun–Sep.

Broad-leaved forests, thickets; 400–1500 m. S Liaoning, Nei Mongol [Japan, Korea, E Russia].

**8. *Rhododendron* subg. *Tsutsusi* (Sweet) Pojarkova in Schischkin & Bobrov, Fl. URSS 18: 55. 1952.**

映山红亚属 ying shan hong ya shu

He Mingyou (何明友); David F. Chamberlain

*Rhododendron* sect. *Tsutsusi* Sweet, Brit. Fl. Gard., ser. 2, 2: t. 117. 1831.

Shrubs, sometimes dwarf, deciduous or with 2 types of leaves: deciduous summer leaves and persistent winter leaves; new foliage shoots from same terminal buds as flowers, enclosed within the same bud scales; young shoots not scaly, usually with red-brown, often strap-shaped hairs that may be spreading or appressed, gland-tipped, or setose to villous, rarely glabrous. Leaf blade not scaly, often coarsely appressed-hairy or pubescent. Inflorescence terminal, umbellate, 1- to many-flowered. Calyx usually small; corolla funnelform, rotate-campanulate, or funnelform-campanulate; tube conspicuous; lobes 5, white to rose, purple or red, often with flecks, glabrous, rarely glandular-hairy; stamens 5–10(–12), equal or unequal; ovary 5-locular, often pubescent or setose or glandular-hairy. Capsule ovoid, conical or conical-ovoid, coarsely appressed-hairy, villous or glabrescent.

About 115 species: E and SE Asia, mostly in China and Japan, extending south to Malaysia, Vietnam, and the Philippines; 81 species (75 endemic) in China.

- 1a. Branchlets glabrous or if hairy, then pilose or villous; leaves in verticels of 2–3 at tips of branches ..... 1. *R.* sect. *Brachycalyx*
- 1b. Branchlets and leaves with flat and red-brown coarse appressed hairs or setae that are sometimes gland-tipped, or spreading-hairy.
  - 2a. Leaves rarely ± persistent, sometimes dimorphic with deciduous summer leaves, always scattered along the stems ..... 2. *R.* sect. *Tsutsusi*
  - 2b. Leaves often persistent, in verticels of 2–3 at tips of branches, scattered only along unusually vigorous branches ..... 3. *R.* sect. *Tsusiopsis*

**1. *Rhododendron* sect. *Brachycalyx* Sweet, Brit. Fl. Gard., ser. 2, 1: t. 95. 1831.**

轮生叶组 lun sheng ye zu

Low shrubs, deciduous, rarely evergreen, branchlets subverticillate, glabrous or villous. Leaf blade villous or silky-pubescent, glabrescent. Inflorescence 1- to many-flowered; corolla rotate-campanulate or rotate-funnelform, pale rose to purple or red, rarely

white, often with flecks within and glabrous on outer surface; stamens 5–10, unequal; ovary villous and/or glandular. Capsules oblong-ovoid to cylindrical, rarely conical-ovoid.

About 23 species: E and SE Asia, mostly in Japan; four species (all endemic) in China.

- 1a. Ovary and capsule glabrous; leaves abaxially with lateral veins pubescent ..... 492. *R. huadingense*
- 1b. Ovary and capsule densely villous and strigose; leaves abaxially with lateral veins not pubescent.
  - 2a. Leaf blade ovate, 2–3(–5.5) cm; petiole usually ca. 2 mm, densely ferruginous-pubescent; corolla lilac-purple; pedicel slightly curved ..... 490. *R. farrerae*
  - 2b. Leaf blades elliptic, ovate-lanceolate or ovate-rhomboidal, 3.5–7.5 cm; petiole 5–7 mm, glabrescent or sparsely pilose; corolla pink or purplish red; pedicel erect.
    - 3a. Pedicels densely softly yellow-brown-hairy; leaf margin entire or rarely serrate ..... 491. *R. mariesii*
    - 3b. Pedicels densely golden-strigose and stipitate-glandular; leaf margin obscurely crenulate ..... 493. *R. chilanshanense*

**490. *Rhododendron farrerae*** Sweet, Brit. Fl. Gard., ser. 2, 1: t. 95. 1831.

丁香杜鹃 ding xiang du juan

*Azalea farrerae* (Sweet) K. Koch; *A. squamata* Lindley; *Rhododendron cinereoserratum* P. C. Tam; *R. farrerae* var. *leucotrichum* Franchet.

Shrubs, deciduous, 1.5–3 m tall; branches short and firm, ferruginous-villous, glabrescent. Petioles ca. 2 mm, densely ferruginous-pubescent; leaf blade subleathery, ovate, 2–3(–5.5) × 1–2 cm; base rounded; margin ciliate; apex obtuse, mucronate; midrib glabrous, or coarse ferruginous-strigose on both surfaces at base. Inflorescence terminal, 1- or 2-flowered, flowers opening before leaves. Pedicel ca. 0.6 cm, to 1 cm and curved in fruit, densely red-brown-pubescent or villous; calyx inconspicuous, lobes densely ferruginous villose; corolla rotate-funnel-form, lilac-purple, with purple-red flecks, 2–3 × 3.8–5 cm; tube short, narrowly cylindrical; lobes spreading, margin undulate, glabrous; stamens 8–10, unequal, shorter than corolla, filaments glandular-hairy below; ovary ovoid, densely red-brown-villous; style curved, glabrous. Capsule cylindrical, ca. 10 mm, densely ferruginous-pubescent. Fl. May–Jun, fr. Jul–Aug.

• Dense mountain forests; 800–2100 m. Chongqing, Fujian, Guangdong, Guangxi, Hunan, Jiangxi.

*Rhododendron cinereoserratum* is better treated as a synonym of *R. farrerae*, not of *R. mariesii* as was given in FRPS (57(2): 372. 1994).

**491. *Rhododendron mariesii*** Hemsley & E. H. Wilson, Bull. Misc. Inform. Kew 1907: 244. 1907.

满山红 man shan hong

*Rhododendron daiyuenshanicum* P. C. Tam, nom. illeg. superfl.; *R. daiyunicum* P. C. Tam; *R. farrerae* Sweet var. *mediocre* Diels; *R. gnaphalocarpum* Hayata; *R. shojoense* Hayata; *R. umbelliferum* H. Léveillé.

Shrubs, deciduous, 1–3 m tall; branches verticillate, softly yellowish-brown hairy, glabrescent. Petiole 5–7 mm, glabrescent; leaf blade papery to almost leathery, elliptic, ovate-lanceolate or triangular-ovate, 4–7.5 × 2–4 cm; base obtuse or subrounded; margin slightly revolute; apex acute and mucronate; both surfaces yellowish brown-villous, glabrescent, rarely abaxial surface thinly persistently floccose. Inflorescence usually 2-flowered: flowers appearing before the leaves. Pedicel 0.7–1

cm, densely softly yellow-brown hairy; calyx shallowly lobed, densely softly yellow-brown hairy; corolla funnel-form, purplish red, with purple-red flecks on upper lobes, 3–3.5 cm; tube ca. 4 mm in diam.; lobes deeply divided, oblong, both surfaces glabrous; apex obtuse and rounded; stamens 8–10, unequal, shorter than, or as long as the corolla, filaments flat, glabrous; ovary ovoid, densely yellow-brown villous; style longer than stamens, glabrous. Capsule ellipsoid-ovoid, 6–9(–18) mm, densely shiny-brown-villous. Fl. Apr–May, fr. Jun–Nov.

• Open forests, submontane regions; 600–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hebei, Hubei, Hunan, Jiangsu, Jiangxi, Shanxi, Sichuan, Taiwan, Zhejiang.

*Rhododendron daiyunicum* is probably a distinct species. The name *R. daiyuenshanicum* was published a year later based on the same type.

Specimens collected in Hubei by Henry were referred by Diels (Bot. Jahrb. Syst. 29: 513. 1900) to *Rhododendron farrerae* var. *weyrichii* (Maximowicz) Diels. This species (*R. weyrichii* Maximowicz) is exclusively Japanese. The Chinese specimens cited by Diels were mentioned in the protologue of *R. mariesii*, and one is probably the type of the latter name.

**492. *Rhododendron huadingense*** B. Y. Ding & Y. Y. Fang, Bull. Bot. Res., Harbin 10(1): 31. 1990.

华顶杜鹃 hua ding du juan

Shrubs, 1–4 m; branches of present year glabrous. Petiole ca. 10 mm, strigose and pubescent; leaf blade papery, ovate, ovate-elliptic, or elliptic, 6–10 × 3–6 cm; base broadly cuneate to rounded; margin serrulate, stoutly ciliate; apex acute; both surfaces yellowish pubescent, glabrescent; abaxial surface with lateral veins gray-tomentose; midrib impressed adaxially; lateral veins 10–12-paired. Inflorescence 2–4-flowered. Pedicel 1–2 cm, densely glandular-hairy; calyx small, glandular-hairy; corolla funnel-form, pale purple or purplish red, upper lobes with purple spots at base, 4.5–5 cm, lobes 5, elliptic, 3–3.5 cm; stamens 10, 3–4.5 cm, glabrous; ovary ovoid, glabrous; style as long as corolla. Capsule ovoid, ca. 10 × 8 mm, glabrous. Fl. Apr, fr. Sep.

• 700–1000 m. Zhejiang.

This species differs from *Rhododendron mariesii* in the gray-tomentose lateral veins on the abaxial surface of the leaves, in the stipitate-glandular pedicels, and in the glabrous ovary and capsule.

**493. *Rhododendron chilanshanense*** Kurashige, Edinburgh J. Bot. 56: 75. 1999.

棲兰山杜鹃 qi lan shan du juan

Shrubs, 1–3 m; young branches with sparse weak hairs. Petiole 8–10 mm, sparsely spreading-pilose; leaf blade papery, ovate to ovate-rhomboid, 3.5–4.5 × 1.5–2 cm; base broadly cuneate; margin undulate or minutely crenulate, pilose towards base; apex bluntly acute; abaxial surface glabrous; adaxial sur-

face sparsely long-pilose; lateral veins 6–8-paired. Inflorescence 2- or 3-flowered, flowers appearing with leaves. Pedicel ca. 1 cm, densely golden-strigose and glandular-hairy; calyx ca. 1 mm, densely strigose; corolla open-funnelform, pink, 2–2.5 cm, lobes 5, elliptic, 1.2–1.5 cm; stamens 10, ca. 2.5 cm, exserted; ovary densely golden-strigose; style ca. 3 cm, glabrous. Capsule not known. Fl. May.

- Mixed forests; 1600–1700 m. Taiwan.

2. *Rhododendron* sect. *Tsutsusi* Sweet, Brit. Fl. Gard., ser. 2, 2: t. 117. 1831.

映山红组 ying shan hong zu

Much-branched shrubs or low shrubs, deciduous to semievergreen; branchlets densely coarsely red-brown strigose, hairs flat, or with sparse villi, spreading setae or glandular hairs. Leaf blade often densely red-brown coarsely strigose, rarely glabrescent. Inflorescence terminal, umbellate, 1- to many-flowered; corolla funnelform or funnel-campanulate, tube cylindric, red to purple-red, pink or white, glabrous or rarely with glandular hairs on outer surface; stamens 5 or 10(–12), equal or unequal; filaments with soft hairs below, rarely glabrous; ovary 5-celled, coarsely strigose, occasionally with glandular hairs. Capsule conical or conical-ovoid, coarsely strigose or glabrescent.

About 85 species: mostly in E Asia, from Japan and Korea through China to Vietnam and the Philippines; 76 species (71 endemic) in China.

*Rhododendron pinetorum* P. C. Tam (Bull. Bot. Res., Harbin 2(1): 93. 1982), described from Hunan, is distinctive. However, its affinities remain uncertain because the type specimen lacks flowers.

1a. Stamens (6–)7–10.

2a. Style with hairs at base.

3a. Stamens exserted from corolla.

- 4a. Leaf blade broadest below middle, 0.5–1.9 cm wide; calyx lobes coarsely yellowish brown silky strigose ..... 497. *R. rubropilosum*
- 4b. Leaf blade broadest above middle, 2–3 cm wide; calyx lobes sparsely pubescent ..... 499. *R. lasiostylum*

3b. Stamens shorter than corolla.

- 5a. Leaf blade linear-lanceolate or linear-oblong to obovate; stamens 10; corolla crimson to dark red, 3.5–4 cm, lobes ovate or long-ovate ..... 494. *R. kanehirae*

- 5b. Leaf blade oblong to oblong-obovate or elliptic to elliptic-ovate; stamens (5–)6–10; corolla pink or purplish, 1–3.2 cm.

- 6a. Corolla 1–1.5(–2) cm; stamens 9 or 10 ..... 505. *R. taiwanalpinum*

- 6b. Corolla 3–3.2 cm; stamens (5–)6–10.

- 7a. Young shoots gray-white silky strigose; abaxial leaf surface coarsely brown-strigose; stamens 7 ..... 495. *R. tenuilaminare*

- 7b. Young shoots blackish-brown-strigose; abaxial leaf surface densely ferruginous-silky-strigose; stamens (5–)6–10 ..... 496. *R. strigosum*

2b. Style glabrous.

- 8a. Leaf blade 0.7–1.8 cm; corolla ca. 1.5 cm ..... 503. *R. noriakianum*

- 8b. Leaf blade 2–7(–8); corolla 2.2–5.2 cm.

9a. Stamens shorter than or as long as the corolla.

- 10a. Stamens 7–10, some as long as the corolla; corolla 1.8–2.8 cm.

- 11a. Corolla ca. 2.8 cm; inflorescence 4–6-flowered; leaf blade with lateral veins 4–5-paired ..... 507. *R. subflumineum*

- 11b. Corolla 1.8–2 cm; inflorescence 2–4-flowered; leaf blade with lateral veins ca. 3-paired ..... 508. *R. linguense*

- 10b. Stamens 10, shorter than corolla; corolla 3–5.2 cm.

- 12a. Calyx lobes 2–2.5 mm; corolla 3–3.5 cm.

- 13a. Leaf blade ovate to ovate-oblong, or oblong-lanceolate; calyx triangular-ovate, ca. 2.5 mm; corolla ca. 3 cm, lobes oblong; stamens slightly shorter than corolla ..... 501. *R. longiperulatum*

- 13b. Leaf blade ovate to oblong or oblanceolate to broad-elliptic; calyx lobes broadly elliptic to ovate, ca. 2 mm; corolla ca. 3.5 cm, lobes obovate; stamens half as long as corolla ..... 502. *R. nakaharae*

- 12b. Calyx lobes 3–12 mm; corolla 4–5.2 cm.

- 14a. Leaf blade linear-lanceolate to narrowly lanceolate, 0.3–1.1 cm wide; pedicel densely brown strigose ..... 500. *R. hainanense*

- 14b. Leaf blade ovate to oblong, ovate-oblong or oblong-lanceolate, 1–5 cm wide; pedicel yellowish brown villous or glandular setose.

- 15a. Young shoots and leaves with spreading flat and red-brown glandular hairs, also pubescent;

- calyx lobes triangular-ovate to ovate-lanceolate, 3–8 mm; corolla 4–4.8 cm ..... 504. *R. oldhamii*
- 15b. Young shoots and leaves with coarse appressed hairs; calyx lobes lanceolate, ca. 12 mm;  
corolla 4.8–5.2 cm ..... 506. *R. ×pulchrum*
- 9b. All stamens as long as or longer than corolla.
- 16a. Stamens as long as corolla.
- 17a. Corolla reddish, yellowish when dried, without purple flecks; stamens 8 ..... 511. *R. octandrum*
- 17b. Corolla red, rose or pink with dark red flecks, 2.2–4 cm; stamens 10.
- 18a. Corolla ca. 2.2 cm, dark purple-red to pink, lobes oblong ..... 509. *R. atrovirens*
- 18b. Corolla 3.5–4 cm, scarlet red, lobes obovate ..... 510. *R. simsii*
- 16b. Stamens longer than corolla.
- 19a. Corolla white, 3–4.5 cm; calyx lobes ca. 12 mm, with glandular hairs; young shoots densely  
villous, mixed with fewer glandular hairs ..... 512. *R. mucronatum*
- 19b. Corolla dark red, purple or dark blue, 2.2–3 cm; calyx lobes to 3.5 mm; young shoots variously  
hairy but not glandular.
- 20a. Corolla dark blue, 2.2–2.5 cm; young shoots with appressed hairs ..... 513. *R. longifalcatum*
- 20b. Corolla dark red or purple, 2.5–3 cm; young shoots with spreading or crisped hairs.
- 21a. Corolla dark red; young shoots densely red-brown short-setose and sparsely spreading long-  
hairy; stamens partly exerted ..... 514. *R. rufohirtum*
- 21b. Corolla purple; young shoots densely yellowish brown crisped villous; stamens conspicuously  
exserted ..... 515. *R. pulchroides*
- 1b. Stamens (4–)5(–6).
- 22a. Young shoots with gland-tipped hairs or setae, often also with non-glandular hairs.
- 23a. Style glandular.
- 24a. Corolla 1.2–1.9 cm, glabrous within; style 2.4–2.8 cm.
- 25a. Leaf blade 10–18(–20) cm; inflorescence 10–15-flowered; corolla red, 1.2–1.4 cm ..... 560. *R. yaoshanicum*
- 25b. Leaf blade 2.5–7(–10) cm; inflorescence 5–6-flowered; corolla purple-red, 1.7–1.9 cm ..... 564. *R. jinxiuense*
- 24b. Corolla 1–1.2 cm, puberulous within; style 1.2–2 cm.
- 26a. Inflorescence 5–12-flowered; style 1.8–2 cm, longer than stamens ..... 559. *R. jinpingense*
- 26b. Inflorescence 3–5-flowered; style ca. 1.2 cm, shorter than or as long as stamens.
- 27a. Young shoots, petiole and pedicel with long-setae and short glandular hairs; petiole 4–10 mm;  
pedicel 8–10 mm ..... 541. *R. rhuuyenense*
- 27b. Young shoots, petiole and pedicel setose-strigose; petiole ca. 3 mm; pedicel 5–7 mm ..... 545. *R. hunanense*
- 23b. Style glabrous.
- 28a. Corolla red, 1.2–1.8 cm ..... 519. *R. taipaoense*
- 28b. Corolla purple-red, pale purple, pink or white, 1.8–2.5 cm.
- 29a. Young shoots with eglandular setae to 4 mm as well as short gland-tipped hairs; calyx lobes  
with long ferruginous setae on the margin; inflorescence 8–9(–16)-flowered ..... 528. *R. kwangtungense*
- 29b. Young shoots with eglandular setae short or absent; calyx strigose or with dense short brown  
bristles; inflorescence 10–18-flowered.
- 30a. Abaxial leaf surface densely yellow-brown woolly and ferruginous strigose; corolla ca. 2.5  
cm ..... 525. *R. florulentum*
- 30b. Abaxial leaf surface with short brown or red-brown bristles only; corolla 1.8–2.3 cm.
- 31a. Pedicel and calyx with both short gland-tipped hairs and coarse appressed hairs, pedicel ca. 1.5 cm;  
filaments puberulent at base ..... 529. *R. rivulare*
- 31b. Pedicel without glandular hairs; pedicel 0.8–1 cm; filaments glabrous.
- 32a. Leaf blade 4.5–8(–9.5) × 2.5–4.5 cm; pedicel brown silky strigose; inflorescence  
10–12-flowered ..... 524. *R. jasminoides*
- 32b. Leaf blade 2–5(–10) × 1–2(–5) cm; pedicel with short red-brown bristles; inflorescence to  
18-flowered ..... 527. *R. apricum*
- 22b. Young shoots with non-glandular hairs or bristles only.
- 33a. Style glabrous.
- 34a. Corolla 2.4–4 cm; style 3.5–5 cm.
- 35a. Corolla bright red, occasionally rose-red, 3–4 cm; pedicel and calyx hairs white ..... 530. *R. indicum*
- 35b. Corolla white to pale pink or purple, or purple-red, 2.4–3.1 cm; pedicel and calyx hairs yellow-brown  
or ferruginous.
- 36a. Petiole 1–2 mm; pedicel ca. 7 mm ..... 532. *R. naamkwanense*
- 36b. Petiole 3–5 mm; pedicel 9–18 mm.
- 37a. Style ca. 5 cm, longer than stamens ..... 531. *R. chrysocalyx*



