
红景天属  hong jing tian shu

Chamaerhodiola Nakai; Clementsia Rose.

Herbs perennial, with some dimorphism. Rhizome a fleshy caudex, thick or slender, apex usually at or slightly above ground level. Caudex leaves present, usually reduced and scalelike, but sometimes with well-developed leaf blade. Flowering stems 1 to many, arising from axils of caudex leaves, annual, simple, leafy; dried remains of old stems sometimes persisting. Stem leaves usually alternate, occasionally verticillate or opposite, simple, fleshy. Inflorescences terminal, a simply or compoundly corymbiform or dichotomous cyme, less often 1-flowered, rarely a helicoid cyme or with additional axillary inflorescences arising from distal leaf axils, usually bracteate and pedunculate. Flowers usually bisexual, sometimes unisexual (when plants dioecious, or gynodioecious in Rhodiola alsia subsp. alsia and rarely in R. purpureoviridis subsp. phariensis). Calyx (3 or)4- or 5(or 6)-parted. Petals ± free, as many as sepals. Stamens in 2 series, usually 2 × as many as petals; antepetalous stamens adnate to basal part of petals; anthers mostly purple before anthesis, later turning yellow, basifixed or less often dorsifixed, 2-loculed. Nectar scales linear, oblong, suborbicular, or quadrangular. Ovary superior; carpels as many as petals. Follicles few to many seeded.

About 90 species: high altitudes and frigid zone of N hemisphere; 55 species (16 endemic) in China.

Sedum carnegiei Raymond-Hamet (Ann. Carnegie Mus. 8: 418–420. 1913), known only from Xizang (near Lhasa Shi), seems to be a possible member of Rhodiola, based on the turnip-shaped caudex, stem leaves with a basal spur, specialized flowering stem/lateral inflorescence, and deeply divided calyx and corolla. It differs from other members of that genus in its caudex leaves, which are fleshy and lack the persistent, scalelike base characteristic of other members of Rhodiola. The habit is like that of Rosularia. The exact generic placement needs further investigation.

Rhodiola multibracteata H. Chuang (Acta Bot. Yunnan. 19: 225. 1997) has been described from Yunnan. No material has been seen by the present authors, and it has not been possible to place it within the following key. In the protologue, it was compared with R. kirilowii, from which it was said to differ in having narrower leaves, many bracts, hardly unguiculate male flower petals, and erect follicle beaks. Its relationship to that species needs investigation.

1a. Caudex leaves (at least inner ones) with a distinct leaf blade, green.
2a. Caudex leaves conspicuously dimorphic: outer ones scalelike and membranous, inner ones with a distinct leaf blade.
3a. Caudex leaves prominently basally spurred; stem leaves 3.5–4 × 1–1.3 mm ........................................  4. R. handelii
3b. Caudex leaves basally spurseless; stem leaves 7–14 × 1.3–2.2 mm ................................................  5. R. smithii
2b. Caudex leaves monomorphic, all with a green leaf blade (sometimes deciduous but leaving a dark brown, persistent petiole).
4a. Caudex leaves sessile, without persistent, scalelike base; stem leaves with distinct basal spur Sedum carnegiei (see above)
4b. Caudex leaves distinctly petiolate, petiole to 10 mm, turning dark brown and persisting after leaf blade falls; stem leaves (when present) basally spurseless.
5a. Anthers dorsifixed; inflorescences helicoid-cymose ................................................................. 1. R. hobsonii
5b. Anthers basifixed; inflorescences corymbiform, sometimes reduced to a single flower or monochasium.
6a. Caudex leaf blade linear-oblanceolate to linear-rhomboid, ca. 1.5 mm wide; petals 2.5–3 mm  2. R. humilis
6b. Caudex leaf blade broadly spatulate to obovate, ca. 5 mm wide; petals 5–10 mm ..........  3. R. primuloides
1b. Caudex leaves without a distinct leaf blade, reduced, usually scalelike and not green.
7a. Inflorescences dense racemes, much longer than wide, with uniformly distributed flowers ......  8. R. semenovii
7b. Inflorescences cymose, sometimes reduced to a single flower, sometimes elongated but then clearly made up of cymes, usually in several discontinuous whors.
8a. Stem leaves 4–6, in a single whorl; plants less than 5 cm tall.
9a. Flowers bisexual; inflorescences 13–18-flowered, bracteate, pedicels 1.5–2.5 mm; stem leaf blade 2–6 × 2.5–4 cm .........................................................................................................................................  6. R. pratii
9b. Flowers unisexual; inflorescences 1–6-flowered, ebracteate, pedicels 10–13 mm; stem leaf blade 0.8–1.5 × 0.4–0.7 cm .....................................................................................................................................  7. R. stapfii
8b. Stem leaves many, alternate, aggregated or subverticillate, if verticillate then plants more than 10 cm tall, less often 6-verticillate.
10a. Old flowering stems persistent; follicles connate in basal 1/2.
11a. Petals ca. 10 mm, margin entire or sparsely fimbriate .........................................................  9. R. dumulosa
11b. Petals less than 6 mm, margin entire.
12a. Remnants of old shoots and stems few; flowers somewhat large.
13a. Part of caudex producing new stems not enlarged each year.
14a. Caudex 0.5–0.7 cm in diam.; flowering stems 1–5, straight; flowers usually 4-merous.
15a. Flowering stem leaves linear ................................................................. 24. R. angusta
15b. Flowering stem leaves lanceolate, oblong, obovate-rhombic, or broadly obovate 17. R. atuntsuensis
14b. Caudex 1–1.5 cm in diam.; flowering stems numerous, flabellate; flowers usually 5-merous, rarely 4-merous.
16a. Petals often red ................................................................. 21. R. fastigiata
16b. Petals often yellow, especially when sepals yellow or yellowish green.
17a. Stem leaves linear, linear-lanceolate, or lanceolate; stems usually shorter than petals ................................................................. 22. R. pamiroalaica
17b. Stem leaves elliptic; stems equaling or longer than petals .................. 23. R. litwinowii
13b. Part of caudex producing new stems somewhat enlarged each year.
18a. Flowering stems often straw-colored when dry; leaves smooth.
19a. Plants pubescent ........................................................................ 25. R. hisalensis
19b. Plants glabrous ........................................................................ 28. R. tangutica
18b. Flowering stems often purplish red or pink when dry; leaves finely and minutely hairy.
20a. Stem leaf margin entire; petals greenish yellow; pedicels densely papillate ...... 27. R. sherrifii
20b. Stem leaf margin entire or apically dentate; petals deep purple; pedicels smooth.
21a. Stem leaves 1.7–2.7 × 0.4–1 cm ......................................................... 25. R. hisalensis
21b. Stem leaves 0.8–1.5 × ca. 0.2 cm ........................................ 26. R. alsia
12b. Remnants of old shoots and stems numerous; flowers small.
22a. Nectar scales linear to broadly so ............................................ 10. R. gelida
22b. Nectar scales suboblong, quadrangular, or suborbicular.
23a. Stem leaves elliptic to ovate or ovate-lanceolate.
24a. Stem leaves shortly petiolate, margin irregularly crenulate .......... 16. R. subopposita
24b. Stem leaves sessile, margin entire (coarsely dentate in R. recticaulis).
25a. Flowering stems less than 4 cm ........................................ 17. R. atuntsuensis
25b. Flowering stems more than 12 cm.
26a. Petals yellow; stem leaf margin coarsely dentate; inflorescences corymbiform-capitate ........................................... 18. R. recticaulis
26b. Petals purplish red or red; stem leaf margin entire, sometimes mammillate; inflorescences cymose.
27a. Plants (6–)15–18 cm tall; stem leaves ovate or ovate-lanceolate; flowers often 4-merous ......................................................... 19. R. gannanica
27b. Plants to 30 cm tall; stem leaves linear to narrowly ovate; flowers usually 5-merous ......................................................... 20. R. tibetica
23b. Stem leaves lanceolate to ovate or oblong-oblanceolate, rarely linear to oblong-linear.
28a. Caudex base not or only slightly enlarged.
29a. Stems 1–2 mm in diam. ................................................................. 15. R. nobilis
29b. Stems 0.5–1 mm in diam.
30a. Flowering stems blackening when old; caudex leaves 6–8 mm wide; sepal apex subobtuse to obtuse ................................................................. 12. R. coccinea
30b. Flowering stems grayish when old; caudex leaves 3–5 mm wide; sepal apex acute 14. R. kashgaraica
28b. Caudex base enlarged.
31a. Caudex densely clustered; leaves linear-lanceolate .................................. 12. R. coccinea
31b. Caudex slightly or not clustered; leaves linear.
32a. Caudex less than 1 cm in diam., persistent old flowering stems and branches usually few; flowers often white, 5-merous; inflorescences ca. 1 cm in diam. ....... 13. R. kansuensis
32b. Caudex 1–3 cm in diam., persistent old flowering stems and branches usually more than 100; flowers often purplish red, 4-merous; inflorescences 1.2–1.5 cm in diam.
33a. Winter bud at apex of rhizome conspicuous; flowering stems 6–9 cm ...... 11. R. quadrifida
33b. Winter bud at apex of rhizome absent; flowering stems 1–5 cm ........... 12. R. coccinea
10b. Old flowering stems not persistent; follicles almost free.
34a. Flowers usually bisexual.
35a. Petals apex awnlike, with a mucro to 1 mm .................................................. 55. R. liciae
35b. Petals apex subobtuse.
36a. Flowering stems leafy at middle or near apex.
37a. Flowering stems with leaves in a whorl at middle of stem ........................................ 54. *R. sexifolia*
37b. Flowering stems with leaves grouped near apex of stem.
38a. Stem leaves 1–1.5 cm .............................................................................. 52. *R. chrysanthemifolia*
38b. Stem leaves 2–3 cm ........................................................................................... 53. *R. ovatisepala*
36b. Flowering stems leafy throughout.
39a. Stem leaves 2–4 cm, margin divided.
40a. Flowering stems ca. 15 cm; stem leaves elliptic to obovate, 5–7 cm; sepals ca. 3 mm  48. *R. sinuata*
40b. Flowering stems 8–11 cm; stem leaves oblong, 1–3 cm; sepals ca. 6 mm .......... 49. *R. tieghemii*
39b. Stem leaves 1–2.3(–3) cm, margin serrate or dentate.
41a. Stem leaf margin with 4 or 5 dentate lobes on each side ............................................. 50. *R. sacra*
41b. Stem leaf margin with 2 to several shallowly incised serrations on each side.
42a. Stem leaves 0.2–0.3 cm wide .......................................................................... 42. *R. wallichiana*
42b. Stem leaves 0.4–1.1 cm wide.
43a. Stem leaves elliptic, narrowly ovate, or ovate, margin irregularly and remotely serrate, base shallowly cordate; petal margin entire .............................. 38. *R. purpureoviridis*
43b. Stem leaves oblong to obovate-oblong, margin with 2 shallowly incised serrations on each side, base attenuate; petal margin apically erose ......................... 51. *R. alterna*
34b. Flowers usually unisexual (plants hermaphroditic or rarely gynodioecious in *R. purpureoviridis* subsp. *phariensis*).
44a. Carpel beak reflexed.
45a. Sepals 0.5–1 mm; petals spatulate to oblong-lanceolate ........................................ 46. *R. yunnanensis*
45b. Sepals ca. 3 mm; petals oblong or triangular-ovate ....................................................... 47. *R. forrestii*
44b. Carpel beak not reflexed.
46a. Carpels ovoid or narrowly so, basally narrowed.
47a. Flowers usually bisexual ...................................................................................... 42. *R. wallichiana*
47b. Flowers unsexual.
48a. Carpels ovoid, 9–11 mm; stem leaves obtrullate to linear-lanceolate ............... 45. *R. macrocarpa*
48b. Carpels narrowly ovoid, 7–9 mm; stem leaves narrowly elliptic to lanceolate or ob lanceolate, or widely ob lanceolate.
49a. Caudex 0.5–1 cm in diam.; stem leaves 0.6–0.8 cm wide; stamens equaling or slightly longer than petals ................................................................. 43. *R. stephanii*
49b. Caudex 1–2 cm in diam.; stem leaves 0.3–0.5 cm wide; stem ca. 1.5 × as long as petals ................................................................. 44. *R. pinnatifida*
46b. Carpels ovoid or narrowly so, basally thickened.
50a. Carpels oblong, ca. 2 × as long as wide.
51a. Plants glandular hairy; flowering stems more than 2 per caudex apex ...... 38. *R. purpureoviridis*
51b. Plants not glandular hairy; flowering stems 1 or 2 per caudex apex.
52a. Flowering stems transversely wrinkled, mostly leafless; caudex elongate and rhizomelike, covered by scree so that only inflorescences are visible above ground .......... 41. *R. atsaensis*
52b. Flowering stems smooth or longitudinally ridged, leafy; caudex often erect or almost so, not deeply buried.
53a. Caudex subprostrate, ascending, or suberect; stem leaves abaxially ± glaucescent; petals of male flowers 5–6 × 1.2–2 mm, those of female flowers 3–4 × 0.9–1.2 mm . 39. *R. discolor*
53b. Caudex erect; stem leaves abaxially not glaucescent; petals of male flowers 2.8–4 × 1.2–1.6 mm, those of female flowers 1.5–3 × 0.5–0.7 mm ............... 40. *R. bupleuroides*
50b. Carpels narrowly oblong, over 3 × as long as wide.
54a. Stem leaves linear to oblanceolate, margin entire or remotely dentate.
55a. Caudex prostrate, 0.2–0.4 cm in diam.; flowering stems 2–12 cm; sepals 3–4.5 mm, apex obtuse ...................................................................................... 36. *R. cretinii*
55b. Caudex erect, 1.5–2.5 cm in diam.; flowering stems 15–60 cm; sepals 1.5–3 mm, apex acute to acuminate ...................................................................................... 37. *R. kirilowii*
54b. Stem leaves oblong, elliptic, lanceolate, rhombic-ovate, ovate-triangular, or orbicular-cordate, margin crenulate throughout, apically dentate, or sometimes subentire.