- 37b. Style ca. 3.5 cm, as long as stamens ..... 523. *R. meridionale*
- 34b. Corolla 1.2–2.2(–2.5) cm; style 1–2.8 cm.
- 38a. Young shoots with crisped hairs; corolla white, yellowish when dried, upper lobes with rose flecks ..... 563. *R. saxatile*
- 38b. Young shoots with strigose indumentum only; corolla red to pink, purple-red or pale purple, or lilac (corolla color not recorded for *R. crassimedium*).
- 39a. Stamens 4–6; pedicel ca. 10 mm; inflorescence 2- or 3-flowered ..... 498. *R. sikayotaizanense*
- 39b. Stamens 5; pedicel 4–7(–10) mm; inflorescence sometimes more than 3-flowered.
- 40a. Style 2.4–2.8 cm.
- 41a. Inflorescence usually 2- or 3-flowered; petiole ca. 2 mm; leaf blade membranous ..... 536. *R. obtusum*
- 41b. Inflorescence 5–16-flowered; petiole 3–12 mm; leaf blade leathery.
- 42a. Stamens ca. 3 cm; leaf with gray-white hairs ..... 520. *R. litchiifolium*
- 42b. Stamens 1.7–2.7 cm; leaf with brown or reddish brown hairs.
- 43a. Leaf blade leathery, 3–7.8(–11) × 1.3–4 cm, elliptic-lanceolate to elliptic-obovate; corolla lilac, lobes oblong-lanceolate, apex acute ..... 533. *R. mariae*
- 43b. Leaf blade papery, 1.5–3.6 × 1–2 cm, lanceolate or oblong-lanceolate; corolla purple-red or purplish, lobes long-lanceolate, apex mucronate ..... 534. *R. kwangsiense*
- 40b. Style 1–2 cm.
- 44a. Pedicel 6–10 mm; calyx ca. 6 mm.
- 45a. Leaf blade 1.3–1.5 cm, adaxial surface with dense fine warts, sparsely pubescent; stamen filaments glabrous ..... 517. *R. crassimedium*
- 45b. Leaf blade 1.8–3.5 cm, adaxial surface without warts, hairs appressed; stamen filaments puberulent or pubescent below.
- 46a. Stamens 0.9–1.1 cm; corolla with dark spots ..... 516. *R. hypoblematosum*
- 46b. Stamens 2.2–2.7 cm; corolla not marked ..... 522. *R. nanpingense*
- 44b. Pedicel 3–4 mm.
- 47a. Leaf blade papery; corolla ca. 2 cm ..... 535. *R. microphyton*
- 47b. Leaf blade leathery; corolla 1–1.6 cm.
- 48a. Leaf blade apex obtuse or subrounded, often mucronate; inflorescence 3–5-flowered ..... 518. *R. tingwuense*
- 48b. Leaf blade apex acute or shortly acuminate; inflorescence 5–12-flowered.
- 49a. Corolla ca. 1 cm; stamens ca. 1 cm, filaments puberulous below ..... 543. *R. tsoi*
- 49b. Corolla 1.2–1.3 cm; stamens 1.3–1.7 cm, filaments glabrous ..... 526. *R. unciferum*
- 33b. Style strigose or less often pubescent towards base.
- 50a. Filaments glabrous.
- 51a. Corolla ca. 2.5 cm; pedicel densely long-setose ..... 552. *R. breviperulatum*
- 51b. Corolla 1–2.2 cm; pedicel strigose, sometimes also with crisped hairs.
- 52a. Young shoots with crisped hairs; corolla white, yellowish when dried ..... 563. *R. saxatile*
- 52b. Young shoots with strigose indumentum only; corolla white, purple or pale red.
- 53a. Corolla purple or purplish.
- 54a. Corolla purple, without markings; inflorescence 2–3-flowered ..... 546. *R. myrsinifolium*
- 54b. Corolla purplish, with purple flecks; inflorescence 5–10(–13)-flowered.
- 55a. Corolla outer surface with glandular hairs; leaf blade papery, adaxial surface without prominences ..... 558. *R. qianyangense*
- 55b. Corolla outer surface glabrous; leaf blade leathery, adaxial surface with mammiform prominences ..... 542. *R. crassistylum*
- 53b. Corolla white to pale red.
- 56a. Leaf blade 6–7 cm; shrubs or small trees 3–4 m tall; stamens subequal, ca. 1 cm ..... 561. *R. flosculum*
- 56b. Leaf blade 1–6 cm; small shrub 1–2 m tall; stamens unequal, 1.2–2.3 cm.
- 57a. Petiole 6–13 mm; corolla ca. 2.2 cm ..... 557. *R. seniavinii*
- 57b. Petiole 2–4 mm; corolla 1.1–1.6 cm.
- 58a. Young shoots gray-white strigose, glabrescent; corolla ca. 1.6 cm; stamens 1.6–2.3 cm .... 550. *R. cretaceum*
- 58b. Young shoots reddish strigose; corolla ca. 1.1 cm; stamens 1.3–1.6 cm ..... 538. *R. hejiangense*
- 50b. Filaments partly pubescent or puberulous.
- 59a. Corolla 2.3–3.5 cm.
- 60a. Inflorescence 1- or 2-flowered; corolla ca. 2.3 cm ..... 556. *R. rhodanthum*
- 60b. Inflorescence 3–10-flowered; corolla 2.5–3.5 cm.
- 61a. Inflorescence ca. 10-flowered; young shoots sparsely spreading pubescent and coarsely strigose ..... 565. *R. spadiceum*
- 61b. Inflorescence 3–6-flowered; young shoots strigose.
- 62a. Leaf blade 2–3 cm, apex obtuse; corolla ca. 2.5 cm, rose-pink with crimson flecks on

- upper lobes ..... 552. *R. breviperulatum*
- 62b. Leaf blade 3–5.5 cm, apex acuminate; corolla ca. 3.5 cm, reddish purple ..... 568. *R. loniceriflorum*
- 59b. Corolla 0.6–2 cm.
- 63a. Corolla 1.5–2 cm.
- 64a. Pedicel ca. 15 mm, setose; petiole glabrous ..... 562. *R. sparsifolium*
- 64b. Pedicel 5–7(–11) mm, strigose; petiole strigose.
- 65a. Abaxial leaf surface with hairs only on the midrib and lateral vein; inflorescence 3- or 4-flowered; pedicel ca. 5 mm ..... 549. *R. malipoense*
- 65b. Abaxial leaf surface more uniformly sparsely strigose; inflorescence usually 4–7-flowered; pedicel 5–10 mm.
- 66a. Leaf blade widest at or below middle, base subrounded; petiole 5–7(–10) mm ..... 566. *R. flumineum*
- 66b. Leaf blade widest above middle, rarely narrow-elliptic, base cuneate or broadly cuneate; petiole 3–5 mm ..... 567. *R. subcerinum*
- 63b. Corolla 0.6–1.3 cm.
- 67a. Style with glandular hairs.
- 68a. Corolla rotate-funnelform, ca. 6 mm, outside surface with red glands ..... 554. *R. minutiflorum*
- 68b. Corolla funnelform to funnel-campanulate, 8–13 mm, outside surface with glands not red.
- 69a. Stamens subequal, 8–14 mm; style 15–18 mm ..... 555. *R. chunii*
- 69b. Stamens unequal, 12–16 mm; style 12–15 mm.
- 70a. Leaf blade leathery, margin red-brown strigose, apex obtusely pointed; pedicel 6–8 mm ... 548. *R. subenerve*
- 70b. Leaf blade papery, margin not strigose, sometimes ciliate, apex acuminate; pedicel 4–5 mm.
- 71a. Petiole and pedicel strigose; style sparsely glandular hairy below ..... 539. *R. fuchsiifolium*
- 71b. Petiole and pedicel spreading setose, pedicel also glandular; style strigose below, shortly stipitate-glandular above ..... 547. *R. guizhongense*
- 67b. Style without glandular hairs.
- 72a. Style 1.7–2 cm.
- 73a. Corolla 1.2–1.4 cm, outer surface without projections ..... 521. *R. polyraphidoideum*
- 73b. Corolla ca. 0.9 cm, outer surface with small obtuse spines ..... 553. *R. viscigemmatum*
- 72b. Style 1–1.3 cm.
- 74a. Inflorescence 2- or 3-flowered ..... 569. *R. tenue*
- 74b. Inflorescence 4–8(–9)-flowered.
- 75a. Leaf blade papery, apex not mucronate; pedicel 3–4 mm.
- 76a. Corolla pink; style strigose to apex ..... 544. *R. fuscipilum*
- 76b. Corolla white; style glabrous towards apex ..... 537. *R. adenanthum*
- 75b. Leaf blade leathery, apex mucronate; pedicel 4–7 mm.
- 77a. Corolla without spots, both surfaces glabrous; style longer than shorter stamens ..... 540. *R. viscidum*
- 77b. Corolla with upper 3 lobes with dark red flecks, both surfaces hairy; style shorter than all stamens ..... 551. *R. yangmingshanense*

**494. *Rhododendron kanehirae*** E. H. Wilson in E. H. Wilson & Rehder, Monogr. Azaleas, 28. 1921 [“*kanehiraei*”].

台北杜鹃 tai bei du juan

Shrubs, deciduous, 1–3 m tall; young shoots with dense coarse brown flat appressed hairs. Summer and winter leaves different. Petiole 1–3 mm, densely coarsely castaneous strigose; leaf blade leathery, linear-lanceolate or linear-oblongate to obovate, 1.5–4.8 × 0.2–1.5 cm; margin coarsely strigose, entire, or with obsolete round teeth; apex obtuse to acute; both surfaces sparsely coarsely shiny brown slightly revolute strigose. Inflorescence 1–3-flowered. Pedicel 0.1–0.3 cm, erect, densely coarsely castaneous strigose, hairs flat; calyx lobes ovate to elliptic, 2–4 mm, coarsely shiny-castaneous strigose; corolla narrowly funnelform, crimson to dark red, 3.5–4 cm, tube tapering toward the base, 18–20 mm; lobes ovate or long-ovate; stamens 10, unequal, shorter than corolla; filaments linear, puberulent below; ovary ovoid, ca. 3 mm, densely coarsely castaneous setose-strigose; style longer than stamens, slightly

exserted, sparsely coarsely strigose at base. Capsule long-cylindric, 6–8 mm, coarsely setose-strigose. Fl. Apr.

• Mountain forests. N Taiwan.

**495. *Rhododendron tenuilaminare*** P. C. Tam, Surv. Gen. Rhododendron S. China, 102. 1983.

薄片杜鹃 bao pian du juan

Shrubs, ca. 1 m tall; branches brown, with dense coarse gray-white silky appressed hairs. Summer and winter leaves different. Petiole 2–5 mm, coarsely brown-strigose; leaf blade papery, oblong or oblong-obovate, 2.5–5 × 1–1.8 cm; base narrowly cuneate; margin sinuate, obscurely toothed; apex obtuse to acute; both surfaces coarsely brown-strigose. Inflorescence 3-flowered. Pedicel 0.5–0.6 cm, densely coarsely silky gray-brown strigose; calyx lobes ca. 2 mm, densely coarsely silver-white strigose; corolla narrowly funnel-campanulate, pink to purplish, upper lobes with red flecks, ca. 3.2 cm; tube cylindric, ca. 10 × 3–6 mm, sparsely pubescent; lobes obovate, obtuse or

subrounded at apex, ca.  $2.2 \times 1$  cm, outer surface sparsely pubescent; stamens 7, unequal, 2.5–2.9 cm, filaments pink, pubescent below; ovary ovoid, ca.  $4 \times 3$  mm, densely coarsely silver-gray strigose; style ca. 3.3 cm, red, sparsely villous at base. Capsule ovoid, ca.  $9 \times 5$  mm, coarsely strigose.

- Mountain thickets. C Guangdong (Conghua).

**496. *Rhododendron strigosum*** R. L. Liu, Acta Phytotax. Sin. 39: 272. 2001.

伏毛杜鹃 fu mao du juan

Shrubs, ca. 1.8 m tall; young shoots densely blackish-brown-strigose. Leaves monomorphic. Petiole 3–5 mm, densely ferruginous-strigose; spring leaves with blade thickly papery, elliptic to elliptic-ovate,  $2.5\text{--}3.2 \times 1.2\text{--}1.9$  cm; base cuneate; apex shortly acute, mucronate; abaxial surface densely ferruginous-silky-strigose; adaxial surface grayish-brown-strigose, soon glabrescent; summer leaves ca.  $1 \times 0.5$  cm, otherwise as for spring leaves. Inflorescence an umbel, 2–4-flowered. Pedicel 0.8–1 cm, densely reddish-brown silky-strigose; calyx lobes 2–3 mm, ovate, densely reddish-brown silky-strigose; corolla campanulate, rose, becoming paler, upper lobes with purple flecks, ca. 3 cm, tube ca. 10 mm; outer surface glabrous; stamens (5–)6–10, 1.7–2.6 cm, filaments puberulent in the lower half; ovary densely silky-strigose; style 2.6–3 cm, glabrous. Capsule ovoid,  $9\text{--}11 \times 4\text{--}5$  mm, densely ferruginous silky-strigose. Fl. Apr–May.

- 900–1000 m. W Jiangxi (Jinggang Shan).

This species appears to be allied to *Rhododendron tenuilaminare*. In the protologue it was said to differ in having a larger, silvery-strigose calyx and a smaller, abaxially sparsely puberulent corolla.

**497. *Rhododendron rubropilosum*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 173. 1911.

台红毛杜鹃 tai hong mao du juan

*Rhododendron caryophyllum* Hayata.

Shrubs, up to 3 m tall; young shoots slender, densely coarsely red-brown strigose, hairs flat. Leaves all similar. Petiole 2–6 mm, indumentum as for shoots; leaf blade oblong-lanceolate,  $1.5\text{--}4.5 \times 0.5\text{--}1.9$  cm; base cuneate; margin entire and slightly revolute; apex acute and mucronate; both surfaces densely yellowish brown silky strigose when young. Inflorescence 2–4-flowered. Pedicel ca. 0.6 cm, coarsely yellowish brown silky strigose; calyx lobes oblong, 1.5–4 mm, coarsely yellowish brown silky strigose; corolla broadly funnellform, pink, with darker pink flecks within, to 2.5 cm wide; tube ca. 10 mm; lobes spreading, oblong, ca.  $1.7 \times 0.7$  cm; stamens 7 or 10, unequal, some longer than corolla, filaments linear, sparsely pubescent at base; ovary ovoid, densely coarsely yellowish brown strigose; style ca. 2 cm, longer than stamens, hairy near base. Capsules conical-ovoid,  $5\text{--}7 \times$  ca. 4 mm, densely coarsely brown strigose. Fl. Jul, fr. Aug–Oct.

- Mountain forests; 1000–3300 m. C Taiwan.

*Rhododendron rubropilosum* var. *grandiflorum* T.Yamazaki (Revis. Gen. *Rhododendron* Japan, Taiwan, Korea & Sakhalin, 36. 1996) is said to differ from var. *rubropilosum* in having the leaf blade 3–5 cm, corolla

3–3.5 cm wide, and stamens 5 or 6. The type is a cultivated specimen raised from material collected in Nantou County, Taiwan. The number of stamens suggests an affinity with *R. breviperulatum*, rather than with *R. rubropilosum*. Furthermore, it is not known whether any plants in the wild possess these larger flowers and leaves. Therefore, the status and affinities of var. *grandiflorum* remain uncertain.

**498. *Rhododendron sikayotaizanense*** Masamune, Trans. Nat. Hist. Soc. Taiwan 29: 27. 1939.

志佳阳杜鹃 zhi jia yang du juan

Shrubs; young shoots strigose. Leaves monomorphic. Petiole not known; leaf blade leathery, oblong to ovate-oblong,  $0.4\text{--}1.4 \times 0.2\text{--}0.6$  cm; base cuneate; apex apiculate abaxial surface appressed-hirsute, midrib densely pilose; adaxial surface sparsely appressed-hirsute. Inflorescence 2–3-flowered. Pedicel ca. 10 mm,  $\pm$  pilose; calyx lobes linear-lanceolate, ciliate; corolla campanulate, red, ca. 2 cm; stamens 4–6, unequal, sparsely hirsute below; ovary densely hirsute; style glabrous. Capsule not known.

- Taiwan.

The present authors have seen no material of this species. It apparently resembles *Rhododendron nakaharae*, *R. noriakianum*, and *R. rubropilosum*, but differs from all three in having fewer stamens per flower.

**499. *Rhododendron lasiostylum*** Hayata, Icon. Pl. Formos. 3: 135. 1913.

毛花柱杜鹃 mao hua zhu du juan

*Rhododendron sasakii* E. H. Wilson.

Small multi-branched shrubs, 1–2 m tall; young shoots densely brown or gray-brown strigose, hairs flattened. Summer and winter leaves different. Petiole 3–9 mm, densely coarsely strigose, hairs flat; leaf blade papery, oblong-oblancheolate or obovate,  $3\text{--}4.5 \times 2\text{--}3$  cm; base cuneate; margin entire; apex obtuse to acute; both surfaces densely coarsely red-brown strigose, hairs flattened. Inflorescence 2–4-flowered. Pedicel 0.5–0.9 cm, densely coarsely brown strigose; calyx lobes elliptic-oblong,  $2\text{--}3 \times$  ca. 1 mm; outer surface sparsely pubescent; margin ciliate; corolla funnellform, pink, 1.5–2 cm; lobes unequal, oblong, ca. 1 cm, apex obtuse to rounded; stamens 10, unequal, partly exerted, filaments flat, with fine papillose hairs below; ovary ovate-conical, ca. 2 mm, densely coarsely brown strigose; style ca. 1.4 cm, with pale brown hairs at base. Capsules long-cylindric-ovoid, ca.  $8 \times 2.5$  mm, densely strigose. Fl. Jun.

- Woods; 500–2700 m. C Taiwan.

**500. *Rhododendron hainanense*** Merrill, Philipp. J. Sci. 21: 350. 1922.

海南杜鹃 hai nan du juan

Small multi-branched shrubs, 1–3 m tall; young shoots fine and erect, densely coarsely brown strigose, hairs flattened. Leaves all similar. Petiole 3–6 mm, coarsely strigose; leaf blade subleathery, linear-lanceolate to narrowly lanceolate,  $2\text{--}4 \times 0.3\text{--}1.1$  cm; base cuneate; margin slightly revolute and shallowly undulate; apex acute and mucronate; abaxial surface sparsely coarsely pale yellow-brown strigose. Inflorescence 1–

3-flowered. Pedicel 0.5–0.8 cm, densely brown strigose; calyx lobes unequal, long-ovate, outer surface and margin villous, apex rounded or acuminate; corolla funnel-form, red, 3.5–4.5 cm; tube cylindrical, ca. 1.8 cm, both surfaces glabrous; lobes spreading, obovate, apex rounded; stamens 10, unequal, partly exerted, filaments linear, pubescent below; ovary ovoid, densely coarsely yellow-brown appressed setose; style longer than stamens, glabrous. Capsules ovoid, 8–10 mm, glabrescent. Fl. Oct–Dec.

• Forest margins, riversides; 300–500(–1300) m. S Guangxi, Hainan.

**501. *Rhododendron longiperulatum*** Hayata, Icon. Pl. Formos. 3: 138. 1913.

长鳞芽杜鹃 chang lin ya du juan

Small shrubs; young shoots densely finely castaneous strigose. Summer and winter leaves different. Petiole ca. 2 mm, coarsely brown strigose; leaf blade papery, ovate to ovate-oblong or oblong-lanceolate, 1.3–2.5 × 0.5–1.5 cm; base cuneate; margin entire, revolute; apex shortly acuminate to acute; both surfaces sparsely coarsely strigose. Inflorescence 2- or 3-flowered. Pedicel ca. 1.3 cm, densely shiny red-brown appressed-setose; calyx lobes triangular-ovate, ca. 2.5 × 1.5 mm, pale red-brown strigose; corolla funnel-campanulate, scarlet-red, ca. 3 cm; lobes oblong, ca. 1 cm, apex obtuse and rounded; stamens 10, unequal, most slightly shorter than the corolla, filaments flat, puberulent on lower half; ovary cylindrical-ovoid, up to 3 mm, densely pale red-brown appressed-setose; style linear, glabrous. Capsules cylindrical-ovoid, 8–15 mm, coarsely strigose. Fl. Mar–Apr.

• Grasslands; 700–1000 m. N Taiwan.

**502. *Rhododendron nakaharae*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 153. 1908 [*“nakaharai”*].

那克哈杜鹃 na ke ha du juan

Low shrubs, evergreen; young shoots densely coarsely brown strigose, hairs flat. Leaves all similar; petiole ca. 2 mm, coarse strigose, hairs flat and scurfy; leaf blade papery, ovate to oblong or oblanceolate to broad-elliptic, 0.6–1.2 × 0.5–1.2 cm, tapering towards the base; margin slightly revolute; apex obtuse and mucronate; both surfaces with dense flat and scurfy appressed setae. Inflorescence 1–3-flowered. Pedicel ca. 1 cm, coarsely strigose; calyx membranous; lobes broadly elliptic to ovate, ca. 2 mm, long-strigose; corolla funnel-form-campanulate, lobed to ca. 1/2 length, dark red, ca. 3.5 × 4 cm; tube villous; lobes obovate-orbicular; inner basal part of corolla villous; stamens 10, ca. 1/2 as long as corolla, filaments villous near base; ovary conical, ca. 2 mm, densely pubescent; style glabrous. Capsule ovoid or subovoid, ca. 8 mm, puberulent. Fl. Jun.

• Grassy places; 700–1000 m. N Taiwan.

**503. *Rhododendron noriakianum*** Suzuki, Trans. Nat. Hist. Soc. Taiwan 25: 40. 1935.

细叶杜鹃 xi ye du juan

Low shrubs, deciduous; young shoots strigose, soon glabrescent. Leaves monomorphic. Petiole 1–2 mm, strigose; leaf blade stiffly papery, ovate to ovate-oblong, 0.7–1.8 × 0.4–0.6

cm; base cuneate; apex obtuse, apiculate; abaxial surface strigose along midrib and lateral veins; adaxial surface glabrescent. Inflorescence an umbel, 2–4-flowered. Pedicel 3–4 mm, densely pilose; calyx lobes densely pilose, apex acute; corolla funnel-form, red to dark purple, ca. 1.5 cm; stamens 7–10, unequal, slightly exerted, filaments pubescent below; ovary pubescent; style glabrous. Capsule not known.

• Open grasslands; 1500–3000 m. Taiwan.

The present authors have seen no material of this species. It is apparently allied to *Rhododendron nakaharae* and *R. longiperulatum*, but differs from both in having a smaller corolla and exerted stamens.

**504. *Rhododendron oldhamii*** Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 16(9): 34. 1870 [*“oldhami”*].

砖红杜鹃 zhuan hong du juan

*Azalea oldhamii* (Maximowicz) Masters; *Rhododendron oldhamii* var. *glandulosum* Hayata; *R. ovatosepalum* Yamamoto.

Shrubs, semievergreen, to 3 m tall; young shoots with spreading red-brown flat glandular hairs, also pubescent. Summer and winter leaves different. Petiole 4–6 mm, with dense short brown glandular setae and flat hairs; leaf blade thin leathery, elliptic or elliptic-lanceolate, 2–7.8 × 1.5–5 cm; base broadly cuneate; margin slightly revolute, ciliate; apex obtuse and mucronate; adaxial surface densely shortly setose, later subglabrous. Inflorescence 2–4-flowered. Pedicel 0.6–1 cm, shortly glandular setose; calyx lobes unequal, triangular-ovate or ovate-lanceolate, 3–8 mm, outer surface with long red-brown glandular hairs on margin; corolla broadly funnel-form, brick-red, lacking flecks, 4–4.8 × 3–5 cm; tube tapering toward the base, 1.8–2.4 cm, glabrous; lobes ovate or elliptic-ovate; stamens 10, unequal, shorter than the corolla, filaments puberulent in the lower half; ovary ovoid, densely yellow-brown glandular-setose; style longer than stamens, exerted, glabrous. Capsules broadly ovoid, 9–15 mm, glandular-setose, calyx persistent. Fl. May–Jul(–Oct).

• Mountain thickets; ca. 2800 m. Taiwan.

**505. *Rhododendron taiwanalpinum*** Ohwi, J. Jap. Bot. 13: 339. 1937.

台湾高山杜鹃 tai wan gao shan du juan

*Rhododendron rubropilosum* Hayata var. *taiwanalpinum* (Ohwi) S. Y. Lu et al.

Shrubs, 1–1.5 m; young shoots brown-strigose. Leaves monomorphic. Petiole 2–3 mm, appressed-strigose; leaf blade leathery, ovate-oblong to oblong-lanceolate, 1.5–2(–3) × 0.7–1.2(–1.8) cm; base cuneate; apex acute, mucronate; abaxial surface densely strigose; adaxial surface sparsely strigose. Inflorescence (1–)2–3-flowered. Pedicel 5–7 mm, densely reddish-brown hairy; calyx lobes 1–2 mm, densely hairy, apex rounded; corolla broadly funnel-campanulate, pink, with rose flecks, 1–1.5(–2) cm, tube 4–6 mm, glabrous; stamens 9–10, unequal, filaments hairy in lower half; ovary grayish-pubescent; style pubescent in lower half. Capsule not known.

- Alpine meadows, mountain peaks; 2800–3000 m. Taiwan.

This species was originally described as being allied to *Rhododendron oldhamii*, but it lacks the glandular indumentum of that species. Although *R. taiwanalpinum* is apparently a distinct species, the present authors' knowledge of it comes from a single inadequate specimen and the type was not seen.

**506. *Rhododendron* ×*pulchrum*** Sweet, Brit. Fl. Gard., ser. 2, 2: t. 117. 1831.

锦绣杜鹃 jin xiu du juan

*Rhododendron indicum* (Linnaeus) Sweet var. *pulchrum* (Sweet) G. Don; *R. indicum* var. *smithii* Sweet; *R. phoeniceum* G. Don f. *smithii* (Sweet) E. H. Wilson.

Shrubs, semievergreen, 1.5–2.5 tall; branches coarsely pale brown strigose. Petiole 3–6 mm, densely appressed setose; leaf blade thinly leathery, elliptic-oblong to elliptic-lanceolate or oblong-ob lanceolate, 2–5(–7) × 1–2.5 cm; base cuneate; margin revolute and entire; apex obtuse. Inflorescence 1–5-flowered. Pedicel 0.8–1.5 cm, densely yellowish brown villous; calyx deeply lobed; lobes lanceolate, large, ca. 1.2 cm, coarsely strigose; corolla broadly funnelform, rose-purple, with dark red flecks, 4.8–5.2 × ca. 6 cm; lobes broadly ovate, ca. 3.3 cm; stamens 10, subequal, 3.5–4 cm, filaments linear, pubescent below; ovary ovoid, ca. 3 × 2 mm, densely coarsely yellow-brown appressed setose; style ca. 5 cm, as long as or slightly longer than corolla, glabrous. Capsule oblong-ovoid, 8–10 mm, coarsely setose-strigose, calyx persistent. Fl. Apr–May, fr. Sep–Oct.

- Cultivated. Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang.

The name *Rhododendron* ×*pulchrum* applies to cultivated plants. It is said that the species originated in China, but it is unknown in the wild. According to Sweet, in the protologue, it is a horticultural hybrid derived from “*R. ledifolium*, of Hooker, impregnated by the pollen of the Old Red *R. indicum*.”

**507. *Rhododendron subflumineum*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 94. 1982.

涧上杜鹃 jian shang du juan

Shrubs, ca. 3 m tall; young shoots densely coarsely ferruginous strigose, later subglabrous. Summer and winter leaves different. Petiole ca. 4 mm; leaf blade elliptic-oblong, lanceolate or oblong-lanceolate, 1.3–3.6(–6) × 0.5–1.3(–2) cm; abaxial surface silky reddish brown-strigose; adaxial surface brown-strigose; midrib conspicuous on both surfaces; lateral veins 4–5-paired, impressed above. Inflorescence 4–6-flowered. Pedicel 0.6–1 cm, densely coarsely ferruginous strigose; calyx lobes shallow and rounded; corolla funnelform, dark purple-red to pink, without flecks, ca. 2.8 cm; tube cylindric, ca. 15 × 3 mm in diam. at base; lobes oblong-ovate, ca. 1.3 cm; stamens 7–10, unequal, 2–2.8 cm, filaments pubescent below; ovary densely ferruginous strigose; style ca. 3.5 cm, glabrous. Capsules conical, ca. 7 mm, coarsely ferruginous strigose. Fl. May.

- Open forests by rivers. N Guangdong, S Hunan.

**508. *Rhododendron linguense*** G. Z. Li, Guihaia 15: 295. 1995.

临桂杜鹃 lin gui du juan

Shrubs, ca. 2.5 m tall; young shoots coarsely brown-strigose. Summer and winter leaves different; petiole 3–6 mm; spring leaf blade leathery, broadly elliptic to elliptic, 3–7 × 1.3–3 cm; base cuneate; apex mucronate; abaxial surface sparsely strigose; adaxial surface densely ferruginous-strigose; midrib conspicuous on both surfaces, lateral veins ca. 3-paired, impressed above; summer leaf blade 1.5–2.5 × 0.8–1.2 cm, otherwise as for spring leaves; petioles 2–3 mm. Inflorescence 2–4-flowered. Pedicel 0.5–0.7 cm, brown-strigose; calyx ca. 1 mm; corolla tubular-funnelform, pale purple, without flecks, 1.8–2 cm, tube cylindrical, 8–10 mm, ca. 3 mm in diam. at base; lobes obovate-lanceolate, 0.8–1 cm; stamens 10, unequal, 1.2–1.5 cm, filaments glabrous; ovary densely brown appressed-strigose; style ca. 2.5 cm, glabrous. Capsule cylindrical, ca. 10 mm, densely brown-strigose. Fl. Apr, fr. Jul.

- Woods; 100–200 m. NE Guangxi (Lingui).

The present authors have seen no material of this species. It is closely allied to *Rhododendron subflumineum*, sharing with that species a narrow, funnelform corolla and 10 stamens; it differs, however, in the larger spring leaves and smaller flowers and floral parts.

**509. *Rhododendron atrovirens*** Franchet, Bull. Soc. Bot. France 33: 235. 1886.

大美杜鹃 da guan du juan

Shrubs, 1–2 m tall; young shoots slender, subverticillate, densely coarsely brown strigose. Leaves all similar. Petiole 3–8 mm, coarsely brown-strigose; leaf blade papery, lanceolate, ovate-lanceolate or elliptic-lanceolate, 2.5–8.5 × ca. 3 cm; both surfaces densely coarsely strigose. Inflorescence 2–4(–7)-flowered. Pedicel ca. 0.8 cm, densely coarsely brown strigose, hairs flat; calyx lobes triangular-ovate, very small; corolla funnelform, red, with darker flecks at base of upper lobes, ca. 2.2 cm; tube narrowly cylindric, outer surface glabrous, inner surface pubescent; lobes oblong, obtuse; stamens 10, unequal, as long as the corolla, filaments puberulent below; ovary conical-ovoid, ca. 5 mm, densely coarsely shiny brown-strigose; style longer than stamens, glabrous. Capsules long-ovoid, ca. 6 mm in diam., densely long-brown-strigose. Fl. Apr–May, fr. Jul–Nov.

- Evergreen broad-leaved forests; 1200–1800 m. Sichuan, Yunnan.

**510. *Rhododendron simsii*** Planchon, Fl. Serres Jard. Eur. 9: 78. 1853–1854.

杜鹃 du juan

Shrubs, 2(–5) m tall; branches many and fine, densely shiny brown appressed-setose, setae flat. Summer and winter leaves different. Petiole 2–6 mm. Leaf blade ovate, elliptic-ovate or obovate to oblanceolate, 1.5–5 × 0.5–3 cm; base cuneate or broadly cuneate; margin slightly revolute, finely toothed; apex shortly acuminate. Inflorescence 2–3(–6)-flowered. Pedicel ca. 0.8 cm, densely shiny brown appressed-setose; calyx deeply lobed; lobes triangular-long-ovate, ca. 5 mm, coarsely appressed-hairy, margin ciliate; corolla broadly funnelform, rose, bright to dark red, or white to rose-pink, with dark red flecks on

upper lobes, 3.5–4 × 1.5–2 cm, lobes obovate, 2.5–3 cm; stamens 10, ca. as long as corolla, filaments pubescent below; ovary ovoid, 10-locular, densely shiny brown-strigose; style exerted, glabrous. Capsule ovoid, up to 10 mm, densely strigose, calyx persistent. Fl. Apr–May, fr. Jun–Aug.

*Pinus massoniana* forests, forest margins, open upland thickets; 500–2700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Laos, Myanmar, Thailand].

*Rhododendron chaoanense* T. C. Wu & P. C. Tam (Med. Mat. Guangdong 4: 35. 1978), described from Guangdong, is apparently close to, and possibly a hybrid of, *R. simsii*, but differs from that species in its obscure calyx lobes, 7 stamens, and long-exserted style.

*Rhododendron simsii* var. *albiflorum* R. L. Liu (Acta Bot. Yunnan. 15: 190. 1993), described from Jiangxi, is probably no more than an albino form of *R. simsii*.

*Rhododendron simsii* var. *strigosostylum* G. Z. Li (Guihaia 15: 298. 1995 [“*strigoso-stylum*”]), was described from Guangxi and said to differ from var. *simsii* in having a corolla rose-pink to red, with minute lobes ca. 2 × 1 mm, and a style silky-strigose below. The present authors have seen no material, but, from the original description, it seems likely that this entity is a hybrid of the widely cultivated *R. simsii*.

*Rhododendron simsii* has been used widely in horticulture as a parent of both the “pot azalea” cultivars and a range of cultivars grown in the warmer parts of China.

- 1a. Corolla bright to dark red, 3.5–6 cm ..... 510a. var. *simsii*
- 1b. Corolla white to pink, 2.5–4 cm  
..... 510b. var. *mesembrinum*

**510a. *Rhododendron simsii* var. *simsii***

杜鹃(原变种) du juan (yuan bian zhong)

*Azalea indica* Linnaeus var. *simsii* (Planchon) Rehder; *Rhododendron bellum* W. P. Fang & G. Z. Li (1984), not H. P. Yang (1989); *R. bicolor* P. C. Tam (1983), not Sweet (1830); *R. calleryi* Planchon; *R. indicum* (Linnaeus) Sweet var. *formosanum* Hayata; *R. indicum* var. *ignescens* Sweet; *R. indicum* var. *puniceum* Sweet; *R. indicum* var. *simsii* (Planchon) Maximowicz; *R. petilum* P. C. Tam; *R. viburnifolium* W. P. Fang.

Corolla bright to dark red, 3.5–6 cm.

*Pinus massoniana* forests, open upland thickets; 500–1200 (–2600) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Laos, Myanmar, Thailand].

**510b. *Rhododendron simsii* var. *mesembrinum*** Rehder, J. Arnold Arbor. 10: 183. 1929.

滇北杜鹃 dian bei du juan

Corolla white to pink, 2.5–4 cm.

Forest margins; 1800–2700 m. Yunnan [NE Myanmar].

**511. *Rhododendron octandrum*** M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 24(1): 84. 1987.

八蕊杜鹃 ba rui du juan

Shrubs, ca. 2 m tall; branches many, fine; young shoots densely brown-strigose, hairs flat. Petiole 2–4 mm, densely brown-strigose; leaf blade thinly papery, narrowly elliptic-

lanceolate or oblong-lanceolate, 4–4.5(–8) × 1.5–2 cm; base cuneate or broadly cuneate; margin entire; apex long-acuminate, mucronate; both surfaces densely coarsely yellowish brown strigose when young. Inflorescence 3–5-flowered. Pedicel ca. 0.4 cm, densely yellowish brown strigose; calyx lobes lanceolate, ca. 3 mm, outer surface coarsely strigose; corolla funnelform, pale red, yellowish when dried, without purple flecks, 2.2–2.7 × ca. 2.5 cm; tube cylindric, 12–14 × 4–5 mm in diam. at base, outer surface glabrous; lobes 5, spreading, membranous, oblong or obovate, 1–1.2 × ca. 0.6 cm, pubescent within; stamens 8, unequal, 2.3–2.7 cm, filaments flat, puberulent below; ovary conical, ca. 3 mm, densely coarsely yellowish brown strigose; style ca. 2.5 cm, slightly exerted, glabrous. Capsule conical, ca. 6 mm, coarsely strigose. Fl. May, fr. Sep.

- Open valley forests; ca. 1400 m. NE Guizhou.

**512. *Rhododendron mucronatum*** (Blume) G. Don, Gen. Hist. 3: 846. 1834.

白花杜鹃 bai hua du juan

*Azalea mucronata* Blume, Catalogus, 44. 1823; *A. indica* Linnaeus var. *alba* Lindley; *A. rosmarinifolia* N. L. Burman; *Rhododendron argyi* H. Léveillé; *R. ledifolium* G. Don; *R. rosmarinifolium* (N. L. Burman) Dippel (1889), not Vidal (1886).

Shrubs, semievergreen, 1–2(–3) m tall; young shoots spreading; branches many, densely gray-brown villous, also with a few glandular hairs. Summer and winter leaves different. Petiole 2–4 mm, densely long-strigose, hairs flat, and shortly glandular-hairy; leaf blade papery, lanceolate to ovate-lanceolate or oblong-lanceolate, 2–6 × 0.5–1.8 cm; base cuneate; apex obtuse to rounded. Inflorescence 1–3-flowered. Pedicel to 1.5 cm, densely yellowish brown-villous, also glandular-hairy; calyx lobes 5, lanceolate, ca. 12 mm, densely glandular-pubescent; corolla broadly funnelform, deeply 5-lobed, white, occasionally pale red, without purple flecks, 3–4.5 cm, lobes elliptic-ovate, as long as tube, glabrous; stamens 10, unequal, filaments puberulent below; ovary ovoid, ca. 4 × 2 mm, 5-locular, densely coarsely appressed-glandular-setose; style very long-exserted, glabrous. Capsule conical ovoid, ca. 10 mm. Fl. Apr–May, fr. Jun–Jul.