56a. Stem leaves rhombic-ovate to elliptic .............................................................. 29. **R. calliantha**

56b. Stem leaves not as above.

57a. Flowering stems not leafy apically; stem leaves short, broadest near base.

58a. Leaf base cordate, amplexicaul, apex acute; sepals linear, ca. 7 × 1.3 mm; stamens reddish .............................................................. 34. **R. heterodonta**

58b. Leaf base truncate to subcordate, apex shortly acuminate; sepals triangular-linear, ca. 1.1 × 1.3 mm; stamens yellow .............................................................. 35. **R. junggarica**

57b. Flowering stems leafy apically; stem leaves long, usually broadest in distal 1/2.

59a. Flowering stems apically papillate; stem leaf margin serrate ............................ 33. **R. serrata**

59b. Flowering stems smooth; stem leaf margin subentire, apically sometimes dentate.

60a. Persistent old flowering stems and branches black when dry .......................... 32. **R. crenulata**

60b. Persistent old flowering stems and branches not black when dry.

61a. Plants 20–30 cm tall; stem leaves elliptic-lanceolate, oblong, or broadly oblong-ovate; sepals ca. 1/3 as long as petals ...................................................... 30. **R. rosea**

61b. Plants 10–15 cm tall; stem leaves oblong-spatulate, oblong-lanceolate, or oblong-rhombic; sepals ca. 1/2 as long as petals ........................................ 31. **R. sachalinensis**

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**背药红景天**  **bei yao hong jing tian**


Caudex erect, robust. Caudex leaves leaflike, long petiolate; leaf blade oblong-lanceolate to oblong, to 1.8 × 0.3 cm, deciduous, apex subacute. Inflor. cymose, 3–10-flowered. Flowers unequally 5-merous. Sepals narrowly lanceolate, ovate-triangular, or orbicular-cordate, margin crenulate throughout, apically dentate, or sometimes subentire. Stamens 10; antepetalous ones ca. 4 mm; anthers dorsifixed. Nectar scales ovate-oblong, ca. 0.5–1 mm, 1-winged. Fl. Oct.

Rocks on slopes or in valleys; 2500–4400 m. Qinghai, Xizang [Nepal, Sikkim].


**矮生红景天**  **ai sheng hong jing tian**


Main root thick. Caudex simple, erect, short. Caudex leaves leaflike; petiole ca. 9 mm, persistent; leaf blade oblong-lanceolate to -rhomboid, to 6 × 1.5 mm, deciduous, apex subacute. Inflor. cymose, 1- or 2-flowered. Flowers unequally 5-merous. Sepals ovate-oblong, ca. 3 × 1.5 mm, apex obtuse to acute. Petals ovate, 2.5–3 mm, apex attenuate.

Stem leaves oblong, elliptic, lanceolate, rhombic-ovate, ovate-triangular, or orbicular-cordate, margin crenulate throughout, apically dentate, or sometimes subentire.

58a. Leaf base cordate, amplexicaul, apex acute; sepals linear, ca. 7 × 1.3 mm; stamens reddish .............................................................. 34. **R. heterodonta**

58b. Leaf base truncate to subcordate, apex shortly acuminate; sepals triangular-linear, ca. 1.1 × 1.3 mm; stamens yellow .............................................................. 35. **R. junggarica**

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**报春红景天**  **bao chun hong jing tian**

Plants 3–5 cm tall. Caudex branched, thick, ca. 5 mm in diam., densely leafy. Caudex leaves leaflike; leaf blade oblong-lanceolate, obovate, or broadly ovate, slightly contracted near middle, to 10 × 2–5 mm, finely mammillate, base usually widened, margin entire, apex obtuse. Inflor. cymose, 1- or 2-flowered; bracts linear, ca. 3 × 1 mm. Flowers unequally 5-merous. Sepals narrowly lanceolate, ovate-lanceolate, or broadly oblong, 2.5–5 × 0.7–1.5 mm, margin ciliolate, apex obtuse. Petals white, ovate, 5–10 × 2.5–5 mm, base narrowed, margin entire or apically erose, apex mucronate. Stamens 10; antepetalous ones equaling or slightly shorter than petals; antepetalous ones inserted ca. 1/3 from petal base. Nectar scales oblong, apex obtuse. Carpels erect. Styles short. Fl. and fr. Sep.

Alpine meadows; 3900–4500 m. Qinghai, Xizang [Nepal, Sikkim].

Plants collected in S Qinghai, apparently belonging to this species, formed dense mats to 10 cm wide.

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**3a. Rhodiola primuloides** subsp. **primuloides**
**Sedum primuloides** Franchet, J. Bot. (Morot) 10: 287. 1896; *Rhodiola pleurogynantha* (Handel-Mazzetti) S. H. Fu; *S. pleurogynanthum* Handel-Mazzetti; *Sedum primuloides* var. *pleurogynanthum* (Handel-Mazzetti) Fröderström.

Sepals narrowly lanceolate to ovate-lanceolate. Petals 5–10 × 2.5–5 mm, margin apically erose.

- Rocks on slopes; 2500–4400 m. SE Qinghai, SW Sichuan, W Yunnan.


**Gong bu hong jing tian**


- Rocks in valleys; ca. 2500 m. S Xizang.