Cultivated in many places in E and S Sichuan and in many parks in China. Fujian, Guangdong, Guangxi, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang [of cultivated origin].

This species was described from a cultivated plant that may represent an albino form of the Japanese *Rhododendron mucronatum* var. *ripense* (Makino) E. H. Wilson; the latter differs in having rose-pink flowers.

**513. *Rhododendron longifalcatum*** P. C. Tam, Guihaia 2: 73. 1982.

长尖杜鹃 chang jian du juan

Small erect shrubs, ca. 1 m tall; young shoots densely coarsely ferruginous-strigose. Summer and winter leaves different. Petiole 3–7 mm, densely ferruginous-strigose; leaf blade papery, oblong-lanceolate or lanceolate, 3–7(–8.5) × 0.9–2 cm; base narrowly cuneate; margin slightly revolute and entire; apex long-acuminate; abaxial surface densely tomentose and coarse-

ly strigose; adaxial surface sparsely strigose. Inflorescence ca. 5-flowered. Pedicel ca. 0.6 cm, coarsely strigose; calyx shallowly lobed; lobes finely toothed; corolla broadly funnel-campanulate, dark blue, without flecks, 2.2–2.5 cm; tube shortly cylindrical, ca.  $7 \times 3$ –6 mm; lobes spreading, obovate-oblong,  $1.5$ – $1.8 \times 0.7$ –0.8 cm, apex  $\pm$  rounded; stamens 10, unequal, 2.2–2.8 cm, filaments flat, puberulent below; ovary ovoid, ca. 4 mm, densely coarsely ferruginous silky strigose; style ca. 2.6 cm, slightly longer than corolla, but shorter than some stamens, glabrous. Fl. Mar.

- Open thickets; ca. 200 m. SW Guangxi.

**514. *Rhododendron rufohirtum*** Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 58: 153. 1921.

滇红毛杜鹃 dian hong mao du juan

Shrubs, 1.5–2 m tall; branches many and slender, densely shortly red-brown setose and sparsely spreading pilose. Leaves probably of one type. Petiole ca. 5 mm, densely red-brown-villous; leaf blade papery, lanceolate or ovate-lanceolate,  $2.5$ – $6 \times 1$ –2.5 cm; base cuneate or subrounded; apex acuminate; abaxial surface densely shortly red-brown setose with a few long flat hairs. Inflorescence 2–5-flowered. Pedicel ca. 0.4 cm, coarsely red-brown strigose; calyx lobes small, ovate, ca. 2.5 mm, outer surface coarsely red-brown appressed setose; corolla funnel-form, deep rose, with purple flecks on upper 3 lobes, 2.5–3 cm; tube ca. 13 mm, outer surface glabrous, inner surface sparsely pubescent; lobes oblong-ovate, ca.  $1.5 \times 0.8$  cm; stamens 10, unequal, 2.4–3.4 cm, exserted, filaments, sparsely pubescent at base; ovary long-ovoid, ca. 3 mm, densely long red-brown setose; style glabrous. Fl. Mar–Apr, fr. Aug–Sep.

- Thickets; 900–2300 m. SE Guizhou, S Sichuan, NE Yunnan.

**515. *Rhododendron pulchroides*** Chun & W. P. Fang, Acta Phytotax. Sin. 6: 171. 1957.

美艳杜鹃 mei yan du juan

Small shrubs, deciduous, ca. 1 m tall; young shoots yellowish brown crispate-villous. Petioles flat, ca. 2 mm, crispate-villous; leaf blade membranous, oblong or oblanceolate-elliptic, usually  $1.5$ – $2.5 \times 0.5$ –0.9 cm; base broadly cuneate to subrounded; apex obtuse, with a fine-point; both surfaces densely yellowish brown crispate-villous. Inflorescence 1–4-flowered. Pedicel ca. 1 cm, densely crispate-villous; calyx lobes elliptic-ovate, ca.  $3.5 \times 2$  mm, outer surface crispate-pubescent, toothed, apex obtuse; corolla funnel-campanulate, purplish red, 2.5–3 cm, glabrous; lobes obovate, ca. 1.5 cm; stamens 10, unequal, up to 3.2 cm, conspicuously exserted, filaments pubescent below; ovary elliptic to long-elliptic, densely crispate-villous; style ca. 4 cm, glabrous. Fl. Jun.

- Rocky cliffs, light shade by rivers; 900–1000 m. N Guangxi (Longsheng).

This species is a distinctive member of *Rhododendron* sect. *Tsutsusi* on account of its yellowish crispate villous indumentum, subverticillate leaves, toothed calyx lobes with a few teeth, and conspicuously exserted stamens.

**516. *Rhododendron hypoblematosum*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 90. 1982.

背绒杜鹃 bei rong du juan

Shrubs, 1–2 m tall; branches erect, coarsely strigose. Summer and winter leaves different. Petiole 3–4 mm, coarsely strigose; leaf blade thinly leathery, ovate or elliptic-ovate, usually  $1.8$ – $2 \times ca. 0.8$  cm; margin conspicuously revolute; apex acuminate and mucronate base broadly cuneate; abaxial surface scattered strigose, also with a layer of appressed woolly and ferruginous appressed hairs. Inflorescence terminal, 3–4-flowered. Pedicel ca. 0.6 cm, densely ferruginous strigose; calyx cuplike, broad; lobes crenate, enlarging as flowers develop, ca. 4 mm wide, densely coarsely strigose, apex subrounded; corolla funnel-campanulate, pale purple, with darker flecks on the upper lobes, ca. 1.3 cm; tube cylindrical, ca.  $5.5 \times 3$  mm, broader above; lobes oblong elliptic, ca.  $0.7 \times 0.35$  cm, pubescent within; stamens 5, unequal, 0.9–1.1 cm, filaments flat, pubescent at base; ovary ovoid, 3–4 mm in diam., densely coarsely dark brown strigose; style glabrous. Fl. May–Jun, fr. Sep–Oct.

- Submontane thickets; 500–1700 m. Jiangxi.

**517. *Rhododendron crassimedium*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 96. 1982.

棒柱杜鹃 bang zhu du juan

Shrubs, 0.5–1 m tall; branches densely coarsely gray-brown strigose. Summer and winter leaves different. Petiole ca. 2 mm, strigose; leaf blade ovate,  $1.3$ – $1.5 \times 0.7$ –0.8 cm; base cuneate or broadly cuneate; apex acuminate, also mucronate; abaxial surface densely tomentose, also sparsely coarsely ferruginous-strigose; adaxial surface dark green, densely covered with fine warts, sparsely pubescent. Inflorescence 3–6-flowered. Pedicel 0.6–0.7 cm, densely appressed-strigose; calyx lobes subcrenate, ca.  $6 \times 1$  mm, densely coarsely ferruginous strigose; corolla funnel-form, ca.  $1.2 \times 1.5$  cm; tube cylindrical, ca.  $7 \times 3.5$  mm, outer surface glabrous, inner surface puberulent; lobes elliptic-oblong or oblong, ca.  $0.5 \times 0.3$  cm, apex subrounded; stamens 5, unequal, 1.3–1.5 cm, filaments flat, glabrous; ovary ovoid, ca. 3.5 mm in diam., densely strigose; style stout, 1–1.2 cm, shorter than stamens, glabrous. Fl. Apr–May.

- Open thickets; 1000–1600 m. Jiangxi.

**518. *Rhododendron tingwuense*** P. C. Tam, Med. Mat. Guangdong 4: 36. 1978.

鼎湖杜鹃 ding hu du juan

*Rhododendron huiyangense* W. P. Fang & M. Y. He.

Shrubs, 1.5–2 m tall; young shoots slender, subverticillate, strigose. Leaves weakly dimorphic. Petiole 2–4 mm. Leaf blade thickly leathery, elliptic or obovate-elliptic,  $1$ – $2.5 \times 0.5$ –1.3 cm; base broadly cuneate or rounded; margin revolute; apex shortly acuminate; both surfaces coarsely strigose. Inflorescence usually 6–10-flowered. Pedicel 0.3–0.4 cm, densely coarsely dark brown strigose; calyx lobes inconspicuous, strigose; corolla narrowly funnel-form, purplish, 1–1.6 cm; tube ca. 8 mm; lobes oblong, ca. 0.8 cm; stamens 5, ca. 1.7 cm, exserted, filaments white, pubescent; ovary ovoid, ca. 3 mm, silky tomentose and coarsely strigose; style ca. 1 cm, shorter than stamens, glabrous. Capsules ovoid, ca. 5 mm, densely coarsely strigose. Fl. Mar, fr. Jul–Aug.

- Mountain ridges; 800–900 m. Guangdong.

**519. *Rhododendron taipaoense*** T. C. Wu & P. C. Tam, *Med. Mat. Guangdong* 4: 36. 1978.

大埔杜鹃 da pu du juan

Shrubs, 1–1.5 m tall; branchlets many, densely silky pale gray setose and glandular pubescent. Summer and winter leaves different. Petiole 5–10 mm, indumentum as for branchlets; leaf blade leathery, elliptic, oblong or rarely oblong-elliptic, 2.5–6.5 × 1–3 cm; base cuneate, rarely broadly cuneate; margin conspicuously revolute; apex obtuse or acute; adaxial surface densely coarsely yellow-brown felted strigose, later subglabrous, midrib densely short-setose and appressed-strigose. Inflorescence 7–10-flowered. Pedicel ca. 0.6 cm, densely coarsely ferruginous strigose; calyx lobes small, usually finely crenate and coarsely ferruginous strigose; corolla narrowly funnelform, red, ca. 1.8 cm; tube cylindric, ca. 10 × 2 mm in diam.; lobes oblong-linear, ca. 0.8 × 0.3 cm, apex acute; stamens 5, unequal, 2.6–2.8 cm, filaments glabrous; ovary ovoid, ca. 2 mm, densely strigose; style ca. 2.5 cm, shorter than stamens, glabrous. Capsules ovoid, 3–4 mm, coarsely dark red-brown strigose. Fl. Jun, fr. Aug–Sep.

- Open submontane forests, thickets; 700–800 m. E Guangdong.

**520. *Rhododendron litchiifolium*** T. C. Wu & P. C. Tam, *Med. Mat. Guangdong* 4: 35. 1979.

荔枝叶杜鹃 li ye du juan

Shrubs, ca. 2 m tall; branchlets slender, densely coarsely gray-white silky strigose. Petiole 7–12 mm, rarely shorter, densely gray-white strigose; leaf blade thin leathery, oblong-elliptic or oblong-lanceolate, 2–5.3 × 0.6–2.2 cm; base cuneate; margin slightly revolute; obscurely crenate, sparsely coarsely strigose; apex acuminate; both surfaces sparsely gray-white strigose. Inflorescence 10–12-flowered. Pedicel 0.8–1.1 cm, densely coarsely ferruginous silky strigose; calyx lobes obscure, to 5 mm, densely ferruginous strigose; corolla narrowly funnelform, purple-red, lacking flecks, 2–2.2 × ca. 3 cm; tube narrowly cylindric, ca. 10 × 1–3 mm; lobes spreading, oblong, 1–1.2 × ca. 0.6 cm, apex acute; stamens 5, equal, ca. 3 cm, filaments flat, glabrous; ovary ovoid, ca. 3 mm, ferruginous strigose; style ca. 2.4 cm, shorter than stamens, glabrous. Fl. May.

- Thickets, valleys, by rivers. S Guangdong.

**521. *Rhododendron polyraphidoideum*** P. C. Tam, *Bull. Bot. Res.*, Harbin 2(4): 84. 1982.

千针叶杜鹃 qian zhen ye du juan

Shrubs, branchlets slender, coarsely strigose. Summer and winter leaves different. Petiole usually less than 2 mm, densely ferruginous strigose; leaf blade leathery, ovate or oblong-ovate, 1.2–2 × 0.7–1 cm; base cuneate at base; margin slightly revolute and undulate; apex acute; midrib prominent on both surfaces; lateral veins hidden on both surfaces. Inflorescence 2- or 3-flowered. Pedicel ca. 0.4 cm, densely strigose; calyx cup-shaped; lobes subovate to ovate-oblong, ca. 2 × 1.5 mm, outer surface and margin coarsely strigose, glabrous within; corolla shortly funnel-campanulate, 1.2–1.4 cm; tube cylindric, ca. 7 ×

4 mm; lobes unequal, 0.5–0.75 × ca. 0.3 cm; stamens 5, unequal, 1.5–2 cm, filaments sparsely glandular-hairy near the base; ovary ovoid, ca. 3.5 mm, densely strigose; style 1.7–2 cm, longer than or ± as long as stamens, glabrous or hairy at base. Capsule conical subovoid, ca. 5 mm in diam., coarsely strigose.

- Dense forests on mountain summits; 800–1500 m. N Fujian, W Guangdong, Guangxi, S Hunan.

1a. Style glabrous ..... 521a. var. *polyraphidoideum*

1b. Style coarsely dark brown strigose ... 521b. var. *montanum*

**521a. *Rhododendron polyraphidoideum* var. *polyraphidoideum***

千针叶杜鹃(原变种) qian zhen ye du juan (yuan bian zhong)

Style glabrous. Fl. Apr.

- N Fujian, SE Hunan.

**521b. *Rhododendron polyraphidoideum* var. *montanum*** P. C. Tam, *Bull. Bot. Res.*, Harbin 2(4): 85. 1982.

岭上杜鹃 ling shang du juan

Style coarsely dark brown strigose below and near the base. Fl. Aug, fr. Oct–Nov.

- Dense forests on mountain summits; 800–1500 m. W Guangdong, Guangxi, S Hunan.

This variety may not belong to *Rhododendron polyraphidoideum*. It was treated as a synonym of *R. chunii* by Geng (in *Acta Phytotax. Sin.* 42: 566. 2004).

**522. *Rhododendron nanpingense*** P. C. Tam, *Bull. Bot. Res.*, Harbin 2(4): 82. 1982.

南平杜鹃 nan ping du juan

Shrubs; branches cylindric, glabrous; young shoots densely coarsely yellow-brown silky strigose. Possibly summer and winter leaves different. Petiole 4–10 mm, densely strigose; leaf blade elliptic or oblong-elliptic, 2–3.5 × 0.9–1.8 cm; base narrowly cuneate or subrounded; margin revolute and entire, with spine-like cilia; apex acuminate; adaxial surface coarsely white silky strigose; lateral veins conspicuous on both surfaces. Inflorescence 3- or 4-flowered. Pedicel 0.8–1 cm, densely ferruginous strigose; calyx lobes inconspicuous, obtusely triangular; corolla narrowly funnelform, without flecks, ca. 1.5 cm; tube cylindric, ca. 9 × 2.5 mm, glabrous; lobes obovate-oblong, ca. 0.7 cm, apex obtuse; stamens 5, unequal, 2.2–2.7 cm, exerted, filaments puberulent below; ovary ovoid, ca. 2 mm, densely ferruginous-strigose; style ca. 2.4 cm, shorter than some stamens, glabrous. Fl. Mar–Apr.

- C Fujian.

**523. *Rhododendron meridionale*** P. C. Tam, *Guihaia* 2: 71. 1982 [*“meridionalis”*].

南边杜鹃 nan bian du juan

Erect shrubs, ca. 3 m tall; branchlets slender, coarsely ferruginous strigose at first, later glabrescent. Summer and winter leaves different. Petiole 3–5 mm, densely dark brown strigose; leaf blade papery, lanceolate or narrowly lanceolate, 1.5–4



(–7.5) × 0.5–1.5 cm; base narrowly cuneate; margin revolute, undulate; apex shortly caudate-acuminate; midrib slightly impressed adaxially, lateral veins 5–6-paired, slightly impressed, not reaching the margin. Inflorescence 3–6-flowered. Pedicel 1.3–1.5 cm, densely coarsely long yellowish brown strigose; calyx lobes obscure, coarsely ferruginous setose-strigose; corolla broadly funnellform, purple or purple-red, without purple flecks, 2.8–3.1 cm; tube cylindric, 9–11 × ca. 4 mm, glabrous; lobes spreading, oblong-lanceolate, 1.6–2 × ca. 0.8 cm; stamens 5, subequal, ca. 3.5 cm, exerted, filaments glabrous; ovary ovoid, ca. 3 mm, densely coarsely yellow-brown setose-strigose; style ca. 3.5 cm, as long as stamens, glabrous. Capsules ovoid, ca. 7 mm, coarsely gray-brown-strigose. Fl. Mar–Apr, fr. Oct–Nov.

• Valley forests, open forests, ravines; 500–1300 m. N and S Guangxi.

- 1a. Blade of spring leaves to 2 × 0.2–0.4 cm, margin strongly revolute, lateral veins obscure abaxially; style glabrous ..... 523c. var. *minus*
- 1b. Blade of spring leaves 5–7.5 × 0.5–1.3 cm, margin not strongly revolute, lateral veins prominent abaxially; style glabrous or hairy at base.
  - 2a. Style completely glabrous ..... 523a. var. *meridionale*
  - 2b. Style coarsely brown setose-strigose at base ..... 523b. var. *setistylum*

**523a. *Rhododendron meridionale* var. *meridionale***

南边杜鹃(原变种) nan bian du juan (yuan bian zhong)

Blade of spring leaves 5–7.5 × to 1.3 cm, margin not conspicuously revolute, lateral veins prominent abaxially. Style glabrous.

• Valley forests; 600–1300 m. S Guangxi.

**523b. *Rhododendron meridionale* var. *setistylum* P. C. Tam, Guihaia 2: 72. 1982.**

糙柱杜鹃 cao zhu du juan

Blade of spring leaves 5–7.5 × to 1.3 cm, margin not conspicuously revolute, lateral veins prominent abaxially. Style coarsely brown setose-strigose at base. Fl. Mar–Apr, fr. Jul–Aug.

• Open forests, ravines; 500–700 m. S Guangxi.

Judging from the types of both names, var. *setistylum* may not be distinct from var. *meridionale*.

**523c. *Rhododendron meridionale* var. *minus* P. C. Tam, Guihaia 2: 72. 1982 [“*minor*”].**

狭叶南边杜鹃 xia ye nan bian du juan

Blade of spring leaves to 2 × 0.2–0.4 cm, margin conspicuously revolute, lateral veins obscure abaxially. Style glabrous. Fr. Jun.

• Ravines; ca. 900 m. N Guangxi.

**524. *Rhododendron jasminoides* M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 1984(1): 93. 1984.**

素馨杜鹃 su xin du juan

Shrubs, to 5 m tall; young shoots shortly glandular-setose, glabrescent. Petiole 4–7 mm, densely coarsely silky brown-strigose; leaf blade thin leathery, elliptic or elliptic-ovate, 4.5–8(–9.5) × 2.5–4.5 cm; base broadly cuneate; margin subentire; apex acuminate; abaxial surface sparsely shortly brown-setose; lateral veins 5–8-paired, not reaching margin. Inflorescence 10–12-flowered. Pedicel 0.8–1 cm, densely silky brown-strigose; calyx lobes small, triangular-ovate, densely shortly brown-setose; corolla narrowly funnellform, pink, without purple flecks, ca. 2 cm; tube cylindric, ca. 1.1 × 0.3 cm, both surfaces glabrous; lobes ovate, ca. 0.9 cm; stamens 5, unequal, 1.9–2.7 cm, exerted, filaments flat, glabrous; ovary ovoid, ca. 3 mm, densely shortly brown-setose; style purplish, 2–2.2 cm, often shorter than stamens, glabrous; stigma brown, capitate. Fl. Apr–May.

• Mountain forests. E Guangxi.

**525. *Rhododendron florulentum* P. C. Tam, Bull. Bot. Res., Harbin 2(4): 80. 1982.**

龙岩杜鹃 long yan du juan

*Rhododendron hepaticum* P. C. Tam; *R. piceum* P. C. Tam.

Shrubs; branchlets short, shortly ferruginous spreading setose and glandular-setose. Spring and summer leaves different. Petiole 6–10 mm, indumentum as for branchlets; spring leaf blade ovate or elliptic to elliptic-ovate, 3.5–8.5 × 1.2–4.5 cm; base broadly cuneate or subrounded; apex subacute to slightly emarginate; abaxial surface densely yellow-brown woolly and ferruginous strigose; adaxial surface with scattered soft silvery hairs; summer leaves 2.2–3.0 cm, otherwise as for spring leaves. Inflorescence 12–14-flowered. Pedicel 0.9–1.3 cm, densely pale strigose; calyx cup-shaped; lobes triangular, small, coarsely strigose, apex acute; corolla tubular-funnelform, rose-pink to reddish purple, ca. 2.5 cm; lobes narrowly oblong or lanceolate-oblong, ca. 1.2 × 0.4 cm, margin shallowly undulate, apex shortly acuminate; stamens 5, unequal, 2.5–2.8 cm, longer than style, filaments glabrous; ovary ovoid, ca. 3 mm, densely strigose; style slender, ca. 2.3 cm, glabrous. Fl. May.

• Mixed forests, thickets on mountain slopes. C and SW Fujian, NE Guangdong (Jiaoling).

*Rhododendron hepaticum* and *R. piceum* are better treated as synonyms of *R. florulentum*, not of *R. rufulum* (*R. apricum* in the present account) as was given in FRPS (57(2): 400. 1994).

**526. *Rhododendron unciferum* P. C. Tam, Guihaia 2: 73. 1982.**

垂钩杜鹃 chui gou du juan

Shrubs; branches cylindrical, subverticillate, densely coarsely ferruginous strigose, later subglabrous. Spring and summer leaves possibly dimorphic. Petiole 2–3 mm, ferruginous strigose, hairs flat; leaf blade ovate or elliptic-ovate, usually 1.5–2.5(–3.2) × 1–1.7 cm; base broadly cuneate to subrounded; margin revolute and finely crenate; apex acute; abaxial surface sparsely strigose; adaxial surface glabrous except for midrib. Inflorescence 7–12-flowered. Pedicel 0.2–0.3 cm, densely fer-

ruginous-strigose; calyx lobes broadly oblong or oblong-triangular, small, ca. 2.5 mm, densely coarsely strigose; corolla funnellform, reddish purple, without purple flecks, 1.2–1.3 × ca. 0.8 cm; tube 6–7 × ca. 2 mm, glabrous; lobes long-ovate, glabrous; stamens 5, unequal, 1.3–1.7 cm, filaments glabrous. Fl. Apr–May.

- Rocks on hill summits; 700–800 m. S Guangxi.

**527. *Rhododendron apricum*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 79. 1982.

茶绒杜鹃 cha rong du juan

*Rhododendron apricum* var. *falcinellum* P. C. Tam; *R. falcinellum* (P. C. Tam) P. C. Tam; *R. rufescens* P. C. Tam (1982), not Franchet (1895); *R. rufulum* P. C. Tam.

Shrubs, deciduous, 0.5–2(–5) m tall; young shoots densely shortly glandular-setose, glabrescent. Summer and winter leaves different. Petiole 3–5(–12) mm, densely shortly red-brown-glandular-setose; leaf blade leathery, elliptic or narrow-elliptic, rarely ovate-elliptic, 2–5(–10) × 1–2(–5) cm; base broadly cuneate or subrounded; margin conspicuously revolute, shortly brown-setose; apex shortly acuminate; abaxial surface densely shortly red-brown-setose along veins; adaxial surface shortly silky setose, glabrescent. Inflorescence to 18-flowered. Pedicel ca. 1 cm, densely shortly red-brown setose; calyx lobes minute, densely strigose, apex truncate; corolla narrowly funnellform, purple-red, purplish or pink, without purple flecks, 1.8–2.3 cm; tube narrowly long-cylindric, 1–1.3 cm; lobes narrowly oblong, 0.8–1 cm, glabrous; apex mucronate; stamens 5, unequal, 2–2.5 cm, filaments glabrous; ovary ca. 3 mm, densely shortly silky setose; style ca. 2.7 cm, glabrous. Capsule ovoid, ca. 7 × 5 mm, densely shortly glandular-setose. Fl. Apr–May, fr. Aug.

- Open forests and thickets, mixed forest margins; 400–800 m. C and S Fujian.

*Rhododendron rufulum* may be distinct from *R. apricum*, in which case all the synonyms cited above relate to *R. rufulum*.

**528. *Rhododendron kwangtungense*** Merrill & Chun, Sunyatsenia 1: 76. 1930.

广东杜鹃 guang dong du juan

*Rhododendron fongkaiense* C. N. Wu & P. C. Tam.

Shrubs, deciduous, 1.5–3 m tall; young shoots densely long-setose, setae to 4 mm, and shortly glandular-setose. Summer and winter leaves different. Petiole 4–10(–18) mm, indumentum as for young shoots; leaf blade subleathery, lanceolate to oblong-lanceolate or elliptic-lanceolate, 3–8 × 2–4 cm; base cuneate; apex acuminate and mucronate; abaxial surface sparsely setose-ciliate; adaxial surface sparsely coarsely strigose along midrib and lateral veins. Inflorescence 8–9(–16)-flowered. Pedicel 0.7–1 cm, densely ferruginous setose and shortly glandular-hairy; calyx inconspicuous, lobes triangular, very small, margin long ferruginous-setose; corolla narrowly funnellform, purple-red or white, ca. 2 cm; tube narrowly oblong, ca. 10 × 1.5–2.5 mm, glabrous; lobes spreading, oblong, ca. 1 cm, apex obtuse to rounded; stamens 5, subequal, to 2.5 cm, exerted,

filaments glabrous; ovary ovoid, densely long brown-setose; style to 3 cm, longer than stamens, glabrous. Capsules oblong-ovate, 5–10 mm, setose. Fl. May, fr. Jun–Dec.

- Thickets; 800–1600 m. Guangdong, NE Guangxi, Guizhou, S Hunan.

**529. *Rhododendron rivulare*** Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 58: 152. 1921.

溪畔杜鹃 xi pan du juan

Shrubs, evergreen, 1–3 m tall; young shoots densely shortly ferruginous glandular-hairy, also with coarse flat appressed hairs and long setae. Summer and winter leaves different. Petiole 5–10 mm, densely shortly ferruginous glandular-hairy; leaf blade papery, ovate-lanceolate or oblong-ovate, 5–9(–11.5) × 1–4 cm; base subrounded; margin entire, shortly setose; apex acuminate and mucronate; abaxial surface conspicuously hairy on midrib; adaxial surface sparsely villous, later with hair remnants only on midrib; lateral veins not reaching the margin. Inflorescence more than 10-flowered. Pedicel ca. 1.5 cm, densely shortly glandular-hairy and with coarse long flat appressed hairs; calyx lobes narrowly triangular, 2–5 mm, shortly pale yellow-brown glandular-hairy and coarsely long-strigose; corolla funnellform, purple-red, ca. 2.3 cm; tube narrowly cylindric, widening above, ca. 13 × 2 mm, outer surface glabrous, inner surface puberulent, lobes oblong-ovate; stamens 5, unequal, 2.5–2.8 cm, exerted, filaments puberulent below; ovary ovoid, densely red-brown-setose. Capsule oblong-ovoid, ca. 9 × 4 mm, densely long setose. Fl. Apr–Jun, fr. Jul–Nov.

- Dense valley forests; 700–1200 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan.

**530. *Rhododendron indicum*** (Linnaeus) Sweet, Hort. Brit., ed. 2, 343. 1830.

皋月杜鹃 gao yue du juan

*Azalea indica* Linnaeus, Sp. Pl. 1: 150. 1753; *A. macrantha* Bunge; *Rhododendron breynii* Planchon; *R. danielsianum* Planchon; *R. decumbens* D. Don ex G. Don; *R. hamnoense* Nakai; *R. lateritium* Planchon; *R. macranthum* (Bunge) G. Don (1834), not Griffith (1848).

Shrubs, semievergreen, 1–2 m tall; branches many; young shoots densely red-brown strigose, glabrescent. Summer and winter leaves different. Petiole 2–4 mm, coarsely red-brown strigose; leaf blade papery, narrowly lanceolate or oblanceolate, 1.7–3.2(–4.5) × ca. 0.6 cm; base narrowly cuneate; margin sparsely and finely crenate-serrate; apex obtusely pointed; abaxial surface sparsely red-brown strigose; adaxial surface shiny-strigose. Inflorescence 1–3-flowered. Pedicel 0.6–1.2 cm, coarsely white strigose; calyx lobes elliptic-ovate or suborbicular, pale green, 2–3 × 1.5–2 mm, softly white-hairy; corolla broadly funnellform, bright red, occasionally rose-red, with dark red flecks, 3–4 × 3.7(–6) cm; tube ca. 13 mm, lobes broadly elliptic, 1.7–2 × ca. 1.6 cm; stamens 5, unequal, 1.6–2.2 cm, shorter than corolla, filaments puberulent at base; ovary ca. 3 mm, densely shiny brown strigose; style 2.3(–4.5) cm, longer than stamens, glabrous. Capsule oblong-ovoid, 6–8 mm, densely red-brown strigose. Fl. May–Jun.

Widely cultivated in China [native to Japan].

**531. *Rhododendron chrysocalyx*** H. Léveillé & Vaniot, Rept. Spec. Nov. Regni Veg. 2: 113. 1906.

金萼杜鹃 jin e du juan

Shrubs, deciduous, 1–3 m tall; young shoots densely coarsely brown strigose. Summer and winter leaves different. Petiole 3–5 mm, densely coarsely brown strigose; leaf blade papery, linear-lanceolate to oblanceolate, 1.5–4(–6) × 0.5–1.3 cm; base narrowly cuneate; margin revolute, finely crenate towards apex; apex acuminate and mucronate; both surfaces sparsely coarsely brown-strigose, especially on the midrib. Inflorescence 4–7-flowered. Pedicel 0.9–1.8 cm, densely coarsely yellow-brown-strigose; calyx very small, yellow-brown-strigose; corolla narrowly funnellform, white to pale pink or purple, 2.4–2.9 cm; tube narrowly cylindric, widening towards base, 13–15 × 2–3 mm, lobes spreading, oblong-ovate, ca. 1 × 0.5 cm; stamens 5, ca. 3.5 cm, long-exserted, filaments flat, glabrous or pubescent below; ovary subovoid, densely coarsely long shiny yellow-brown-strigose; style ca. 5 cm, longer than stamens, glabrous. Capsules long ovoid, 8–10 mm, densely long yellow-brown strigose. Fl. Mar–Jun, fr. Jun–Oct.

• Thickets, shady slopes; 300–1000 m. N Guangxi, Guizhou, W Hubei, Sichuan.

- 1a. Leaves lanceolate to oblanceolate; inflorescence 4–7-flowered; corolla white to pale pink, tube ca. 3 mm in diam., filaments pubescent below ..... 531a. var. *chrysocalyx*
- 1b. Leaves narrowly oblong, linear-oblanceolate or linear-lanceolate; inflorescence 4- or 5-flowered; corolla purple-red, tube ca. 2 mm in diam., filaments glabrous ..... 531b. var. *xiushanense*

**531a. *Rhododendron chrysocalyx* var. *chrysocalyx***

金萼杜鹃(原变种) jin e du juan (yuan bian zhong)

*Rhododendron spinigerum* H. Léveillé.

Leaf blade lanceolate to oblanceolate. Inflorescence 4–7-flowered. Corolla white to pale pink, tube ca. 3 mm in diam.; filaments pubescent below. Fl. Mar–May, fr. Jun–Oct.

• Thickets; 500–1000 m. N Guangxi, Guizhou, W Hubei.

**531b. *Rhododendron chrysocalyx* var. *xiushanense*** (W. P. Fang) M. Y. He in L. C. Hu & M. Y. Fang, Fl. Reipubl. Popularis Sin. 57(2): 407. 1994.

秀山金萼杜鹃 xiu shan jin e du juan

*Rhododendron xiushanense* W. P. Fang, Acta Phytotax. Sin. 21: 461. 1983.

Leaf blade narrowly oblong, linear-oblanceolate or linear-lanceolate. Inflorescence 4- or 5-flowered. Corolla purple-red, tube ca. 2 mm in diam.; filaments glabrous. Fl. May–Jun.

• Shady slopes; 300–400 m. Sichuan.

Perhaps var. *xiushanense* is not distinct from var. *chrysocalyx*.

**532. *Rhododendron naamkwanense*** Merrill, Lingnan Sci. J. 13: 42. 1934.

南昆杜鹃 nan kun du juan

Small shrubs, 1–1.5(–5) m tall; young shoots densely gray-brown strigose. Leaves all similar. Petiole 1–2 mm, coarsely gray-brown strigose; leaf blade leathery, oblong-ovate or oblong-oblanceolate, 1.5–4 × 0.5–1.2 cm; base cuneate; margin revolute, irregularly shallowly undulate-toothed; apex acute and mucronate; abaxial surface sparsely coarsely strigose especially on the midrib; adaxial surface with pale white wax when dried. Inflorescence 2–4-flowered. Pedicel ca. 0.7 cm, densely coarsely shiny-brown strigose; calyx obsolete, coarsely shiny-brown-strigose; corolla funnellform to narrowly campanulate, purple-red, the upper lobe with or without purple flecks, 2.5–2.8 cm; tube tapering toward the base, ca. 18 × 5 mm, outer surface glabrous, inner surface puberulent; lobes oblong-ovate to oblong-elliptic, ca. 1 × 0.8 cm; stamens 5, unequal, to 3.5 cm, exserted from corolla tube, filaments flat, with scurfy protrusion at base; ovary ovoid, densely shiny brown-strigose; style ca. 4 cm, longer than stamens, glabrous. Capsules long-ovoid, 5–6 mm, densely strigose. Fl. Apr–May, fr. Oct–Nov.

• Forests, shaded rocky cliffs; 300–500 m. Guangdong, S Jiangxi.

- 1a. Leaf blade with lateral veins abaxially conspicuous; upper lobe of corolla apparently without flecks ..... 532a. var. *naamkwanense*
- 1b. Leaf blade with lateral veins abaxially inconspicuous; upper lobe of corolla with dark red flecks ..... 532b. var. *cryptonerve*

**532a. *Rhododendron naamkwanense* var. *naamkwanense***

南昆杜鹃(原变种) nan kun du juan (yuan bian zhong)

*Rhododendron ripicola* P. C. Tam; *R. riparium* A. Wang & P. C. Tam (1978), not Kingdon Ward (1930).

Leaf blade with lateral veins abaxially conspicuous. Upper lobe of corolla apparently without flecks.

• Shaded rocky cliffs; 300–500 m. Guangdong, S Jiangxi.

**532b. *Rhododendron naamkwanense* var. *cryptonerve*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 94. 1982.

紫薇春 zi wei chun

Leaf blade with lateral veins abaxially inconspicuous. Upper lobe of corolla with dark red flecks.

• Forests; ca. 500 m. Guangdong, S Jiangxi.

**533. *Rhododendron mariae*** Hance, J. Bot. 20: 230. 1882.

岭南杜鹃 ling nan du juan

*Rhododendron bicorniculatum* P. C. Tam; *R. gratiosum* P. C. Tam; *R. papyrociliare* P. C. Tam.

Shrubs, deciduous, 1–3(–7.5) m tall; old branches with hair remains; young shoots coarsely red-brown strigose. Summer and winter leaves different. Petiole 4–10 mm, densely red-coarse brown strigose; leaf blade leathery, elliptic-lanceolate to elliptic-obovate, 3–7.8(–11) × 1.3–4 cm; base cuneate; margin slightly revolute, coarsely strigose; apex acuminate and mucro-

nate; abaxial surface sparsely rufous-strigose; adaxial surface ± glabrescent; lateral veins not reaching the margin. Inflorescence 7–16-flowered. Pedicel 0.5–1.2 cm, densely softly brown-hairy; calyx very small, softly yellowish-brown-hairy; corolla narrowly funnellform, lilac, 1.5–2.2 cm; tube cylindric, ca. 13 mm, glabrous; lobes spreading, oblong-lanceolate, apex obtusely pointed; stamens 5, unequal, 1.7–2.5 cm, exserted, filaments broader and glabrous at base; ovary ovoid, ca. 2 mm, densely long silky red-brown-strigose; style longer than stamens, glabrous. Capsules long-ovoid, 9–14 × ca. 3 mm, densely coarsely red-brown-strigose. Fl. Mar–Jun, fr. Jul–Nov.

• Mountain thickets; 500–1300 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi.

*Rhododendron bicorniculatum* and *R. gratiosum* may in fact be distinct species.

**534. *Rhododendron kwangsiense*** Hu ex P. C. Tam, Surv. Gen. Rhododendron S. China, 105. 1983.

广西杜鹃 *guang xi du juan*

Shrubs, semievergreen, 1–3 m tall; young shoots slender, densely brown-strigose. Summer and winter leaves different. Petiole 3–6 mm, densely coarsely brown-strigose; leaf blade leathery, lanceolate or elliptic-lanceolate to obovate, 1.5–3.6 × 1–2 cm; base cuneate; margin slightly revolute; obscurely obtusely toothed; apex acuminate and mucronate or subrounded; both surfaces densely coarsely brown-strigose or abaxial surface coarsely brown-strigose along midrib, leaf blade otherwise glabrous. Inflorescence 5–8-flowered, rarely more. Pedicel 0.5–0.7 cm, densely red-brown-strigose; calyx obscure, densely red-brown-strigose; corolla narrowly funnellform, purple-red or pale purple, 2–2.5 × ca. 3 cm, tube narrowly cylindric, 12–15 mm; lobes long-lanceolate, ca. 1 cm, apex pointed; stamens 5, subequal, ca. 2.7 cm, exserted; filaments flat, glabrous; ovary ovoid, ca. 3 mm, dark brown, densely strigose; style ca. 2.8 cm, longer than stamens, glabrous. Capsule long-ovoid, up to 6 × ca. 4 mm, densely brown-strigose. Fl. May–Jun, fr. Jul–Nov.

• Open forests, thickets; 1000–1800 m. W Guangdong, N Guangxi, SE Guizhou, W Hunan.

Perhaps var. *obovatifolium* is not distinct from var. *kwangsiense* and *Rhododendron kwangsiense* would be better treated as a subspecies of *R. mariae*.

From the original description and accompanying plate, *Rhododendron tiantangense* G. Z. Li (Guihaia 15: 298. 1995), described from Guangxi, is closely allied to *R. kwangsiense*, differing in having stamens pilose below. The present authors hesitate to confirm its status as a distinct species as they have seen no material; however, they do not agree with the original author's suggestion of an affinity with *R. microphyton*.