**Xiao zhu hong jing tian**

Plants to 1.5 cm tall. Cauldew branched, 5–10 × 5–10 mm. Cauldew leaves leaflike and scalelike; petiole brown, 4–5.5 × 1.5–1.7 mm at base, persistent, base spurred; leaf blade oblong, 1.5–3.5(–4) × 0.8–1.7 mm, apex obtuse. Flowering stem solitary, ascending, 0.9–1.5 cm, glabrous. Stem leaves few, alternate, sessile, spatulate-oblanccate, 3.5–4 × 1–1.3 mm, base attenuate, margin entire, apex obtuse. Inflorescences (–3)-flowered; bracts few, ca. 1.5 × 0.5 mm. Flowers bisexual, 4- or 5-merous, 3–3.5 mm in diam. Sepals ovate-oblong, 3.2–3.7 mm, base conspicuously spurred, spur ca. 0.8 mm, apex rounded. Petals white, triangular-ovate to oblong-ovate, 2.5–2.7 × 1.4–1.7 mm, margin entire, apex mucronate. Stamens 8 or 10, slightly shorter than petals; antepetalous ones inserted ca. 0.2 mm from petal base; filament 2.2–2.5 mm; anthers reddish, globose. Nectar scales oblong, 1–1.2 × 0.5–0.7 mm, apex irregularly erose. Carpels erect, 2.2–2.5 mm, 8–10-ovuled. Styles less than 0.5 mm. Follicles not seen. Fl. May.

- Sichuan.

This species is known to the present authors only from the type collection.


**Yi lin hong jing tian**


Plants to 8 cm tall. Cauldew erect, thick, to 2 cm in diam.; old shoots and stems decumbent. Cauldew leaves to black-brown and scalelike, subulate, narrowly triangular, or broadly linear. Flowering stem simple, erect, to 8 cm. Stem leaves 4, verticillate; pseudopetiole 1–3 cm; leaf blade oblong-elliptic, ovate, broadly ovate, or reniform-orbicular, (1.5–)2–6 × 2.5–4 cm, glabrous or minutely few mammillate, base abruptly narrowed to long attenuate, margin entire, apex rounded or obtuse. Inflorescences simple or few branched, corymbiform, 1–4 cm in diam., 13–18-flowered; peduncle 15–25 mm; bracts sessile or shortly petiolate, linear-lanceolate, broadly elliptic, ovate, or suborbicular, (4–)5–15 × 3–8 mm. Flowers bisexual, unequally 5-merous; pedicel 1.5–2.5 mm. Sepals narrowly triangular-ovate to suboblong-triangular, 2.5–3.5(–4) mm, base ca. 1.5 mm, apex acute to acuminate, tip obtuse. Petals white, pink, or red, oblong-ovate, ovate, or orbicular, 4–6(–7) × 2–3 mm, margin erose or apically minutely dentate. Stamens 10, shorter than petals. Nectar scales obpatulate-oblong, 0.6–1 mm. Carpels lanceolate to ovoid. Styles slender. Fl. Jul, fr. Sep.

Rocks in broad-leaved forests in valleys, rock crevices at bases of mountains; 2200–4300 m. Xizang [NE India, Nepal, Sikkim].


**Tuo hua hong jing tian**

Caudex leaves scalelike, triangular, 7–10 × 2.4–4 mm, base broadened, apex acute. Flowering stems simple, erect, 1.4–3.5 cm. Middle stem leaves 5- or 6-verticilate; pseudopetiole 2–3 mm; leaf blade ovate to oval-oblong, 8–15 × 4–7 mm, base abruptly narrowed, margin entire, apex subacute. Inflorescences umbelliform cymes, 1–6-flowered; peduncle ca. 5 mm, shorter than pedicels; bracts absent. Flowers unisexual, unequally 5-merous; pedicel 1–1.3 cm. Sepals linear-trianguar to narrowly triangular, 2.5–3.5 mm, base connate, apex obtuse. Petals red, obovate to oblong, 2.5–3.5 × 1.4–1.7 mm, margin ± erose. Carpels ovoid-lanceolate, base connate for ca. 1 mm. Styles ca. 0.5 mm. Seeds brown, oblong, 0.5–0.8 mm. Fl. Aug–Sep.

Grassland slopes; 2900–5000 m. S Xizang [Bhutan, NE India].


柱花红景天  zhu hua hong jing tian


Caudex branched, short. Caudex leaves scalelike, triangular. Flowering stems numerous, simple, erect, 35–60 cm × 5–6 mm, densely leafy. Stem leaves 3.5–7 × 0.2–0.3 cm, margin entire or sparsely serrate, apex acuminate. Inflorescences cylindric racemes. Flowers shortly pedicellate or sessile, bisexual, unequally 4- or 5-merous. Sepals linear, ca. 3 mm, apex acuminate. Petals white or red, lanceolate, ca. 7 × 2 mm. Stamens 8 or 10, equaling petals; filaments white; anthers red. Nectar scales subquadrangular. Inflorescences ovate-oblong, 8–15 × 4–7 mm, base abruptly narrowed, verticillate; pseudopetiole 2–3 mm; leaf blade ovate to obovate, 1.4–3.5 cm. Middle stem leaves 5- or 6-merous; pedicel 1–1.3 cm. Sepals linear-lanceolate, base connate for 1–1.5 mm. Styles ca. 0.5 mm. Seeds brown, ovoid, 0.5–0.8 mm. Fl. Aug–Sep.

Grassland slopes; 2900–5000 m. S Xizang [Bhutan, NE India].


小丛红景天  xiao cong hong jing tian


Caudex branched, robust; persistent old flowering stems present as remnants. Flowering stems aggregated apically on caudex, simple, erect or curved, 5–28 cm. Stem leaves alternate, sessile, linear to broadly so, 7–10 × 1–2 mm, margin entire, apex subacute. Inflorescences cymose, 4–7-flowered. Flowers unequally 5-merous. Sepals linear-lanceolate, ca. 4 × 0.7–0.9 mm, base broad, apex acuminate. Petals erect, white or red, lanceolate-oblong, 8–11 × 2.3–2.8 mm, margin entire or sparsely fimbriate, apex acuminate and long mucronate. Stamens 10, shorter than petals; antepetalous ones ca. 7 mm; antepetalous ones ca. 3 mm, inserted ca. 3 mm from petal base. Nectar scales transversely oblong, apex emarginate. Carpels erect, ovoid-oblong, 6–9 mm, base connate for 1–1.5 mm. Seeds oblong, finely mammillate, narrowly winged. Fl. Jun–Jul, fr. Aug. Rocks on slopes; 1600–4100 m. Gansu, Hebei, Hubei, Jilin, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Yunnan [Bhutan, Myanmar].


长鳞红景天  chang lin hong jing tian

*Chamaerhodiola gelida* (Schrenk) Nakai; *Rhodiola fastigiata* (J. D. Hooker & Thomson) S. H. Fu var. *gelida* (Schrenk) H. Jacobsen; *Sedum dubium* Paulsen; *S. gelidum* (Schrenk) Karelin & Kirilov.

Main root robust. Caudex many branched, 2–7 cm × 5–8 mm; persistent old flowering stems present, blackening. Caudex leaves scalelike. Flowering stems curved, straw-colored when young, 3–5(–10) cm × ca. 1 mm. Stem leaves alternate, ovate-oblong, 8–10 × 2–5 mm, margin serrulate or subentire. Inflorescences compact, 1–1.5 × 1–2 cm, many flowered. Flowers unisexual, unequally 4- or 5-merous. Sepals linear-lanceolate to oblong, ca. 3 mm, apex subacute. Petals yellow, oblong to oblanceolate-oblong, ca. 4 × 1.7 mm, apex obtuse and mucronate. Stamens 8 (or 10), 4–5 mm; antepetalous ones inserted ca. 1 mm from petal base. Nectar scales linear to narrowly oblong, 1.2–1.8 × 0.4–0.6 mm, apically irregularly few toothed. Carpels oblong, 5–6 mm, base connate for 1.5–2 mm. Styles ± incurved, short. Follicles red. Seeds brown, ovoid, winged at both ends. Fl. Jun–Jul, fr. Aug.

Grassland slopes, rocks; 2800–4200 m. Xinjiang [Mongolia, Russia, Tajikistan].


四裂红景天  si lie hong jing tian

*Sedum quadrifidum* Pallas, Reise Russ. Reich. 3: 730. 1776; *Chamaerhodiola quadrifida* (Pallas) Nakai.

Caudex 1–3 cm; persistent old flowering stems present. Winter bud at apex of rhizome conspicuous. Caudex leaves brown, scalelike, triangular, ca. 4 × 4 mm. Flowering stems ± erect, 6–9 cm × 0.5–1 mm. Stem leaves alternate, erect, sessile, linear, suberete, 5–8(–12) × ca. 1 mm, margin entire, apex acute. Inflorescences corymbiform, ca. 1 cm in diam., few flowered. Flowers unisexual, usually 4-merous, equaling or longer than pedicel. Sepals green, linear-lanceolate, ca. 3 mm, apex obtuse. Petals yellow, sometimes reddish at apex,
oblong-ovate, ca. 4 mm, apex obtuse. Stamens 8, equaling or slightly longer than petals. Follicles erect, red when mature, lanceolate, ca. 5 mm, apical beak slightly reflexed or erect. Seeds brown, oblong, ca. 2 mm, winged. Fl. May–Jun.

Alpine regions, stony slopes, rocks; 2300–3700 m. Xinjiang [Kazakstan, Mongolia, Russia].