- 1a. Leaves elliptic to elliptic-lanceolate, apex acuminate and mucronate, adaxial surface glabrous ..... 534a. var. *kwangsiense*
- 1b. Leaves obovate, apex subrounded, adaxial surface densely coarsely brown-strigose ..... 534b. var. *obovatifolium*

**534a. *Rhododendron kwangsiense* var. *kwangsiense***

广西杜鹃(原变种) *guang xi du juan* (*yuan bian zhong*)

*Rhododendron kwangsiense* var. *salicinum* P. C. Tam; *R. kwangsiense* var. *subfalcatum* P. C. Tam; *R. mariae* Hance subsp. *kwangsiense* (Hu ex P. C. Tam) D. F. Chamberlain & Rae.

Leaf blade elliptic to elliptic-lanceolate, apex acuminate and mucronate; abaxial surface coarsely brown-strigose along midrib, otherwise glabrous; adaxial surface glabrous.

• Open forests, thickets; 1000–1800 m. W Guangdong, N Guangxi, SE Guizhou, W Hunan.

**534b. *Rhododendron kwangsiense* var. *obovatifolium*** P. C. Tam, Surv. Gen. Rhododendron S. China, 106. 1983.

钝圆杜鹃 *dun yuan du juan*

Leaf blade obovate, apex subrounded; both surfaces densely coarsely brown-strigose. Fl. Apr.

• SW Guangdong.

**535. *Rhododendron microphyton*** Franchet, Bull. Soc. Bot. France 33: 235. 1886.

亮毛杜鹃 *liang mao du juan*

Erect shrubs, evergreen, 1–2(–5) m tall; shoots densely red-brown-strigose, hairs flat. Leaves all similar. Petiole 2–5 mm, densely coarsely red-brown-strigose, hairs flat; leaf blade papery, elliptic or ovate-lanceolate, 0.5–3.2 × ca. 1.3 cm; base cuneate; margin finely crenate, with coarse appressed hairs above; both surfaces sparsely coarsely red-brown-strigose, more conspicuously so along midrib. Inflorescence 3–7-flowered, rarely with 1 or 2 lateral inflorescences. Pedicel 0.3–0.6 cm, densely coarsely shiny red-brown-strigose; calyx lobes shallowly lanceolate, small, densely long red-brown-strigose; corolla funnellform, whitish to rose or reddish, the upper 3 lobes with red or purple flecks within, to 2 cm; tube narrowly cylindric, 8–10 mm, outer surface glabrous or with long fine hairs; lobes oblong, apex rounded; stamens 5, exserted, filaments linear, puberulent at base; ovary ovoid, ca. 4 mm, 5-locular, densely coarsely long shiny red-brown-strigose; style slender, longer than stamens, glabrous. Capsule ovoid, up to 8 mm, densely shiny red-brown-strigose and puberulent. Fl. Mar–Jul(–Sep), fr. Jul–Dec.

Evergreen broad-leaved forest margins, thickets, ridges; (1300–)2000–2200(–3200) m. N Guangxi, W Guizhou, SW Sichuan, SE and W Yunnan [N Myanmar].

- 1a. Corolla whitish to rose, outer surface glabrous ..... 535a. var. *microphyton*
- 1b. Corolla reddish, outer surface finely long-pilose ..... 535b. var. *trichanthum*

**535a. *Rhododendron microphyton* var. *microphyton***

亮毛杜鹃(原变种) *liang mao du juan* (*yuan bian zhong*)

Corolla whitish to rose, outer surface glabrous. Fl. Mar–Jun(–Sep), fr. Jul–Dec.

Thickets, ridges; (1300–)2000(–3200) m. N Guangxi, W Guizhou, SW Sichuan, SE and W Yunnan [N Myanmar].

**535b. *Rhododendron microphyton* var. *trichanthum*** A. L. Chang ex R. C. Fang, Acta Bot. Yunnan. 4: 249. 1982.

碧江亮毛杜鹃 bi jiang liang mao du juan

Corolla reddish, outer surface finely long-pilose. Fl. Jun–Jul.

• Evergreen broad-leaved forest margins, thickets; ca. 2200 m. W Yunnan.

Perhaps var. *trichanthum* does not merit recognition.

**536. *Rhododendron obtusum*** (Lindley) Planchon, Fl. Serres Jard. Eur. 9: 80. 1853–1854.

钝叶杜鹃 dun ye du juan

*Azalea obtusa* Lindley, J. Hort. Soc. London 1: 152. 1846.

Low shrubs, 1(–4) m tall; branchlets slender, often pseudoverticillate, densely coarsely ferruginous-strigose. Leaves all similar. Petiole ca. 2 mm, coarsely gray-white-strigose; leaf blade membranous, elliptic to elliptic-ovate or oblong-oblancoolate to obovate, 1–2.5 × 0.4–1.2 cm; base broadly cuneate; margin ciliate; apex obtusely pointed or rounded, sometimes mucronate; both surfaces sparsely coarsely strigose, more conspicuously so along midrib. Inflorescence usually 2- or 3-flowered. Pedicel 0.4–0.8 cm, densely coarsely ferruginous-strigose, hairs flat; calyx lobes ovate, to 4 mm, coarsely strigose; corolla funnel-campanulate, red to pink or reddish, one lobe with dark flecks, ca. 1.5 × 2.5 cm; lobes oblong, ca. 1 × 0.5 cm, apex obtuse; stamens 5, ca. as long as corolla, filaments, glabrous; ovary densely coarsely brown-strigose; style ca. 2.5 cm, longer than stamens, glabrous. Capsule conical to broadly elliptic-ovoid, ca. 6 mm, densely coarsely ferruginous-strigose.

Cultivated in E and SE China [of cultivated origin].

There are many varieties and garden hybrids of this widely cultivated plant, the first form of which originated in Shanghai. It seems likely that *Rhododendron obtusum* was derived from a hybrid of the Japanese *R. kiusianum* Makino.

**537. *Rhododendron adenanthum*** M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 1984(1): 94. 1984.

腺花杜鹃 xian hua du juan

Small shrubs, ca. 1 m tall; young shoots slender, densely coarsely brown strigose. Petiole ca. 3 mm, coarsely brown strigose; leaf blade papery, elliptic or elliptic-ovate, 2.5–4 × 0.9–1.3 cm; base broadly cuneate or subrounded; apex acute; abaxial surface sparsely coarsely strigose on midrib and lateral veins only; lateral veins obscure on both surfaces. Inflorescence usually 5-flowered. Pedicel to 0.4 cm, densely coarsely brown silky strigose; calyx lobes triangular-ovate, densely brown silky strigose; corolla funnel-campanulate, white, with purple flecks on upper lobes, ca. 1.1 cm; tube cylindric, 6–7 × ca. 4 mm, sparsely coarsely silky brown-strigose, outer surface glandular-hairy, inner surface pubescent; lobes unequal in size, elliptic or long-elliptic, ca. 0.5 × 0.3–0.4 cm; stamens 5, unequal, 1.4–1.7 cm, exserted, filaments flat, pubescent below; ovary ovoid, ca. 2.5 mm, densely coarsely silky brown-strigose; style ca. 1.1 cm, shorter than the stamens, densely coarsely silky brown-strigose below. Fl. Apr–May.

• Open forests on ridges. NE Guangxi.

**538. *Rhododendron hejiangense*** M. Y. He, Bull. Bot. Res., Harbin 5(4): 118. 1985.

合江杜鹃 he jiang du juan

Small shrubs, ca. 1 m tall; young shoots slender, densely coarsely reddish strigose. Petiole ca. 3 mm, pale red-strigose; leaf blade thinly leathery, oblong or oblong-elliptic, 1–1.5(–2.6) × 0.7–1.3 cm; base subrounded; margin slightly revolute; apex acute and mucronate; abaxial surface yellowish brown strigose; adaxial surface sparsely coarsely strigose or glabrous except for hairs at base of midrib. Inflorescence terminal, usually 3–6-flowered. Pedicel ca. 0.6 cm, densely reddish strigose; calyx obscure, densely strigose; corolla funnel-campanulate, white, upper lobe with purple flecks, ca. 1.1 cm; tube cylindric, 5–6 × ca. 3 mm, outer surface sparsely strigose, inner surface puberulent; lobes unequal, oblong, ca. 0.5 × 0.3 cm; stamens 5, unequal, 1.3–1.6 cm, exserted, filaments flat, glabrous; ovary ovoid, ca. 3 mm, densely coarsely silky yellowish brown-strigose; style ca. 1 cm, shorter than stamens, sparsely coarsely strigose to middle. Fl. May–Jun.

• Thickets, sides of channels. S Sichuan.

This species is said to resemble *Rhododendron chunii*, but it differs in the white corolla, the glandular pedicel, corolla, and style, and in the glabrous filaments that are longer than the style.

**539. *Rhododendron fuchsiifolium*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 148. 1914 [*“fuchsiifolia”*].

贵定杜鹃 gui ding du juan

Small shrubs, 0.5–1.2 m tall; shoot slender, densely coarsely brown strigose. Leaves probably all similar. Petiole 2–3 mm, dense brown-strigose, hairs flat; leaf blade papery, ovate or elliptic-ovate, 1.3–3 × 0.8–1.5 cm; base broadly cuneate or subrounded; margin slightly revolute; apex acuminate and mucronate; abaxial surface strigose at base on midrib, otherwise glabrous; adaxial surface sparsely coarsely brown strigose; lateral veins 4–6-paired, not reaching the margin. Inflorescence 3- or 4-flowered. Pedicel ca. 0.4 cm, densely brown-strigose, hairs flat; calyx lobes ovate, small; corolla funnelform, pale rose, ca. 1 cm; tube ca. 4 mm, outer surface glandular hairy, inner surface pubescent; lobes oblong, ca. 0.6 cm, sparsely glandular hairy from base to middle; stamens 5, subequal, exserted, filaments flat, puberulent below; style sparsely glandular hairy below. Capsule ovoid, ca. 5 × 3–4 mm, densely coarsely brown-strigose. Fl. May–Jun, fr. Aug–Sep.

• Dense forests on ridges. Guangdong, Guangxi, S Guizhou.

**540. *Rhododendron viscidum*** C. Z. Guo & Z. H. Liu, Acta Bot. Yunnan. 10: 497. 1988.

粘质杜鹃 nian zhi du juan

Small shrubs, to 1 m tall; young shoots slender, densely coarsely red-brown-strigose, hairs flat. Petiole 2–6 mm, coarsely strigose; leaf blade leathery, obovate to elliptic-obovate or elliptic, 1–2 × 0.5–1.2 cm; base narrowly cuneate; margin slightly revolute, ciliate; apex acute and mucronate; both surfaces coarse-

ly red-brown-strigose; lateral veins 3–4-paired, not reaching margin. Inflorescence 4- or 5(–9)-flowered; flower buds very sticky. Pedicel 0.5–0.7 cm, coarsely red-brown-strigose, hairs flat; calyx lobes triangular-lanceolate, 2–3 mm, margin long-ciliate; corolla funnellform, pinkish purple or pale white, with dark red flecks on upper 3 lobes, 1–1.3 cm; tube cylindric, ca. 6 mm, outer surface villous and shortly glandular, inner surface pubescent; lobes ovate, 0.6–0.7 cm, outer surface puberulent along midrib; apex obtusely pointed; stamens 5, unequal, exerted; filaments pubescent at base; style shorter than stamens, puberulent at base. Capsule ovoid, 6–7 mm, red-brown-strigose. Fl. Apr–May, fr. Oct–Nov.

- Forests; 1800–2000 m. S Hunan.

From the original description, *Rhododendron viscidum* appears closely allied to, and is probably synonymous with, *R. viscigemmatum*. The two species were described from adjacent parts of Hunan and Guangxi, respectively.

**541. *Rhododendron rhuayenense*** Chun ex P. C. Tam, Surv. Gen. Rhododendron S. China, 96. 1983.

乳源杜鹃 ru yuan du juan

Shrubs, to 3 m tall; shoots with long bristles and short glandular hairs. Summer and winter leaves different. Petiole 4–10 mm, densely long-setose and shortly glandular-hairy; leaf blade leathery, elliptic-lanceolate, long-lanceolate or broadly ovate, 2.5–6.5 × 1.5–3(–4.5) cm; base subrounded and slightly asymmetrical; margin revolute, long-setose, rarely shortly glandular-hairy; apex acuminate and mucronate; abaxial surface sparsely setose, setae may be reduced to swollen hair bases; adaxial surface subglabrous except for persistent setae along midrib, lateral veins not reaching the margin. Inflorescence ca. 12-flowered. Pedicel 0.8–1 cm, densely long brown-setose and shortly glandular-hairy; calyx lobes shallowly divided, ovate or triangular-ovate, small, densely coarsely long-strigose; corolla rotate-campanulate, pink or pink-purplish blue, the upper lobes with red flecks, ca. 1 cm; tube short, ca. 5 × 4 mm, outer surface glandular-hairy, inner surface puberulent; lobes spreading, ovate, as long as corolla tube; stamens 5, unequal, 1.5–1.8 cm, long-exserted, filaments puberulent at base; ovary ovoid, brown-setose and glandular-hairy; style ca. 1.2 cm, shorter than stamens, long red-brown-setose and glandular-hairy. Capsule ovoid, 5–6 × ca. 4 mm, long dark-setose. Fl. May–Jun, fr. Jul–Nov.

- Open forests and thickets; 1500 m. N Guangdong, S Hunan, E Jiangxi.

This species was described (in Chinese) and illustrated under the name "*Rhododendron lingii* Chun" (Ching, Iconogr. Cormophyt. Sin. 3: 151, t. 4256. 1974), which was not validly published.

**542. *Rhododendron crassistylum*** M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 24(1): 83. 1987.

粗柱杜鹃 cu zhu du juan

Low shrubs, ca. 1 m tall; old branches with hair remains; young shoots dark gray-brown, subverticillate, sparsely coarsely strigose. Petiole ca. 3.5 mm, hairy; leaf blade leathery, elliptic or elliptic-ovate, 1.3–2.5(–3) × 0.8–1.2 cm; base broadly cu-

neate or subrounded; margin slightly revolute, obtusely serrate; apex acuminate and mucronate; abaxial surface sparsely coarsely strigose; adaxial surface with mammiform prominences, subglabrous; midrib prominent abaxially, conspicuously impressed adaxially; lateral veins 4–5-paired, usually not obviously reaching the margin. Inflorescence 5–8(–13)-flowered. Pedicel ca. 0.7 cm, densely coarsely ferruginous strigose; calyx small, densely ferruginous-strigose; corolla funnellform, purplish, with dark purple flecks, 1–1.5 cm; tube cylindric, 5–7 × 3–4 mm, outer surface glabrous, inner surface puberulent; lobes spreading, oblong, ca. 0.6 × 0.3–0.4 cm, glabrous; stamens 5, subequal, 1.2–1.4 cm, exerted, filaments flat, glabrous; ovary conical, long-cylindric, ca. 3 mm, 5-loculed, densely coarsely ferruginous-strigose; style stout, ca. 1 cm, shorter than stamens, densely coarsely silky ferruginous-strigose below. Capsule conical, 4–5 mm. Fl. Apr–May.

- Mountain thickets. SW Jiangxi.

**543. *Rhododendron tsoi*** Merrill, J. Lingnan Sci. 13: 42. 1934.

两广杜鹃 liang guang du juan

*Rhododendron subenerve* P. C. Tam var. *nudistylum* P. C. Tam.

Shrubs, 0.5–1 m tall, semievergreen; young shoots densely coarsely castaneous-brown-strigose. Summer and winter leaves different. Petiole 1–2.5 mm, coarsely castaneous-brown-strigose; leaf blade leathery, elliptic or obovate, broadly elliptic, 0.5–1.4 × 0.4–0.9 cm; base cuneate; margin slightly revolute, sparsely setose-ciliate; apex obtuse or subrounded, often mucronate; abaxial surface more densely strigose, especially on midrib; adaxial surface sparsely strigose or subglabrous. Inflorescence 3–5-flowered. Pedicel 0.3–0.4 cm, densely castaneous-brown-strigose; calyx lobes small, coarsely strigose, apex subtruncate; corolla narrowly funnellform, rose, ca. 1 cm; tube 3–4 mm, outer surface glabrous, inner surface sparsely pubescent; lobes oblong to oblong-ovate, 0.5–0.6 × 0.3–0.4 cm, apex rounded; stamens 5, ca. 0.9 cm, slightly shorter than the corolla, filaments flat, puberulent below; ovary ovoid, densely coarsely castaneous-brown-strigose; style ca. 0.7 cm, glabrous. Capsule oblong-ovoid, 4–5 mm, coarsely castaneous-brown-strigose. Fl. Apr–May, fr. Jun–Aug.

- Open forests, arid mountains, meadows; 700–1600 m. S Guangdong, C and SW Guangxi.

**544. *Rhododendron fuscipilum*** M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 1984(1): 94. 1984.

棕毛杜鹃 zong mao du juan

Shrubs; young shoots densely strigose. Petioles to 4 mm, densely coarsely ferruginous-strigose; leaf blade papery, lanceolate or elliptic-lanceolate, 1.8–4.5 × 0.7–1.8 cm; base cuneate or subrounded; margin slightly revolute, coarsely strigose; apex acute; abaxial surface at first sparsely strigose, later sometimes coarsely strigose on midrib only; adaxial surface at first sparsely strigose. Inflorescence 4–7-flowered. Pedicel ca. 0.3 cm, densely coarsely silky yellowish-brown-strigose; calyx lobes small, coarsely ferruginous-strigose; corolla funnel-campanulate, pink, with purple flecks, 1–1.2 cm; tube cylindric, ca. 5 ×

2–3 mm, outer surface brown-glandular-hairy at base, inner surface pubescent; lobes long-ovate, 0.6–0.7 × 0.2–0.3 cm, glabrous; stamens 5, unequal, 1.2–1.6 cm, exserted, filaments flat, puberulent below; ovary ovoid, ca. 3 mm, densely ferruginous-strigose; style ca. 1.3 cm, coarsely ferruginous-strigose over entire length. Fl. May.

- E Guangxi.

**545. *Rhododendron hunanense*** Chun ex P. C. Tam, Bull. Bot. Res., Harbin 2(1): 92. 1982.

湖南杜鹃 hu nan du juan

*Rhododendron hunanense* var. *mangshanicum* P. C. Tam.

Shrubs, 1–2 m tall; young shoots densely brown-glandular-setose, also sparsely spreading-pubescent. Summer and winter leaves different. Petiole ca. 3 mm, densely setose-strigose; leaf blade papery, elliptic or elliptic-lanceolate, rarely obovate, 2.5–4.2(–7) × 1.5–2.5 cm; base cuneate or subrounded; margin entire and slightly revolute, shortly ciliate; apex acuminate and mucronate; abaxial surface densely coarsely setose-strigose; adaxial surface sparsely coarsely silky-strigose, later subglabrous with dense wartlike protuberances. Inflorescence 5–10-flowered. Pedicel 0.5–0.7 cm, densely coarsely brown-setose-strigose; calyx lobes oblong, small, densely strigose; corolla rotate-campanulate, white, purplish or reddish, upper lobes with red flecks, ca. 1.1 cm; tube cylindrical, ca. 6 × 2.5 mm, inner surface puberulent; lobes spreading, broadly elliptic or subrounded, ca. 0.5 cm; stamens 5, unequal, 1.2–1.6 cm, exserted, filaments flat, puberulent at base; ovary ovoid, ca. 3 mm, densely coarsely brown-setose-strigose; style ca. 1.2 cm, shorter than or as long as the stamens, sparsely coarsely setose-strigose. Capsule ovoid, 5–6 × ca. 4 mm, densely setose-strigose. Fl. May, fr. Jul–Nov.