Main root 10–30 cm or longer. Caudex thick; persistent old flowering stems present. Winter bud at apex of rhizome inconspicuous. Caudex leaves brown, scalelike, broad to linear-lanceolate, 1.5–2(–4) mm × 0.5–1 mm; old flowering stems present. Winter bud at apex of flowering stems. Cupula brown, scalelike, triangular, 3–5 mm × 0.5–1 mm. Stem leaves alternate, sessile, linear-lanceolate to oblong. Inflorescences corymbiform, compact, 0.8–1 cm in diam., few flowered. Flowers unisexual, (4 or)5-merous. Sepals lanceolate to broadly oblong, 1.5–2(–4) mm. Fl. Jul–Sep.

Rock crevices on slopes; 2200–5300 m. W Sichuan, Xizang, NW Yunnan [Sikkim].


Rocks on mountain slopes; 2300–3200 m. Gansu (Lanzhou Shi).


Roots gray, slender. Caudex many branched, 5–10 mm in diam.; persistent old flowering stems present. Caudex leaves scalelike, triangular, 3–5 mm wide. Flowering stems numerous, ascending, grayish when old, 3–5(–10) cm × 0.5–1 mm. Stem leaves alternate, subhorizontally spreading, oblong to linear-lanceolate, 3–10 × 1–2 mm, margin entire, apex obtuse. Inflorescences corymbiform or subcapitate, 4–6 × 5–10 mm, few flowered. Flowers unisexual, unequally 4- or 5-merous; pedicel short, slightly elongated in fruit. Sepals linear, 2–3 mm, apex acute. Petals golden yellow, oblong-lanceolate, apically slightly narrowed, 3–4 mm, apex obtuse. Stamens 8 or 10; antepetalous ones ca. 4.5 mm; antepetalous ones ca. 2.2 mm, inserted ca. 2 mm from petal base; anthers ca. 0.8–0.9 mm. Carpels erect. Seeds oblong. Fl. Jun–Jul.

**Franchet** Nakai;  
**Addit. 1: 120. 1965.**

**Edinburgh** 13: 71. 1921;  
**Sedum atuntsuense**  
**Chamaerhodiola horrida** (Praeger) Nakai;  
**C. nobilis** (Franchet) Nakai;  
**S. horridum** Praeger.

Main root long. Caudex erect, more than 20 cm; persistent old flowering stems present, brown with age. Caudex leaves scalelike. Flowering stems numerous, erect, red-brown when young, 3–4 cm × 1–2 mm, subscabrous, densely leafy. Stem leaves sessile, oblong-lanceolate to -oblanceolate, 7–11 × 1.7–2 mm, adaxially subscabrous, finely mammillate when dry, apex obtuse. Inflorescences 1–4-flowered; bracts leaflike, small. Flowers terminal, shortly pedicellate, unisexual, unequally 4- or 5-merous. Sepals lanceolate-triangular, 2.3–2.5 × 1.3–1.5 mm, apex obtuse. Petals red, suboblong, 4–6 × 1.5–1.7 mm, base slightly narrowed, apex obtuse. Stamens 8–10, ca. 4 mm; antepetalous ones inserted ca. 1 mm from petal base. Nectar scales suborbicular, apex rounded to emarginate. Styles slightly recurved, short. Follicles erect, 1–1.4 cm, base connate for ca. 2 mm. Fl. Jul. Fr. Aug.–Oct.

Thickets, grassy slopes; 3700–4500 m. NW Yunnan [Myanmar].


**Praeger**;  


**Forests**, glacial valleys, granitic rocks, gravelly or limestone areas; 3100–5000 m. W Sichuan (Dawu Xian, Kangding Xian), Xizang, NW Yunnan [Myanmar].

**Rhodiola atuntsuensis** shows a wide range of variation, especially in leaf shape and flower number. Several allied species are better regarded as extreme variants of this species. The species is functionally dioecious, but the male flowers have large pistils and appear bisexual.


**Borissova** in Komarov, Fl. URSS 9: 478. 1939.

Main root thick, woody. Caudex branched, erect, 3–6 cm in diam., woody, apically leafy; branches ca. 1.5 cm in diam. Caudex leaves brown, scalelike, triangular, ca. 1 × 1 mm, apex obtuse. Flowering stems numerous, erect, 8–15 cm × 1.5–2 mm, slightly sulcate; persistent old flowering stems present. Stem leaves alternate, erect or divergent, sessile, yellowish green, elliptic to elliptic-oblong, 8–10 × 2–3 mm, margin coarsely dentate, apex subacute. Inflorescences corymbiform-capitate, compact, 1.5–2 cm in diam., many flowered, bracteate. Flowers shortly pedicellate, unisexual, unequally 4-merous, small. Sepals red, elliptic, ca. 2 mm, apex obtuse. Petals yellow, oblong-elliptic, ca. 4 mm, apex obtuse. Stamens 8, longer than petals; filaments yellow; anthers globose. Nectar scales subquadrangular, apex entire. Carpels suberect to suberect, 1.5–2 cm, many flowered. Fl. and fr. Aug.

Rock crevices on mountain slopes; 3800–4600 m. Xinjiang (Tian Shan) [Kazakhstan; SW Asia (Iran)].

Typical *Rhodiola recticaulis* has flowering stems to 5 mm thick and globose inflorescences. One of the present authors (Ohba) believes that the Chinese plants described here need further investigation, as they may prove to be a different species.


甘南红景天 gan nan hong jing tian

Plants (6–)15–18 cm tall, glabrous. Caudex thick. Caudex leaves scalelike. Flowering stems erect, 14–16 cm × 1–2 mm, smooth, leafy. Stem leaves alternate, sessile, ovate-lanceolate to ovate, 7–9 × 2.5–3.5 mm, base narrowed, margin mammillate, apex very acute. Inflorescences terminal, cymose, 0.8–1.2 × 1–1.5 cm, 10–15-flowered; bracts ca. 4 mm. Flowers shortly pedicellate, unisexual, female ones (4 or) 5-merous. Sepals triangular-linear, ca. 2 × 1–1.2 mm, apex obtuse. Petals free, purple, oblong, ca. 2.5 × 1–1.2 mm, apex obtuse. Nectar scales subquadrangular, ca. 0.7 × 0.7 mm, apex emarginate to truncate. Carpels usually 4, erect, ovoid-oblong, 3–3.5 mm, apex beaked at maturity. Seeds 10 or 11, narrowly oblong, smooth. Fl. Jun, fr. Jul.

- Rocky slopes, alpine mountain summits; 3500–3900 m. S Gansu (Lintian Xian, Xiahe Xian).


西藏红景天 xi zang hong jing tian

*Sedum tibeticum* J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 96. 1858; *Chamaerhodiola stracheyi* (J. D. Hooker & Thomson) Nakai; *S. quadrifidum* Pallas var. *tibeticum* (J. D. Hooker & Thomson) Fröderström; *S. stracheyi* J. D. Hooker & Thomson; *S. tibeticum* var. *stracheyi* (J. D. Hooker & Thomson) C. B. Clarke. Caudex short to long; persistent old flowering stems few. Caudex leaves scalelike, triangular. Flowering stems 4–10 cm; persistent old flowering stems few or absent. Caudex leaves scalelike, triangular. Flowering stems 4–10, arising from caudex apex, 8–20 cm × 1.2–2 mm, densely leafy. Stem leaves alternate, linear-oblong, linear-lanceolate, elliptic, or oblanceolate, 8–12 × 1–4 mm, margin entire but finely mammillate, apex obtuse. Inflorescences corymbiform, dense, ca. 1 × 2 cm. Flowers unisexual, male ones unequally 5-merous. Sepals linear to narrowly triangular, ca. 3 mm, apex obtuse. Petals red, oblong-lanceolate, ca. 5 × 1.3 mm, apex obtuse. Stamina 10, to 5 mm; antepetalous ones inserted ca. 1 mm from petal base. Nectar scales transversely oblong, apex emarginate. Carpels erect, lanceolate. Styles long. Follicles 7–8 mm, apex ± recurved. Fl. Jun–Aug, fr. Sep.

Rocky slopes; 3500–5400 m. Sichuan, Xizang, Yunnan [Bhutan, India, Kashmir, Nepal, Sikkim].


帕米尔红景天 pa mi hong jing tian

*Sedum pamiroalaicum* (Borissova) C.-A. Jansson.

Roots robust, thick. Caudex robust, woody, apically leafy; persistent old flowering stems present. Caudex leaves scalelike, triangular, 4–8 × 1.5–6 mm. Flowering stems numerous, ascending, 10–30 cm × ca. 2 mm, basally sulcate. Stem leaves alternate, remote, sessile, linear, linear-lanceolate, or lanceolate, 7–15 × 1.5–2 mm, base broad, margin entire, apex subacute. Inflorescences corymbiform-paniculate, compact, 0.5–1 × 1–2 cm in diam., few to many flowered. Flowers unisexual, unequally 5(or 6)-merous in male plants, equaling pedicels. Sepals greenish yellow, lanceolate to linear, 2–3 mm, apex subobtuse. Petals yellowish green, lanceolate to linear, 4–4.5 mm, apex subobtuse. Stamina 10 or 12, yellow, shorter than petals. Nectar scales cuneate-quadrangular, apex truncate to ± recurved, apical beak filiform. Seeds brown, lanceolate. Fl. Jun–Jul, fr. Jun–Aug.

Valley slopes, rock crevices in ravines; 2400–2800 m. W Xinjiang (Wensu Xian) [Tajikistan].