- Valley thickets; 500–1700 m. S Hunan, E Jiangxi.

**546. *Rhododendron myrsinifolium*** Ching ex W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 88. 1982.

铁仔叶杜鹃 tie zi ye du juan

*Rhododendron caespitulum* P. C. Tam.

Small shrubs, ca. 1.5 m tall; young shoots sparsely setose or pubescent, later subglabrous. Leaves all similar. Petiole 2–3 mm, densely coarsely ferruginous appressed setose; leaf blade thickly leathery, elliptic, rarely obovate, 0.6–0.8 × 0.3–0.5 cm; base cuneate; margin slightly revolute, with red-brown punctate glands; apex acute, obtusely pointed and hard; both surfaces subglabrous; lateral veins prominent. Inflorescence 2- or 3-flowered. Pedicel ca. 0.4 cm, densely coarsely ferruginous-setose-strigose; calyx lobes obtuse, small, outer surface coarsely setose-strigose; corolla funnel-campanulate, purple, without flecks, ca. 1 cm; tube cylindrical, ca. 4 × 2 mm; lobes slightly spreading, oblong or oblong-ovate, ca. 0.6 × 0.25 cm, glabrous, apex subrounded; stamens 5, unequal, 1.2–1.4 cm, exserted, filaments linear, glabrous; ovary ovoid, 2–3 mm, densely coarsely ferruginous-setose-strigose; style 1.2–1.5 cm, slightly curved, coarsely appressed setose below. Capsule ovoid, ca. 4 × 1.5–2 mm, densely ferruginous-setose-strigose. Fl. Apr–May, fr. Jul–Aug.

- Forests, mountain ridges; ca. 1800 m. S Guangxi.

**547. *Rhododendron guizhongense*** G. Z. Li, Guihaia 15: 198. 1995.

腺柱杜鹃 xian zhu du juan

*Rhododendron glandulostylum* W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 84. 1982, not Komatsu (1918).

Small shrubs, 1–2 m tall; young shoots densely long dark brown-setose, later subglabrous. Summer and winter leaves different. Petiole 2–4 mm, densely long-setose; leaf blade papery, narrowly elliptic or elliptic-oblong, 2–3.5 × 1–1.4 cm; base cuneate or broadly cuneate; margin slightly revolute, obscurely crenate, ciliate; apex acuminate or mucronate; both surfaces sparsely coarsely strigose at first; abaxial surface later with a few hooklike hairs on midrib; lateral veins prominent on both surfaces. Inflorescence 3–5-flowered. Pedicel ca. 0.5 cm, densely long brown-setose and glandular; calyx lobes triangular, 3–5 mm, coarsely brown-strigose; corolla funnelform, red or purple-red, ca. 1.2 × 1 cm; tube cylindrical, ca. 6 × 4 mm, outer surface shortly glandular-hairy, inner surface pubescent; lobes 0.6–0.8 cm; stamens 5, unequal, up to 1.3 cm, slightly exserted from corolla, filaments flat, puberulent at base; ovary ovoid, 2–3 mm, densely brown-strigose; style 1.2–1.5 cm, shorter than some of the stamens, sparsely setose-strigose below, shortly glandular-hairy above. Fl. May.

- Mountain forests; 1200–1700 m. E Guangxi.

This species may be synonymous with *Rhododendron subenerve*, but is said to differ in the indumentum on the young shoots, etc.

**548. *Rhododendron subenerve*** P. C. Tam, Surv. Gen. Rhododendron S. China, 108. 1983.

灌阳杜鹃 guan yang du juan

Shrubs; young shoots densely coarsely red-brown-strigose. Leaves with 2 forms. Summer and winter leaves probably different. Petiole to 2 mm or ± absent, densely red-brown-strigose; leaf blade leathery, ovate or oblong-ovate, 1.5–3 × 0.7–1.1 cm; base broadly cuneate or subrounded; margin slightly revolute, coarsely red-brown-strigose; apex obtusely pointed and acute; abaxial surface subglabrous though with some hairs on midrib; adaxial surface coarsely strigose, glabrescent, midrib prominent on both surfaces; lateral veins obscure. Inflorescence 4- or 5-flowered. Pedicel 0.6–0.8 cm, densely red-brown-strigose; calyx lobes crenate, ca. 1 × 2 mm; corolla shortly funnelform, flower color unknown though apparently without flecks, ca. 0.9 cm; tube cylindrical, ca. 3.5 × 3 mm; lobes oblong-ovate, ca. 0.55 × 0.3 cm, apex acute; stamens 5, unequal, 1.2–1.6 cm, filaments sparsely puberulent; ovary ovoid, ca. 3 mm; style ca. 1.3 cm, coarsely strigose below, finely glandular above. Capsule ovoid or subovoid, ca. 4 mm, densely coarsely red-brown-strigose. Fr. Sep–Nov.

- Dense mountain forests, forest margins. NE Guangxi.

**549. *Rhododendron malipoense*** M. Y. He, J. Sichuan Univ., Nat. Sci. Ed. 1984(1): 95. 1984.

麻栗坡杜鹃 ma li po du juan

Shrubs, ca. 2 m tall; young shoots pale purple, densely

brown-strigose. Petiole 3–7 mm, coarsely strigose; leaf blade papery, ovate or ovate-elliptic, rarely long-ovate, 2–4(–5.5) × 1.5–3 cm; base broadly cuneate or subrounded; margin crenate, sparsely coarsely strigose; apex acuminate or acute; abaxial surface with hairs only on the midrib and lateral veins; adaxial surface sparsely brown-strigose. Inflorescence 3- or 4-flowered. Pedicel ca. 0.5 cm, densely brown-strigose; calyx lobes small, with brown hairs; corolla funnelform, pinkish, without purple flecks, 1.6–2 cm; tube cylindrical, ca. 10 mm, outer surface glabrous, inner surface puberulent; lobes oblong-obovate, 0.9–1.2 × ca. 0.5 cm, both surfaces glabrous; stamens 5, subequal, 1.9–2.1 cm, exerted from corolla tube, filaments flat, puberulent; ovary conical, ca. 3 mm, densely coarsely brown-strigose below; style coarsely strigose below, not glandular above. Capsule conical, ca. 5 × 4 mm, coarsely brown-strigose.

- Broad-leaved mixed forests; 1500–1700 m. S Yunnan.

**550. *Rhododendron cretaceum*** P. C. Tam, Surv. Gen. Rhododendron S. China, 108. 1983.

白枝杜鹃 bai zhi du juan

Shrubs, ca. 1.5 m tall; young shoots subverticillate, coarsely gray-white-strigose, glabrescent. Summer and winter leaves different. Petiole 2–4 mm; leaf blade papery, ovate or elliptic-ovate, 2–4.5 × 1–2 cm; base broadly cuneate; margin sparsely strigose; apex shortly acuminate and mucronate; both surfaces coarsely strigose; lateral veins obscure. Inflorescence 5- or 6-flowered. Pedicel 0.1–0.5 cm, ferruginous-strigose; calyx lobes finely crenate, densely coarsely ferruginous-strigose; corolla funnel-campanulate, white, with red flecks, ca. 1.6 cm; tube cylindrical, ca. 9 mm, outer surface sparsely coarsely strigose; lobes oblong, ca. 0.7 cm; stamens 5, unequal, 1.6–2.3 cm, exerted from corolla tube, much longer than style, filaments glabrous; ovary ovoid, ferruginous-strigose; style coarsely strigose near base. Fl. Apr.

- N Guangdong.

**551. *Rhododendron yangmingshanense*** P. C. Tam, Bull. Bot. Res., Harbin 2(1): 97. 1982.

阳明山杜鹃 yang ming shan du juan

Shrubs, ca. 1 m tall; young shoots densely coarsely silky-strigose. Summer and winter leaves different. Petiole ca. 5 mm, coarsely strigose; leaf blade leathery, oblong-lanceolate or oblong-elliptic to elliptic, 1–2.5 × 0.5–1.5 cm; base cuneate; margin slightly revolute, shallowly undulate; apex acuminate or acute, mucronate; abaxial surface densely coarsely strigose and ciliate; adaxial surface coarsely silvery-gray-strigose with small wartlike prominences. Inflorescence 5–8-flowered. Pedicel 0.4–0.5 cm, densely ferruginous silky-strigose; calyx lobes finely crenate, small; corolla funnel-campanulate, pale purple or purple-red, without purple flecks, 0.8–1.1 cm; tube shortly cylindrical, 5–6 × ca. 3 mm, both surfaces glabrous; lobes slightly spreading, oblong, 0.3–0.5 × ca. 0.25 cm; stamens 5, unequal, ca. 1.2 cm, filaments puberulent at base; ovary ovoid, ca. 3 mm, densely coarsely silky ferruginous-strigose; style slender, ca. 1 cm, longer than some stamens, coarsely strigose at base. Capsule ovoid, ca. 5 × 3.5 mm, densely gray-brown-strigose. Fl. Apr.

- Open forests; 200–300 m. Hunan.

**552. *Rhododendron breviperulatum*** Hayata., Icon. Pl. Formos. 3: 129. 1913.

短鳞芽杜鹃 duan lin ya du juan

*Rhododendron rubropilosum* Hayata var. *breviperulatum* (Hayata) T. Yamazaki.

Small much-branched shrubs, 1–3 m tall; shoots fine, coarsely shiny-brown-strigose, hairs flat. Petiole 3–7 mm; leaf blade papery, ovate-elliptic to oblong-obovate, 2–3 × 1–1.5 cm; base narrowly cuneate; margin entire; apex obtuse and mucronate; abaxial surface midrib densely coarsely scurfy-strigose; adaxial surface strigose. Inflorescence 3–6-flowered. Pedicel 0.4–0.6 cm, densely long-setose; calyx lobes membranous, ovate or subrounded, small, ca. 1.5 mm, margin ciliate; corolla broadly funnelform, rose-pink, with crimson flecks on upper lobes, ca. 2.5 cm, lobes deeply cut, oblong, apex obtuse; stamens 5, unequal, shorter than corolla; filaments flat, glabrous or sparsely puberulent at base; conical ovary and base of style coarsely strigose. Capsule conical, ca. 11 × 5 mm, pubescent.

- Mountain forests. Taiwan (E and N coasts).

**553. *Rhododendron viscigemmatum*** P. C. Tam, Surv. Gen. Rhododendron S. China, 107. 1983.

粘芽杜鹃 nian ya du juan

Shrubs, ca. 3.5 m tall; young shoots densely coarsely ferruginous-strigose, with fine dark round flecks. Summer and winter leaves different. Petiole 4–6 mm, densely coarsely silky ferruginous-strigose; leaf blade papery, elliptic or oblong-elliptic, rarely ovate-elliptic, 0.8–2.5(–3.5) × 0.5–1.5 cm; base cuneate; margin conspicuously revolute; apex mucronate or acuminate; abaxial surface paler; adaxial surface appressed-strigose, with a felted indumentum intermixed with brown hairs (some hairs sticky). Inflorescence 3- or 4-flowered. Pedicel 0.3–0.4 cm, densely silky ferruginous-strigose; calyx lobes undulate crenate, small at anthesis, densely ferruginous-strigose, enlarging in fruit, then with lobes crenate to oblong, ca. 3 × 1.5 mm; corolla shortly funnel-campanulate, color unknown though with dark flecks, ca. 0.9 cm; tube shortly cylindrical, ca. 4 × 3 mm, outer surface with small obtuse spines, inner surface glabrous; lobes spreading, obovate-oblong, ca. 0.5 cm, apex obtuse; stamens 5, unequal, 1.4–1.7 cm, exerted, filaments flat, puberulent below; ovary ovoid, ca. 3 × 2 mm, densely coarsely silky ferruginous-strigose; style ca. 2 cm, longer than stamens, densely coarsely strigose below. Capsule long-ovoid, 5–6 × ca. 4.5 mm, densely strigose.

- Open subalpine forests; ca. 1000 m. E Guangxi.

**554. *Rhododendron minutiflorum*** Hu, J. Arnold Arbor. 12: 155. 1931.

小花杜鹃 xiao hua du juan

Erect shrubs, to 3 m; branches subverticillate, densely coarsely red-brown-strigose, hairs flat. Leaves all similar. Leaf blade leathery, oblong to obovate or broadly ovate, 0.8–1.5 × 0.3–0.5 cm; base cuneate; margin finely crenate; apex acute and



mucronate; abaxial surface coarsely red-brown-setose on midrib and margin, otherwise glabrous; adaxial surface sparsely red-brown-strigose at first. Inflorescence 3-flowered. Pedicel 0.4–0.6(–0.8) cm, densely coarsely strigose, hairs flat; calyx lobes round, small, coarsely red-brown-strigose; corolla rotate-funnel-form, white, pale purple or purple, ca. 0.6 × 0.7 cm; tube ca. 3 mm, outer surface reddish glandular-hairy, inner surface puberulent; lobes spreading, ovate, ca. 0.3 cm, glabrous; stamens 5, subequal, ca. 0.7 cm, slightly exerted, filaments flat and puberulent below; ovary ovoid, ca. 3 mm, densely coarsely red-brown-strigose; style ca. 0.8 cm, longer than stamens, sparsely shortly glandular-hairy below. Capsule ca. 3 mm, densely strigose. Fl. Apr–May, fr. Jun–Aug.

- Hills; 1100–1500 m. N Guangdong, Guangxi.

**555. *Rhododendron chunii*** W. P. Fang, Sunyatsenia 7: 1. 1948.

龙山杜鹃 long shan du juan

Shrubs, 1–2(–6) m tall; young shoots densely coarsely brown-strigose. Leaves all similar. Petiole 2–3 mm, densely strigose; leaf blade leathery, ovate, oblong-ovate or elliptic-ovate, 1–1.7 × 0.4–0.8 cm; base broadly cuneate; margin revolute and finely crenate; apex acuminate; both surfaces sparsely coarsely strigose. Inflorescence 3- or 4-flowered. Pedicel 0.5–0.7 cm, coarsely dark brown-strigose; calyx lobes ovate, small, ca. 1.5 mm, strigose, especially on the margin; corolla funnel-form, pale purple-red, the upper lobe with dark purple flecks, 1–1.3 cm; tube to 5 mm, outer surface sparsely coarsely brown-strigose, inner surface puberulent; lobes spreading, ovate-oblong, outer surface coarsely strigose at base; apex obtuse or subrounded; stamens 5, subequal, 0.8–1.4 cm, exerted, filaments flat below, hairy; ovary ovoid, ca. 3 mm, densely coarsely shiny brown-strigose; style 1.5–1.8 cm, longer than stamens, glandular above, coarsely brown appressed setose below. Capsule ovate, coarsely strigose. Fl. Apr, fr. May–Jun.

- Open valley forests; 1100–1800 m. N Guangdong.

**556. *Rhododendron rhodanthum*** M. Y. He, Bull. Bot. Res., Harbin 5(4): 116. 1985.

淡红杜鹃 dan hong du juan

Shrubs, ca. 1 m tall; young shoots densely coarsely yellowish-brown-strigose. Petiole 2–5 mm; leaf blade papery, elliptic or elliptic-oblong, 3–4 × 1–1.5 cm; base cuneate; margin slightly revolute; apex acuminate and mucronate; both surfaces coarsely silky brown-strigose. Inflorescence 1- or 2-flowered. Pedicel ca. 0.7 cm, coarsely silky-strigose; calyx lobes ovate, outer surface densely coarsely strigose; corolla funnel-campanulate, purple-red, with purple flecks when dry, ca. 2.3 cm; tube cylindrical, 12–14 × ca. 3 mm, outer surface sparsely long-strigose, inner surface glabrous; lobes membranous, narrowly elliptic, ca. 0.9 × 0.5 cm, vein lines conspicuous; stamens 5, subequal, 1.9–2.3 cm, exerted, filaments flat, puberulent below; ovary ovate, ca. 3 mm, silky-strigose; style ca. 2.9 cm, longer than the stamens, coarsely silky dark brown-strigose below. Fl. Apr.

- Open valley forests. S Hunan.

**557. *Rhododendron seniavinii*** Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 16(9): 33. 1870 [*“seniavini”*].

毛果杜鹃 mao guo du juan

?*Rhododendron seniavinii* var. *crassifolium* P. C. Tam.

Shrubs, up to 2 m tall; young shoots densely coarsely gray-brown-strigose. Summer and winter leaves different; petiole 6–13 mm, densely strigose; leaf blade leathery, ovate to ovate-oblong or oblong-elliptic, 1.5–6(–8) × 1–2.5(–4) cm; base broadly cuneate; margin slightly revolute; apex acuminate and mucronate; abaxial surface densely coarsely yellow-brown-strigose; adaxial surface glabrescent. Inflorescence 4–10-flowered. Pedicel ca. 0.5 cm; calyx triangular-ovate, small, densely silky red-brown-strigose; corolla funnel-form, sometimes narrowly so, white, with purple flecks on lobes, ca. 2.2 × 1.5 cm; tube cylindrical, ca. 12 mm, outer surface sparsely pubescent; lobes spreading, long-ovate, ca. 1 cm; stamens 5, unequal, 1.2–1.5 cm, exerted, filaments flat, broadening at base, glabrous; ovary ovoid, densely coarsely silky red-brown-strigose; style 1–1.2 cm, densely yellowish villous at base. Capsule long-ovoid, ca. 7 × 4 mm, densely coarsely brown-strigose. Fl. Apr–May, fr. Aug–Nov.

- Hills; ca. 1400 m. Fujian, Hunan, Jiangxi.

The type specimen of *R. seniavinii* var. *crassifolium* is too poor to place with certainty.

**558. *Rhododendron qianyangense*** M. Y. He, Bull. Bot. Res., Harbin 5(4): 115. 1985.

黔阳杜鹃 qian yang du juan

Small shrubs; young shoots slender, densely coarsely yellowish silky-strigose. Petiole 2–3 mm, coarsely strigose; leaf blade papery, elliptic or elliptic-oblong, 1–3(–4) × 0.7–2.3 cm; base broadly cuneate, rarely subrounded; margin slightly revolute; apex acuminate and mucronate; both surfaces coarsely yellowish silky-strigose; adaxial surface later subglabrous. Inflorescence ca. 10-flowered. Pedicel 0.3–0.5 cm; calyx lobes obsolete; corolla funnel-campanulate, purplish, with purple flecks, 1–1.3 cm; tube cylindrical, ca. 7 × 3–3.5 mm, outer surface glandular-hairy, inner surface puberulent; lobes subobovate, ca. 0.6 × 0.45 cm; stamens 5, unequal, 1.2–1.5 cm, some longer than style, filaments flat, glabrous; ovary conical, ca. 3 mm, densely yellowish silky-strigose; style ca. 1.2 cm, coarsely strigose. Capsule conical, ca. 5 × 4 mm, coarsely strigose. Fl. May.

- Dense mountain forests, thickets; 1100–1200 m. W Hunan.

Based on the original description and a digital image of the type, this species appears closely allied to, and is probably synonymous with, *Rhododendron seniavinii*.