黄萼红景天 huang e hong jing tian

Main root thick, ca. 30 cm, apically to 2 cm in diam. Caudex many branched, robust, 3–4 cm.; persistent old flowering stems few. Caudex leaves scalelike, ovate-triangular, 1–1.5 × 1–1.5 cm. Flowering stems
numerous, erect, 10–17 cm, densely leafy. Stem leaves alternate, greenish, usually yellowish green when dry, 10–15 × 3–5 mm, base cuneate, apical margin obtusely dentate, apex obtuse. Inflorescences compact, 1–1.5 × 2–2.5 cm, many flowered, bracteate. Flowers unisexual, unequally 4- to 5-merous; equaling or slightly longer than pedicel. Sepals yellow, lanceolate, ca. 3 mm, apex obtuse. Petals yellow, lanceolate, ca. 4 mm, apex obtuse. Stamens 8 or 10, ca. 4 mm, equaling or longer than petals; filaments and anthers yellow. Nectar scales quadrangular, apex truncate. Follicles to 8 mm, tapered and apically filiform, apical beak 1–1.5 mm. Seeds brown, oblong-lanceolate, 1.5–2 mm. Fl. Jun–Aug, fr. Jul–Sep.

Below 3200 m. Xinjiang [Mongolia, Uzbekistan].


**長白红景天** chang bai hong jing tian

*Rhodiola komarovii* Borisssova; *R. ramosa* Nakai; *Sedum fenzeli* Fröderström; *S. komarovii* (Borisssova) Chu; *S. ohbae* J. P. Kozhevnok.

Main root often simple. Caudex erect, slender, 5–7 mm in diam.; persistent old flowering branches few, present as remnants. Caudex leaves scalelike, triangular. Flowering stems erect, straw-colored, 3.5–10 cm, densely leafy. Stem leaves alternate, linear, 10–20 × 1–2 mm, base slightly narrowed, margin entire or apically 1- or 2-dentate, apex obtuse. Inflorescences corymbiform, few to many flowered. Flowers unisexual, male ones unequally 4-merous. Sepals linear, 2–4 mm, apex obtuse. Petals yellow, oblong-lanceolate, 4–5 × ca. 1 mm, apex obtuse. Stamens 8, slightly shorter than or equaling petals; antepetalous ones inserted ca. 1.8 mm from petal base. Nectar scales subquadrangular, 0.4–0.5 × 0.5–0.6 mm, apex truncate to emarginate. Carpels erect, lanceolate, ca. 6 mm, apex acuminate. Styles ca. 1.5 mm. Stigma capititate. Follicles erect, purplish red, 7–8 mm, apical beak ± recurved. Seeds lanceolate, winged at both ends. Fl. Jul–Aug, fr. Aug–Sep.

Alpine grasslands, rocks on slopes; 1700–2600 m. Heilongjiang [Korea, Russia].


**喜马红景天** xi ma hong jing tian

*C. himalense* var. *taohoensis* (S. H. Fu) J. P. Kozhevnok.

Flowering stems 25–50 cm. Stem leaves lanceolate, oblanceolate, oblong-oblanceolate, or obovate, 1.7–2.7 × 0.4–1 cm. Carpels erect, ca. 9 mm.

Forests, scrub, slopes; 3700–4200 m. NW Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].

25a. **Rhodiola himalensis** subsp. *himalensis*


**洮河红景天** tao he hong jing tian


Flowering stems 10–13 cm. Stem leaves narrowly lanceolate, 0.7–1 × ca. 0.2 cm. Carpels suberect, ca. 2 mm.

- Shaded slopes; 2600–3800 m. S Gansu (Jonê Xian, Lintan Xian), Qinghai.


**西川红景天** xi chuan hong jing tian

Caudex erect, long; persistent old flowering stems present. Flowering stems erect, pale red when dry, 15–20 cm, or 10–15 cm in female plants. Stem leaves alternate; leaf blade lanceolate to oblanceolate or oblong, 8–15 × ca. 2 mm, sparsely papillate, margin entire or usually apically few dentate, apex acute, finely papillate in female plants. Inflorescences cymose, 1.5–2 × 1.5–2 cm, slightly smaller in female plants. Flowers shortly pedicellate, bisexual or female (plants hermaphroditic or gynodioecious), unequally 5-merous, female ones 4-merous. Sepals reddish when dry, triangular-lanceolate, 2.4–3.5 mm, apex obtuse. Petals reddish when dry, oblong, 5–6 mm, apex obtuse, or

- **Rhododendron** forests, rocky slopes; 3400–4800 m. NW Sichuan, Xizang, Yunnan.

1a. Flowers bisexual or female (plants gynodioecious), 7–10 mm wide; flowering stems 2–6, to 20 cm ................. 26a. subsp. alsia

1b. Flowers always bisexual (plants hermaphroditic), 5–7 mm wide; flowering stems many, fastigate, 20–25 cm ........... 26b. subsp. kawaguchii

26a. **Rhodiola alsia** subsp. alsia

西川红景天(原变种) xi chuan hong jing tian (yuán biàn zhǒng)

*Sedum alsium* Fröderström, Acta Horti Gothob. 15: 8. 1942; *Rhodiola staminea* (Paulsen) S. H. Fu; *Sedum doratoacarpum* Fröderström; *S. stamineum* Paulsen. Flowering stems 2–6, to 20 cm. Flowers bisexual or female (plants gynodioecious), 7–10 mm wide. Sepals 2.2–2.6 mm, or 2.6–3.5 mm in female flowers.

- **Rhododendron** forests, rocky slopes; 3400–4800 m. NW Sichuan, Xizang, Yunnan.


河口红景天 he kuo hong jing tian

Flowering stems many, fastigate, 20–25 cm. Flowers always bisexual (plants hermaphroditic), 5–7 mm wide. Sepals 2.4–2.6 mm.

- Rocky slopes; 4400–4600 m. Xizang.


小林红景天 xiao lin hong jing tian

*Sedum sherriffii* (H. Ohba) J. P. Kozhevnikov.

Caudex prostrate, apically ascending, terete, 1–2.5 cm in diam. Caudex leaves somewhat dusty when dry, scalelike, triangular-ovate. Flowering stems simple, flabellately fascicled, usually reddish, 10–30 cm × (1.5)–2–4(–6) mm, smooth, deciduous each year. Stem leaves alternate, ascending, oblongate to narrowly oblong, 1–3 × 0.2–0.7 cm, adaxially densely mammillate, abaxially mammillate along midvein, base attenuate, margin entire, apex acute. Inflorescences compound cymes; male inflorescences 40–100-flowered; female inflorescences 10–20-flowered. Flowers unisexual, male ones unequally 5-merous; pedicel 2–8 mm, densely mammillate. Petals free, greenish yellow, usually reddish apically, narrowly oblong-oblongate, 4–6 × 1–1.5 mm, apex rounded. Stamens 10, longer than petals; antepetalous ones inserted 0.2–0.8 mm from petal base. Nectar scales oblong, apex emarginate. Carpels almost free, 6–12 mm. Styles short. Follicles ca. 8-seeded. Seeds ellipsoid, winged.

Thickets, grassy slopes, moist places, rocks; 4000–5000 m. Xizang [Bhutan, Sikkim].


唐古红景天 tang gu hong jing tian

*Sedum algidum* (Ledebour) Fischer & C. A. Meyer var. *tanguticum* Maximowicz, Bull. Acad. Imp. Sci. Saint-Pétersbourg, Sér. 3, 29: 126. 1883; *Rhodiola algida* Ledebour var. *tangutica* (Maximowicz) S. H. Fu. Plants glabrous. Caudex robust, long; persistent old flowering stems sometimes present, few. Caudex leaves sessile scalelike, triangular. Flowering stems straw-colored (or at least dusky) when dry and 10–17(–30) cm in male plants, brown and 15–30 cm in female plants. Leaf blade linear, 8–15 × 0.5–2 mm, apex obtusely acuminate. Inflorescences corymbose to conical, compact, to 5 × 5 cm in female plants, bracteate. Flowers unequally 5-merous. Sepals linear-oblong, 2.5–3 × 0.5–0.6 mm in male flowers, 3–3.5 × 0.5–0.7 mm in female flowers, apex obtuse. Petals pinkish when dry, oblong-lanceolate, ca. 4.5 × 1.2 mm, apex obtusely acuminate. Stamens 10; antepetalous ones ca. 2.5 mm, inserted ca. 1.5 mm from petal base. Nectar scales quadrate, apex emarginate. Follicles erect, narrowly lanceolate, to 10 mm, apical beak erect or ± recurved, short. Fl. May–Aug, fr. Aug.

- Rock crevices in alpine areas, beside water; 2100–4700 m. Gansu, Qinghai, Sichuan.

This species is used medicinally.


美花红景天 mei hua hong jing tian


Caudex terete, ca. 1.5 cm in diam. Caudex leaves brownish, scalelike, triangular to ovate-triangular. Flowering stems straw-colored when dry, 12–18 × 1.5 cm. Stem leaves subopposite or alternate; petiole ca. 2 mm; leaf blade rhombic-ovate or narrowly so or elliptic or narrowly so, 4–5.5 × 1–2.2 cm, base attenuate, margin apically roughly serrate-crenate, apex acute. Inflorescences terminal, compound corymbs; peduncle 0.5–1.5 cm; bracts few, resembling stem leaves but smaller. Flowers unisexual, male ones unequally 5-merous; pedicel 1.5–2.5 mm. Sepals triangular to ovate-triangular, 1.2–0.6 mm, apex obtuse. Petals pinkish to purple, narrowly obovate, 3–4.5 × 0.8–1.5 mm, margin entire or erose toward apex, apex obtuse. Stamens 10; antepetalous ones 1–1.5 mm, inserted ca. 0.5 mm from petal base. Nectar scales suboblong, apex rounded-truncate. Carpels erect, lanceolate, ca. 1.5 mm. Fl. Jun.
Rocks on shady slopes; ca. 3600 m. S Xizang (Gyirong Xian) [Nepal].