**559. *Rhododendron jinpingsense*** W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 85. 1982.

金平杜鹃 jin ping du juan

Shrubs, ca. 1 m tall; young shoots ferruginous-setose, coarsely strigose and glandular-hairy, later ± glabrous. Summer and winter leaves different. Petiole 2–3 mm, brown-setose and

coarsely strigose; leaf blade thickly leathery, elliptic or oblong-elliptic, 3–4.5(–6) × 1–2(–3) cm; base broadly cuneate or subrounded; margin revolute; apex acute or subobtusate; adaxial surface persistently coarsely strigose along midrib; lateral veins not reaching the margin. Inflorescence 3–5-flowered. Pedicel 0.8–1 cm, densely brown-setose and coarsely strigose; calyx lobes oblong, 3–4 × 1.5–2 mm, outer surface and margin glandular-hairy; corolla funnelform, red, with purple flecks on upper lobe, 1–1.2 cm; tube cylindrical, ca. 5 × 3 mm, outer surface glabrous, inner surface puberulent; lobes oblong, 0.5–0.6 × ca. 0.35 cm, apex obtuse; stamens 5, unequal, 1–1.5 cm, filaments puberulent below; ovary ovoid, ca. 3 mm, densely yellow-brown-setose and coarsely strigose; style 1.8–2 cm, longer than stamens, setose and coarsely strigose below, with scattered glandular hairs. Capsule ovoid, ca. 5 × 4 mm, setose-glandular-hairy. Fl. Apr, fr. Oct–Dec.

- Open mountain forests; 1600–1900 m. S Yunnan.

**560. *Rhododendron yaoshanicum*** W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 3(1): 3. 1983.

瑶山杜鹃 yao shan du juan

Small shrubs; young shoots densely glandular-setose. Summer and winter leaves different. Petiole 7–17 mm, densely brown-setose; leaf blade thin, papery, oblong or oblong-lanceolate, 10–18(–20) × 3–6(–8) cm; base subrounded; margin entire, sparsely short-setose; apex acuminate; abaxial surface shortly setose; adaxial surface glabrescent, lateral veins 15–17-paired, not reaching margin. Inflorescence 10–15-flowered. Pedicel to 1.2 cm, densely shortly brown-setose; calyx lobes triangular-ovate, outer surface and margin setose; corolla funnel-campanulate, red, 1.2–1.4 × ca. 1 cm; tube cylindrical, 6–7 × 3.5–4 mm, both surfaces glabrous; lobes spreading, elliptic or obovate, ca. 0.7 × 0.3–0.4 cm; apex obtuse; stamens 5, equal, ca. 2.2 cm, exerted, filaments flat, glabrous; ovary ovoid, ca. 2.5 mm, densely shortly setose; style ca. 2.4 cm, longer than the stamens, spreading shortly glandular-hairy. Capsule long-cylindrical or oblong-ovoid, 5–7 mm, densely short-setose. Fl. May, fr. Sep.

- Dense forests. C and E Guangxi.

**561. *Rhododendron flosculum*** W. P. Fang & G. Z. Li, Bull. Bot. Res., Harbin 4(1): 4. 1984.

子花杜鹃 zi hua du juan

Shrubs or small trees, 3–4 m tall; young shoots slender, sparsely strigose. Summer and winter leaves different. Petiole 3–5 mm, sparsely strigose; leaf blade papery, narrowly elliptic or elliptic-lanceolate, 6–7 × 1.5–2.5 cm; base broadly cuneate or subrounded; margin finely serrate; apex acute; both surfaces sparsely coarsely strigose, persistent only on midrib at maturity. Inflorescence usually 2–3(–5)-flowered. Pedicel 0.3–0.4 cm, coarsely brown strigose; calyx lobes sublanceolate, small, outer surface strigose; corolla funnelform, white to pale red, with pale red flecks, ca. 1 × 1.8 cm; tube cylindrical, ca. 5 × 3 mm; lobes open and flat, obovate, ca. 0.5 × 0.3 cm; stamens 5, subequal, ca. 1 cm, filaments glabrous; ovary conical, ca. 2 mm, densely strigose; style ca. 1.2 cm, coarsely strigose below. Fl. May–Jun.

- Thickets on slopes; ca. 1700 m. NE Guangxi.

**562. *Rhododendron sparsifolium*** W. P. Fang, Acta Phytotax. Sin. 21: 462. 1983.

川南杜鹃 chuan nan du juan

Shrubs, ca. 3 m tall; branchlets slender, dark purple, subglabrous. Petioles ca. 3 mm, glabrous; leaf blade papery or subleathery, oblong-elliptic or subelliptic, 2.5–3.5 × 0.8–1.2 cm; base cuneate or broadly cuneate; apex tapering or acuminate; abaxial surface sparsely setose; adaxial surface glabrous, lateral veins 5–7-paired, conspicuous only below. Inflorescence 5–7-flowered. Pedicel stout, 1–1.5 cm, densely long-setose; calyx cup-shaped, deeply lobed; lobes membranous, ovate, ca. 3 mm, outer surface long-setose, margin white-fimbriate; corolla funnelform, rose, upper 3 lobes with purple flecks, ca. 1.5 × 1 cm; tube cylindrical, 6–8 mm, glabrous; lobes broadly elliptic, ca. 0.6 cm, apex acuminate; stamens 5, shorter than corolla, filaments glabrous; ovary conical, ca. 3 mm, densely long-setose; style longer than stamens, long-setose below. Fl. May–Jun.

- Forests; 800–1000 m. S Sichuan.

**563. *Rhododendron saxatile*** B. Y. Ding & Y. Y. Fang, Bull. Bot. Res., Harbin 7(2): 29. 1987.

崖壁杜鹃 ya bi du juan

Small shrubs, ca. 1 m tall; young shoots densely coarsely red-brown-strigose and with crisped hairs. Petiole 3–5 mm, coarsely strigose and with crisped hairs; leaf blade leathery, elliptic, ovate-elliptic or ovate, 2–3(–5) × 0.7–1.5 cm; base broadly cuneate or round; margin revolute; apex acute and mucronate; both surfaces densely coarsely strigose and silky pubescent when young. Inflorescence 3–5-flowered. Pedicel ca. 0.5 cm, densely coarsely strigose and with crisped hairs; calyx shallowly lobed; lobes triangular, small, densely coarsely silky strigose, hairs crisped; corolla funnelform, white, yellowish when dried, upper lobes with rose flecks, 1.5–1.8 cm; tube cylindrical, widening above, 5–8 mm; lobes oblong, ca. 1 cm, the 2 lower lobes slightly spreading; apex acute; stamens 5, exerted, filaments flat, glabrous; ovary ovoid, ca. 3 mm, densely brown silky crisped-hairy; style ca. 2.7 cm, longer than stamens, glabrous or sparsely white-pubescent below. Capsule conical, ca. 5 mm, densely silky crisped-hairy. Fl. Apr–May, fr. Jul.

- Thickets on slopes, precipices, rock crevices; near sea level to 400 m. S Zhejiang.

**564. *Rhododendron jinxiuense*** W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 89. 1982.

金秀杜鹃 jin xiu du juan

Shrubs, ca. 3 m tall; young shoots densely long and shortly setose and glandular-hairy. Petiole 5–7 mm; leaf blade thickly leathery, ovate or long-ovate, rarely elliptic, 2.5–7(–10) × 1.5–5 cm; base rounded or near rounded; apex acuminate and acute; abaxial surface sparsely setose, glabrescent; abaxial surface setose only on midrib. Inflorescence 5- or 6-flowered. Pedicel 0.4–0.6 cm, densely setose and glandular-hairy; calyx lobes triangular-ovate, outer surface setose and glandular-hairy, margin ciliate; corolla funnelform, purple-red, 1.7–1.9 cm; tube cylin-

dric, 6–7 × ca. 4 mm, both surfaces glabrous; lobes slightly spreading, oblong-obovate or elliptic, ca. 1.2 × 0.4 cm; stamens 5, subequal, exserted, filaments flat, puberulent below; ovary ovoid, ca. 3 mm, densely setose and glandular-setose; style ca. 2.8 cm, longer than stamens, sparsely glandular-setose below. Fl. May–Jun.

- Forests, open forests; ca. 1000 m. E Guangxi.

**565. *Rhododendron spadiceum*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 87. 1982.

蔗黄杜鹃 zhe huang du juan

Shrubs; young shoots sparsely coarsely strigose and spreading pubescent. Petiole 6–7 mm. Leaf blade leathery, elliptic to lanceolate-elliptic, 2–5.5 × 1–2.2 cm; base tapering or narrowly cuneate; margin revolute; apex acute and mucronate; abaxial surface densely yellow-white felted and coarsely villous-strigose; adaxial surface glabrescent and lustrous. Inflorescence ca. 10-flowered. Pedicel 0.6–0.7 cm, coarsely strigose; calyx cup-shaped; lobes rounded; corolla narrowly funnelform, purplish, 2.8–3.4 × 1.8–2 cm; tube cylindric, 1.5–1.8 cm; lobes oblong-obovate, 1.3–1.6 × ca. 0.7 cm; stamens 5, unequal, 3–3.5 cm, shorter than the style, filaments puberulent; ovary ovoid, ca. 4 × 2.5 mm, coarsely strigose; style ca. 3.7 cm, sparsely coarsely strigose below.

- Forest margins, thickets. SW Fujian.

This species is almost certainly synonymous with, or a hybrid of, *Rhododendron rufulum* (see under *R. apricum* above).

**566. *Rhododendron flumineum*** W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 91. 1982.

河边杜鹃 he bian du juan

Shrubs, 1.5–3 m tall; young shoots coarsely strigose. Petiole 5–7(–10) mm; leaf blade long-ovate or elliptic long-ovate, 4–6(–14) × 1.5–3(–7.5) cm; base subrounded; margin revolute; apex shortly acute; abaxial surface sparsely coarsely ferruginous strigose; adaxial surface subglabrous. Inflorescence usually 4–7-flowered. Pedicel 0.5–0.8(–1.1) cm, densely coarsely ferruginous strigose; calyx lobes triangular-ovate, outer surface coarsely strigose; corolla funnelform, red or pink, with dark red flecks on upper lobes, 1.7–1.9 cm; tube cylindric, ca. 9 × 3–4 mm; lobes spreading, oblong-elliptic, 0.8–1 × 0.4–0.6 cm, glabrous; stamens 5, unequal, 1.7–2.4 cm, exserted, filaments puberulent at base; ovary ca. 3 mm, densely ferruginous strigose; style 2.4–2.9 cm, coarsely strigose for basal ca. 6 mm. Capsule ovoid, ca. 7 × 4 mm, coarsely strigose. Fl. Mar–Apr, fr. Jun–Jul.

- River banks in evergreen broad-leaved forests or in the open; 1200–2100 m. S Yunnan.

**567. *Rhododendron subcerinum*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 88. 1982.

蜡黄杜鹃 la huang du juan

Shrubs, 1–2 m tall; young shoots coarsely gray-brown strigose. Petiole 3–5 mm, sparsely coarsely strigose, glabres-

cent; leaf blade leathery, obovate or obovate-elliptic, rarely narrow-elliptic, 2.5–5.5 × 2–2.5 cm; base cuneate or narrowly cuneate; margin revolute; apex acute and mucronate; both surfaces sparsely coarsely strigose, hairs with swollen bases; lateral veins conspicuously impressed above, not reaching margin. Inflorescence ca. 6-flowered. Pedicel 0.6–1 cm, coarsely strigose; calyx cup-shaped; lobes triangular, coarsely strigose; corolla funnel-campanulate, red, ca. 2 cm; tube cylindric, ca. 9 × 4 mm; lobes spreading, spatulate, ca. 1.1 cm; stamens 5, unequal, exserted, filaments flat, puberulent; ovary cylindric, coarsely ferruginous strigose; style ca. 2.4 cm, coarsely strigose below. Capsule ellipsoid, ca. 10 mm, coarsely gray-brown strigose. Fl. Oct.

- S Guangdong.

**568. *Rhododendron loniceriflorum*** P. C. Tam, Bull. Bot. Res., Harbin 2(4): 81. 1982 [*“loniceraeflorum”*].

忍冬杜鹃 ren dong du juan

Shrubs; young shoots coarsely strigose. Petiole ca. 3 mm; leaf blade thinly leathery, lanceolate or long-lanceolate, usually 3–5.5 × 0.8–1.6 cm; base sometimes narrowly cuneate; margin slightly revolute; apex acuminate; abaxial surface thinly woolly and coarsely ferruginous-strigose; adaxial surface sparsely coarsely red-brown spreading villous-strigose, lateral veins ca. 6-paired, not reaching margin. Inflorescence 4–6-flowered. Pedicel 0.8–0.9 cm, densely coarsely red-brown-strigose; calyx lobes triangular, ca. 1.5 × 1 mm; corolla narrowly funnelform, reddish purple, ca. 3.5 cm; tube cylindric, 18–25 × 3–7 mm, outer surface glabrous, puberulent within; lobes elliptic-ovate, ca. 1.3 × 1 cm, apex obtuse; stamens 5, subequal, 3.3–3.5 cm, filaments puberulent below; ovary ovoid, ca. 3 × 2.5 mm, densely ferruginous-strigose; style to 4.2 cm, sparsely coarsely strigose below. Capsule ovoid, ca. 4 mm in diam., densely strigose. Fl. Apr.

- Open forests, mountain slopes. S Fujian.

**569. *Rhododendron tenue*** Ching ex W. P. Fang & M. Y. He, Bull. Bot. Res., Harbin 2(2): 87. 1982.

细瘦杜鹃 xi shou du juan

Shrubs, branchlets slender, densely coarsely strigose. Petiole 2–5(–10) mm; leaf blade thin, papery, elliptic to long-ovate, 2–5.5(–10) × 0.9–1.9(–4.8) cm; base broadly cuneate or subrounded; margin obscurely crenate; both surfaces sparsely coarsely strigose; lateral veins only conspicuous on abaxial surface, not reaching margin. Inflorescence usually 2- or 3-flowered. Pedicel 0.4–0.5 cm, densely brown strigose, hairs flat; calyx obsolete; corolla funnelform, ca. 0.8 cm; tube ca. 5 mm, inner surface puberulent; stamens 5, unequal, 3 longer up to 1.2 cm, 2 shorter slightly longer than corolla, filaments flat, pubescent; ovary ovoid, coarsely strigose; style ca. 1.2 cm, as long as some of stamens, coarsely shiny brown-strigose in the lower half. Capsule conical, 5–6 × ca. 4 mm, densely coarsely strigose. Fl. May–Jun, fr. Jul–Nov.

- Dense forests, mountain slopes; ca. 1500 m. NE Guangxi.

The original description was based on a type that originally possessed floral parts, which, however, no longer exist on the specimen.

3. *Rhododendron* sect. *Tsusiopsis* Sleumer, Bot. Jahrb. Syst. 74: 527. 1949.

假映山红组 *jia ying shan hong zu*

Shrubs, evergreen; branches with flat coarse appressed pubescence. Flowers and vegetative branches arising from the same terminal flower bud. Leaves in whorls of 2–3 at tips of branches.

One species: China (Taiwan) and Japan (including Ryukyu Islands).

DNA evidence suggests that *Rhododendron* sect. *Tsusiopsis* should be included within *R.* sect. *Tsutsusi*.

**570. *Rhododendron tashiroi*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 31: 64. 1887.

大武杜鹃 *da wu du juan*

Shrubs, 1.5–4(–6) m tall; young shoots sparsely brown pubescent, glabrescent. Petiole 3–6 mm. Leaf blade leathery, elliptic-obovate or rhombic-obovate to oblong-obovate or oblong-elliptic, 3.2–6.4 × 1–3.4 cm; base broadly cuneate; margin finely serrate; apex acute and mucronate; both surfaces with flat brown hairs; abaxial surface with hairs restricted to midrib, otherwise glabrous; adaxial surface glabrescent. Inflorescence

2–5-flowered. Pedicel 0.6–1.2 cm, densely shiny brown pubescent, hairs flat; calyx with 5 small teeth, brown pubescent; corolla funnel-campanulate, pale rose-purple, lobes with dark purple flecks, 2.5–3.5 × 2.5–3.5 cm; lobes spreading, oblong, shorter than the tube, glabrous, emarginate; stamens 10(–12), unequal, as long as the corolla, filaments glabrous; ovary ovoid, ca. 3 mm, densely shiny gray-brown appressed-pubescent; style becoming wider at apex, glabrous. Capsule narrowly ovate, 9–13 mm, densely brown-hairy, hairs flat.

Evergreen broad-leaved forest margins; ca. 1500 m. SW Taiwan [Japan (including Ryukyu Islands)].

**9. *Rhododendron* subg. *Therorhodium*** (Maximowicz) Drude in Engler & Prantl, Nat. Pflanzenfam. 4(1): 37. 1889 [“*Therorodion*”].

叶状苞亚属 *ye zhuang bao ya shu*

He Mingyou (何明友); David F. Chamberlain

*Rhododendron* sect. *Therorhodium* Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 16(9): 15, 47. 1870; *Rhodothamnus* Lindley & Paxton, Paxt. Fl. Gard. 1: 113. 1850, not Reichenbach (1827); *Therorhodium* (Maximowicz) Small.

Dwarf shrubs, deciduous; young shoots not scaly, sparsely glandular-hairy. Leaf blade thin, spatulate, spatulate-ob lanceolate or obovate; margin sometimes glandular-ciliate, not scaly. Inflorescence terminal, umbellate-racemose, 1–3-flowered. Pedicels with glandular hairs and leaflike bracteoles; calyx well-developed, 5-lobed; corolla rotate, tube shorter to slightly longer than lobes; outer surface glabrous or pubescent; stamens 10; ovary 5-locular, hairy; style equaling or shorter than the corolla, curved, hairy towards base.

Three species: China, Japan, Russia; North America (Alaska); one species in China.

Recent evidence from DNA sequencing suggests that this subgenus is basal to the remaining subgenera of *Rhododendron* and supports the maintenance of the genus *Therorhodium* proposed for the three species included within it. It should be noted that the presence of bracteoles on the pedicels is unique in the genus *Rhododendron*.

**571. *Rhododendron redowskianum*** Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9 [Prim. Fl. Amur.]: 189. 1859.

叶状苞杜鹃 *ye zhuang bao du juan*

*Therorhodium redowskianum* (Maximowicz) Hutchinson.

Low small shrubs, ca. 0.1 m tall; branching at base; old branches glabrous; young shoots glandular-hairy. Petiole short; leaf blade thin, spatulate-ob lanceolate, 5–15 × 3–6 mm, tapering toward base; margin glandular-ciliate; apex obtuse, with a glandular point; both surfaces glabrous at maturity; veins conspicuous on abaxial surface. Inflorescence 1–3-flowered. Pedi-

cel 0.5–1 cm, glandular-hairy, bearing leaflike hairy bracteoles; calyx deeply 5-lobed to base; lobes linear-oblong, ca. 5 × 2 mm, puberulent on outer surface, margin glandular-ciliate, apex obtuse; corolla rotate, purple-red, ca. 1.5 cm; tube 7–8 mm; outer surface glabrous; lobes 5, broadly oblong, ca. 0.6 × 0.5 cm, finely toothed; stamens 10, slightly shorter than corolla, pubescent below; ovary densely pubescent; style short, ca. 0.5 cm, curved, pubescent below. Capsule ovate, ca. 6 mm. Fl. Jul–Aug, fr. Sep–Oct.

Grasslands on alpine slopes, at foot of rocky cliffs; 2000–2600 m. SE Jilin [Russia (E Siberia)].