红景天 hong jing tian

Roots erect, robust. Caudex short. Caudex leaves scallelike. Flowering stems 10–30 cm. Stem leaves remote, sessile, oblong, elliptic-oblancoate, or obovate, 0.7–3.5 × 0.5–1.8 cm, base subamplexicaul, margin entire, apically few dentate, or serrate, apex acute to acuminate. Inflorescences corymbiform or capitate, compact, ca. 2 × 3–6 cm, many flowered. Flowers unisexual, male ones unequally 4-merous. Sepals lanceolate-linear, ca. 1 mm, apex obtuse. Petals yellowish, linear-oblanceolate, 2–6 mm, apex obtuse. Stamens 8, longer than petals. Nectar scales 4, oblong, 1–1.5 × ca. 0.6 mm, apex emarginate. Carpels of female flowers erect. Styles recurved. Follicles lanceolate to linear-lanceolate, 6–8 mm, apical beak ca. 1 mm. Seeds lanceolate, ca. 2 mm, winged at one end. Fl. Apr–Aug, fr. Jul–Sep.

Forested, grassy, or rocky slopes; 1800–2700 m. C Gansu, Hebei, Jilin, Shanxi, Xinjiang [Japan, Kazakhstan, Korea, Mongolia, Russia; Europe, North America].

1a. Leaves to 3.5 cm, margin entire or apically few dentate; flowering stems 20–30 cm; inflorescences corymbiform; petals greenish yellow ....................... 30a. var. rosea

1b. Leaves 0.7–1.2 cm, margin serrate; flowering stems 10–16 cm; inflorescences capitate; petals yellow ................................ 30b. var. microphylla

30a. Rhodiola rosea var. rosea

红景天(原变种) hong jing tian (yuan bian zhong)

Sedum roseum (Linnaeus) Scopoli, Fl. Carniol. ed. 2, 1: 326. 1771; Rhodiola elongata (Ledebour) Fischer & C. A. Meyer; R. rosea var. elongata (Ledebour) H. Jacobsen; R. telephioideae (Maximowicz) S. H. Fu; Sedum caerulans H. Léveillé & Vaniot; S. elongatum Ledebour; S. rhodola de Candolle; Sedum suboppositum Maximowicz var. telephioideae Maximowicz.


Forested, grassy, or rocky slopes; 1800–2700 m. C Gansu, Hebei, Jilin, Shanxi, Xinjiang [Japan, Kazakhstan, Korea, Mongolia, Russia; Europe, North America].

Plants misidentified in FRPS as Rhodiola atropurpurea (Turczaninov) Trautvetter & C. A. Meyer belong to this variety.


小叶红景天 xiao ye hong jing tian

Sedum roseum (Linnaeus) Scopoli var. microphyllum Fröderström, Oesterr. Bot. Z. 87: 120. 1938.

Flowering stems 10–16 cm. Leaves obovate to oblong, 0.7–1.2 cm, margin serrate. Inflorescences capitate. Petals yellow. Fl. Jul–Aug.

C Gansu (Wuwei Xian).


库页红景天 ku ye hong jing tian

Sedum sachalinense (Borissova) Voroschilov.

Roots usually erect, rarely prostrate, robust. Caudex short, thick. Caudex leaves dusky, scalelike, membranous. Flowering stems 6–30 cm. Stem leaves basally remote but apically denser, spatulate, oblong-rhombic, or lanceolate, 0.7–4 × 0.4–0.9 cm, base cuneate, margin basally subentire but apically roughly dentate, apex acute to acuminate. Inflorescences cymes, compact, 1.5–2.5 cm in diam., many flowered, basally leafy. Flowers unisexual, 4(or 5)-merous. Sepals lanceolate-linear, 1–3 mm. Petals yellowish, linear-oblancoate to oblong, 2–6 mm, apical oblast. Stamens of male flowers 8, longer than petals; anthers yellow. Nectar scales 4, oblong, 1–1.5 × ca. 0.6 mm, apex emarginate. Carpels of female flowers 4. Styles recurved. Follicles erect, lanceolate to linear-lanceolate, 6–8 mm, apical beak ca. 1 mm. Seeds lanceolate, ca. 2 mm, winged at one end. Fl. Apr–Jun, fr. Jul–Sep.

Forested slopes, gravel slopes, alpine tundra; 1600–2500 m. Heilongjiang, Jilin [Japan, Korea, Russia].


大花红景天 da hua hong jing tian

Sedum crenulatum J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 96. 1858; Rhodiola euryphylla (Fröderström) S. H. Fu; R. megalophylla (Fröderström) S. H. Fu; R. rotundata (Hemsley) S. H. Fu; Sedum bupleuroides Wallich ex J. D. Hooker & Thomson var. rotundatum (Hemsley) Fröderström; S. euryphyllum Fröderström; S. megalanthum Fröderström; S. megalophylla Fröderström; S. rotundatum Hemsley; S. rotundatum Hemsley var. oblongatum C. Marquand & Airy Shaw.

Caudex few branched, short, 5–20 cm; persistent old flowering stems and branches few, black when dry. Caudex leaves scalelike, oblancoate, 1–2 cm, apex subacut. Sterile branches erect, 4–17 cm, apically densely leafy; leaves broadly obovate, 1–3 cm. Flowering stems numerous, erect or flabellate, straw-colored to red, 5–20 cm; leaves shortly pseudopetiolate; leaf blade elliptic-oblong to subobicular, 1.2–3 × 1–2.2 cm, margin entire and undulate to crenate, apex obtuse to mucronate. Inflorescences corymbiform, ca. 2 × 2–3 cm, many flowered, bracteate. Flowers shortly to long pedicellate, unisexual, large, male ones unequally 5-merous. Sepals narrowly triangular, lanceolate, or
oblong, 2–3.5 mm, apex obtuse to subobtuse. Petals red to purplish red, oblanceolate, (5–)6–7.5 × 1–1.5 mm, base long unguulate, apex obtuse. Stamens 10, equaling petals; antepetalous ones inserted ca. 2.5 mm from petal base. Nectar scales subquadruangular, quadrangular, or oblong, apex emarginate. Carpels lanceolate to oblong, 3–3.5(–6) mm, sterile. Styles short. Female flowers similar but stamens absent and carpels equaling petals. Follicles erect, red when dry, 8–10 mm. Seeds obvoid to ovoid, 1.5–2 mm, winged at both ends. Fl. Jun–Sep.

Thickets, grassland slopes, slicks on mountain slopes, rocky places, rock crevices; 2800–5600 m. Qinghai, Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].


齿叶红景天  
**Sedum serratum** (H. Ohba) J. P. Kozhevnikov.

Caudex thick. Caudex leaves scalelike. Flowering stems solitary or few, straw-colored, 28–60 cm, apically mammillate. Stem leaves alternate, sessile, narrowly oblong, oblanceolate, 6–13 × 1.6–3.5 cm, base somewhat auriculate, margin serrulate, apex acute. Inflorescences terminal, compoundly cymose, large, more than 300-flowered; peduncle mammillate; bracts few, sessile, oblanceolate to narrowly lanceolate, 2.5–4 × ca. 1 cm, margin serrate. Flowers unisexual, male ones unequally 5- or 6-merous, female ones 4- or 5-merous; pedicel 1.5–2 mm. Sepals narrowly oblong in male flowers, subulate in female ones, ca. 1 mm. Petals oblanceolate to linear-oblanceolate and 2–3 mm in male flowers, linear and 2–2.5 mm in female ones. Stamens 10 or 12, 2.7–3 mm. Ovary ca. 2 mm. Nectar scales oblong, apex emarginate. Carpels erect, 4.2–7 mm, base subconnate, apex tapered. Styles recurved. Fl. Aug.

Forested slopes, field borders, beside trails near field borders; 3300–3800 m. S Xizang (Gyaca Xian) [India].


Slopes, sides of ravines, glacial rocks; 2800–4700 m. Xinjiang, Xizang [Afghanistan, India, Mongolia, Pakistan, Tajikistan; SW Asia (Iran)].


准噶尔红景天  
zhun ga er hong jing tian

Main root robust. Caudex thick, 4–5(–10) cm. Caudex leaves brown, scalelike, ovate-triangular, membranous. Flowering stems 1–4, 5–11 cm. Stem leaves alternate, yellowish green, ovate-triangular, 5–10 × 4–5 mm, base truncate to subcordate, margin coarsely obtuse-serrate, apex shortly acuminate. Inflorescences capitately corymbose, dense, ca. 1 × 1–2 cm, basally leafy. Flowers unisexual, male ones unequally 4-merous; pedicel 2–3 mm. Sepals reddish, triangular-linear, shorter than petals. Petals red, sometimes yellow at base, elliptic, ca. 2 mm, apex obtuse. Stamens 8, ca. 4 mm; filaments and anthers yellow. Nectar scales oblong, apex retuse. Fl. Jun.

Subalpine and alpine meadows; 2500–2700 m. W Xinjiang (Wenquan Xian).


根出红景天  
gen chu hong jing tian

Caudex prostrate, 2–4 mm in diam. Caudex leaves scalelike, small, apex obtuse. Flowering stems few, ascending to suberect, 2–12 cm. Stem leaves somewhat crowded, linear, narrowly elliptic, linear-oblanceolate, elliptic-oblanceolate or spatulate, 7–10 × 1.5–2.5 mm, base decurrent or long attenuate and shortly spurred, margin entire or shallowly 3–5-crenate, apex rounded, obtuse, or acute. Inflorescences corymbose, dense, ca. 1 cm in diam., bracteate. Flowers unisexual, unequally 5-merous in male plants, rarely 4- or 6-merous. Sepals linear to subulate, 3–4.5 mm, apex obtuse. Petals green to yellowish white, linear-oblanceolate, linear-spatulate, narrowly elliptic, or linear-oblanceolate, 3.5–6 × 1–1.5 mm, apex obtuse. Stamens 10; antepetalous ones 5–7 mm; antepetalous ones 4–6 mm, inserted ca. 1.5 mm from petal base. Nectar scales oblong, apex emarginate. Carpels erect, narrowly ellipsoid, 5–7 mm. Seeds numerous. Fl. Jun–Aug.

3700–4400 m. Xizang, NW Yunnan [Bhutan, NE India, Nepal, Sikkim].

1a. Flowers 5-merous; petals narrowly elliptic to linear-oblanceolate; leaves linear, narrowly elliptic, or linear-oblanceolate, apex obtuse or acute; flowering stems to 12 cm 36a. subsp. *cretinii*

1b. Flowers often 4-merous; petals linear-oblanceolate to linear-spatulate; leaves elliptic-oblanceolate to spatulate, apex...
**36a. Rhodiola cretinii** subsp. cretinii

根出红景天 (原亚种) gen chu hong jing tian (yuan ya zhong)


Flowering stems to 12 cm. Leaves linear, narrowly elliptic, or linear-obovate, base long attenuate and shortly spurred, margin entire or shallowly 3–5-crenate, apex obtuse to acute. Flowers 5-merous. Petals narrowly elliptic to linear-obovate. 3700–4100 m. Xizang [Bhutan, NE India, Nepal, Sikkim].


高山红景天 gao shan hong jing tian


Flowering stems 2–5 cm. Leaves elliptic-oblong to spatulate, base decurrent, margin entire, apex rounded. Flowers often 4-merous. Petals linear-obovate to linear-spatulate.

4300–4400 m. NW Yunnan.


紫绿红景天 zi lu hong jing tian


• Forests margins, grassly slopes, often in partial shade; 2000–5600 m. Gansu, Hebei, Qinghai, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Kazakhstan, Myanmar].


紫绿红景天 zi lu hong jing tian

Caudex branched, erect, to 2 cm in diam. Caudex leaves scalelike, triangular to subtriangular. Flowering stems few, erect, (10–)12–40 cm, densely glandular hairy. Stem leaves numerous, alternate, sessile, narrowly oblong-lanceolate-elliptic, narrowly ovate, or ovate, 1–6 × 0.3–1 cm, glabrous or abaxially glandular hairy, midvein conspicuous, base rounded or subcordate, margin remotely dentate and often revolute, apex rounded, obtuse, or subacute. Inflorescences corymbiform-umbellate, many flowered, bracteate. Flowers bisexual or unisexual (plants hermaphroditic, dioecious, or rarely gynodioecious), male ones unequally 5-merous; pedicel long, glandular. Sepals linear-lanceolate, 1–2.5 mm. Petals greenish or reddish, linear-oblong to narrowly obovate, 3–4 mm. Stamens 10, 2.5–3.5 mm; filaments purple; anthers globose. Nectar scales oblong-cuneate, apex emarginate. Carpels erect, lanceolate, 2–3 mm. Follicles ca. 6 mm, apical beak recurved. Fl. Jul–Aug.

• Forests or forest margins, grassland near streams, stony places on grassy slopes; 2500–4100 m. W Sichuan, S Xizang, NW Yunnan.

1a. Stem leaves narrowly oblong-lanceolate, 2.5–6 × 0.3–1 cm, abaxially glandular hairy, base rounded; flowering stems 15–40 cm; flowers bisexual (plants dioecious); petals greenish, linear-oblong

38a. subsp. *purpureoviridis*

1b. Stem leaves elliptic, narrowly ovate, or ovate, 1–2 × 0.4–0.7 cm, glabrous, base subcordate; flowering stems (10–)12–20(–22) cm; flowers bisexual or rarely female (plants hermaphroditic or rarely gynodioecious); petals reddish, narrowly obovate ........................ 38b. subsp. *phariensis*.

**38a. Rhodiola purpureoviridis** subsp. *purpureoviridis*

紫绿红景天 (原亚种) zi lu hong jing tian (yuan ya zhong)


Flowering stems 15–40 cm. Stem leaves narrowly oblong-lanceolate, 2.5–6 × 0.3–1 cm, abaxially glandular hairy, base rounded, apex subacute. Flowers unisexual (plants dioecious). Petals greenish.
• Forests or forest margins, grassland near streams, stony places on grassy slopes; 2500–4100 m. W Sichuan, NW Yunnan.


帕里红景天 pa li hong jing tian


Flowering stems (10–)12–20(–22) cm. Stem leaves alternate; petiole ca. 1 mm; leaf blade adaxially green, abaxially ± glaucous, linear-lanceolate, oblong-lanceolate, ovate-lanceolate, or ovate, 9–25 × 3–5(–7) mm, base auriculate to rounded, margin obscurely dentate to subentire and usually revolute, apex acute to acuminate. Inflorescences corymbiform, 3–5 × 5–10 cm; bracts leaflike, small. Flowers shortly pedicellate, unisexual, unequally 4- or 5-merous. Sepals narrowly triangular, 1–2.5 × 0.5–1 mm. Petals purplish red, oblong to oblong-ovate, 5–6 mm in male flowers, 3–4 × 1–1.3 mm in female ones. Stamens of male flowers 8; antesepalous ones ca. 2 mm; antepetalous ones ca. 1.5 mm. Nectar scales oblong-quadrangular, apex emarginate. Carpels erect, ca. 2 mm. Follicles 3–4 mm. Fl. Jun–Jul, fr. Jul–Aug.

Forests, grassy slopes, rocky cliffs; 2800–4300 m. W Sichuan, SE Xizang, NW Yunnan [Bhutan, Myanmar, Nepal, Sikkim].


异色红景天 yi se hong jing tian

Sedum discolor Franchet, J. Bot. (Morot) 10: 285. 1896; S. bupleuroides Wallich ex J. D. Hooker & Thomson var. discolor (Franchet) Fröderström.

Caudex prostrate, ascending, or suberect, 3–5 mm in diam. Caudex leaves scalelike, narrowly triangular. Flowering stems 1 to few, simple, erect, 12–40 cm. Stem leaves alternate; petiole ca. 1 mm; leaf blade adaxially green, abaxially ± glaucous, linear-lanceolate, oblong-lanceolate, ovate-lanceolate, or ovate, 9–25 × 3–5(–7) mm, base auriculate to rounded, margin obscurely dentate to subentire and usually revolute, apex acute to acuminate. Inflorescences corymbiform, 3–5 × 5–10 cm; bracts leaflike, small. Flowers shortly pedicellate, unisexual, unequally 4- or 5-merous. Sepals narrowly triangular, 1–2.5 × 0.5–1 mm. Petals purplish red, oblong to oblong-ovate, 5–6 mm in male flowers, 3–4 × 1–1.3 mm in female ones. Stamens of male flowers 8–10; antepetalous ones ca. 2 mm; antepetalous ones ca. 1.5 mm. Nectar scales oblong-quadrangular, apex emarginate. Carpels erect, ca. 2 mm. Follicles 3–4 mm. Fl. Jun–Jul, fr. Jul–Aug.

Caudex mostly simple, prostrate; persistent old flowering stems absent. Winter bud 8–10 mm, apex acute. Caudex leaves scalelike, triangular-ovate, 6–9 mm, apex subacute. Sterile stems apically densely leafy. Flowering stems 1 or 2, pale, to 6 cm, transversely wrinkled when dried, mostly leafless. Stem leaves alternate, sessile, oblanceolate, much reduced except immediately below inflorescences, 6–8 mm, base slightly narrowed, apex subacute. Nectaries corymbiform-umbellate, to 4 × 4 cm; bracts leaflike, 4–10 mm. Flowers unisexual, 4-merous; pedicell 2–4 mm. Sepals broadly lanceolate, ca. 4 mm, apex obtuse. Petals reddish, drying pale, broadly oblanceolate, ca. 4.5 mm, apex obtuse. Stamens 8, slightly shorter than or equaling petals. Nectar scales rectangular, apex emarginate. Carpels ovoid; ca. 4 mm. Styles short. Follicles not seen. Fl. Jul–Aug.

Screa slopes; 4500–4900 m. Xizang [India]. The available herbarium material suggests that this is a typical plant of loose screw slopes, on which loose stones cover the caudex and flowering stems (except the inflorescences) and pull them downhill.


柴胡红景天 chai hu hong jing tian

Sedum bupleuroides Wallich ex J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 98. 1858; Rhodiola bhuatnica (Praeger) S. H. Fu; R. hookeri S. H. Fu; Sedum bhuatanense Praeger; S. bhuatanicum Praeger; S. cooperi Praeger (1919), not Clemenceau (1868); S. gorisii Raymond-Hamet.

Caudex erect, dusky, obconical, to 10 × 3 cm. Caudex leaves brown-black, scalelike. Flowering stems 1 or 2, (1–)5–60(–100) cm. Stem leaves alternate, abaxially greenish, narrowly to broadly elliptic, narrow to broadly ovate, oblong-ovate, obovate, or suborbicular, 0.3–6(–9) × 0.4–2.2(–4.5) cm, base cordate to shortly or long attenuate, margin entire or sparsely serrate, apex rounded, obtuse, acute, or mucronate. Inflorescences terminal, corymbiform, 7–100-flowered; bracts leaflike. Flowers unisexual, male ones unequally 5-merous. Sepals purplish red, narrowly oblong, oblong-ovate, or narrowly triangular, 1–5 × 0.3–1.2 mm, apex rounded to obtuse. Petals dark purplished red, obovate or narrowly so, 2.8–4 × 1.2–1.6 mm in male flowers, 1.5–3 × 0.5–0.7 mm in female ones. Stamens 10, equaling or slightly shorter than petals. Nectar scales oblong or narrowly or transversely so, apex emarginate. Carpels of female flowers erect, broadest at base, 3–5 × as long as petals, apex recurved. Follicles 4–5(–10) mm. Seeds 10–16. Fl. Jun–Aug, fr. Aug–Sep. Thickets, grassy places, rock crevices on slopes; 2400–5700 m. W Sichuan, Xizang, NW Yunnan [Bhutan, Myanmar, Nepal, Sikkim].


柴胡红景天 chai hu hong jing tian

Sedum atsaense Fröderström, Ark. Bot. 30A(9): 4. 1943. Caudex mostly simple, prostrate; persistent old flowering stems absent. Winter bud 8–10 mm, apex acute. Caudex leaves scalelike, triangular-ovate, 6–9 mm, apex subacute. Sterile stems apically densely leafy. Flowering stems 1 or 2, pale, to 6 cm, transversely wrinkled when dried, mostly leafless. Stem leaves alternate, sessile, oblanceolate, much reduced except immediately below inflorescences, 6–8 mm, base slightly narrowed, apex subacute. Nectaries corymbiform-umbellate, to 4 × 4 cm; bracts leaflike, 4–10 mm. Flowers unisexual, 4-merous; pedicell 2–4 mm. Sepals broadly lanceolate, ca. 4 mm, apex obtuse. Petals reddish, drying pale, broadly oblanceolate, ca. 4.5 mm, apex obtuse. Stamens 8, slightly shorter than or equaling petals. Nectar scales rectangular, apex emarginate. Carpels ovoid; ca. 4 mm. Styles short. Follicles not seen. Fl. Jul–Aug.

Scree slopes; 4500–4900 m. Xizang [India].
or obovate-elliptic, 5–10 × ca. 2 mm, apex obtuse. Stamens 10, 0.8–1.2 cm. Nectar scales subspatulate-quadrangular or subquadrangular, apex slightly dilated, emarginate. Carpels erect, ovoid. follicles lanceolate, 1–1.5 cm, base narrow. Seeds winged. Fl. Aug–Sep, fr. Oct.

Forests, rocks on slopes; 2500–3800 m. W Sichuan, SE Xizang, W Yunnan [Bhutan, N India, Myanmar, Nepal, Sikkim].

42a. *Rhodiola wallichiana* var. *cholaensis*

42b. *Rhodiola wallichiana* var. *wallichiana*


**44. *Rhodiola pinnatifida*** Borissova in Komarov, Fl. URSS 9: 475. 1939.
Rocks on slopes; 2900–4300 m. Gansu, Qinghai, Shaanxi, Sichuan, SE Xizang, NW Yunnan [Myanmar].

云南红景天 yun nan hong jing tian
Sedum yunnanense Franchet, J. Bot. (Morot) 10: 286. 1896; Rhodiola henryi (Diels) S. H. Fu; R. papilloscarpa (Fröderström) S. H. Fu; R. rotundifolia (Fröderström) S. H. Fu; R. sinica (Diels) Jacobsen; Sedum henryi Diels; S. sinicum Diels; S. valerianoides Diels; S. yunnanense var. henryi (Diels) Raymond-Hamet; S. yunnanense var. oxyphyllum Fröderström; S. yunnanense var. papilloscarpa Fröderström; S. yunnanense var. rotundifolia Fröderström; S. yunnanense var. valerianoides Raymond-Hamet.

Caudex simple or few branched, long, 0.7–2 cm in diam. Caudex leaves scalelike, lanceolate, ovate-triangular, or triangular. Flowering stems solitary or few, erect, 20–100 cm, glabrous. Stem leaves 3-verticillate, rarely opposite, sessile, abaxially pale green, ovate-lanceolate, elliptic, oblong, ovate-oblong, broadly ovate, or orbicular, (1–)4–7–10 × (0.6–)2–4–8 cm, base rounded-cuneate, margin remotely serrate, suboblate, or rarely entire, apex obtuse to acute. Inflorescences cymose-paniculate, (3–)5–15 × 2–8 cm; branches verticillate. Flowers numerous, unisexual, unequally 4- or 5-merous in male plants, small. Sepals linear-lanceolate to lanceolate, 0.5–1 mm. Petals of male flowers greenish yellow to yellow, spathulate to oblanceolate, ca. 1.5 mm; those of female flowers purple, linear, ca. 1.2 mm. Stamens 8, shorter than petals. Nectar scales spatulate-quadrate or cuneate-quadrate in male flowers, suborbicular in female ones. Carpels divergent, ovoid, 1.5–3 mm. Follicles stellate, 3–3.2 mm, base connate for ca. 1 mm. Seeds lanceolate, ca. 2 × 0.4 mm, winged. Fl. May–Jul, fr. Jun–Aug.

• Forests on slopes; 1000–4000 m. Gansu, Guizhou, Henan, Hubei, Shaanxi, Sichuan, Xizang, Yunnan. This species is used medicinally.

长圆红景天 chang yuan hong jing tian

Caudex erect or inclining, ca. 1.5 cm in diam. Caudex leaves scalelike, narrowly triangular-lanceolate. Flowering stems erect, 20–40 cm. Proximal stem leaves 3- or 4-verticillate or opposite, sessile, ± lanceolate- to ovate-oblong, linear-oblong distally on stem, 2–5 × 0.6–1 cm, margin remotely and coarsely dentate, pinnately lobate, or subentire. Inflorescences terminal cymose panicles or axillary cymes. Flowers unisexual, male ones unequally 5-merous. Sepals ca. 3 mm, base connate for ca. 1 mm. Petals oblong and 3–3.5 mm in male flowers, triangular-ovate and ca. 1.1 mm in female ones. Stamens 10; antepetalous ones as long or slightly longer than petals; antepetalous ones slightly shorter than petals. Nectar scales broadly cuneate, apex rounded to emarginate. Carpels oblong-ovoid, ca. 3 mm. Styles recurved, short. Fl. Jun–Jul, fr. Aug.

• Slopes; 2900–4000 m. W Sichuan, NW Yunnan.

裂叶红景天 lie ye hong jing tian

Roots long. Caudex leaves scalelike. Flowering stems erect or creeping, ca. 15 cm, glabrous or finely mammillate, leafy. Stem leaves alternate, elliptic to obovate, 5–7 × 2–4 cm, base attenuate, margin pinnately parted or divided; segments 2 or 3, linear, 1.5–3 mm wide. Inflorescences corymbiform, compact, ca. 1.5 × 2.5 cm. Flowers bisexual, unequally 5-merous; petal finely mammillate or absent. Sepals narrowly triangular-linear, ca. 3 mm. Petals greenish white, elliptic, ca. 6 × 2 mm, margin entire, apex subobtuse. Stamens 10; antepetalous ones ca. 5 mm; antepetalous ones ca. 4 mm, inserted ca. 1 mm from petal base. Nectar scales subquadangular, apex somewhat broadly truncate to subretuse. Carpels narrowly lanceolate, ca. 3.5 mm. Styles short. Follicles erect, ca. 6 mm. Seeds brown, ovoid-oblong, winged at both ends. Fl. Aug, fr. Oct.

Rock crevices on slopes, scree slopes; 3200–4300 m. Xizang, NW Yunnan (Zhongdian Xian) [India, Nepal, Pakistan].

巴塘红景天 ba tang hong jing tian

Caudex short, fleshy. Flowering stems simple, erect, 8–11 cm, glabrous, apically finely mammillate. Stem leaves alternate, evenly distributed; petiole 1.5–2 cm; leaf blade oblong, 1–3 × 0.5–2.5 cm, base abruptly narrowed, margin deeply crenate to pinnatifid and finely mammillate, apex obtuse. Inflorescences corymbiform, compact; bracts linear, 8–11 mm. Flowers bisexual, unequally 5-merous; pedicel short,
finely mammillate. Sepals triangular-linear, ca. 6 mm, base ca. 1.5 mm wide, margin sometimes finely mammillate. Petals narrowly oblong to elliptic, 5.5–8.5 × 2.5–4.3 mm, margin apically erose, apex obtuse. Stamens 10; antepetalous ones ca. 6 mm; antepetalous ones 2.5–3 mm, inserted ca. 2 mm from petal base. Nectar scales quadrangular, ca. 0.4 × 0.5 mm, apex emarginate. Carpels erect, narrowly lanceolate, ca. 6.5 mm. Styles ca. 1.5 mm. Fl. Sep.


圣地红景天  sheng di hong jing tian
Main root branched, thick. Caudex short. Caudex leaves scalelike, lanceolate-triangular. Flowering stems few or numerous, simple, erect, straw-colored, 8–16 cm, finely mammillate with age. Stem leaves alternate, evenly distributed, shortly petiolate; leaf blade obovate-oblong to obovate, 8–11 × 4–6 mm, glabrous or sparsely villous, base cuneate, margin with 4 or 5 dentate lobes distributed, shortly petiolate; leaf blade obovate-oblong, 10–15-flowered; bracts spatulate to oblanceolate, 6–8 × ca. 1 mm. Flowers bisexual, unequaly 5-merous. Sepals linear-lanceolate, 4–5 × ca. 1 mm. Petals reddish or white, oblong-ovate, 6–7 × ca. 4 mm, margin basally entire and apically erose, apex acuminate. Stamens 10, shorter than petals; antepetalous ones to 6 mm; antepetalous ones to 3 mm, inserted ca. 2 mm from petal base. Nectar scales suboblong, ca. 0.4 × 0.6 mm, apex emarginate. Carpels erect, lanceolate, ca. 6 mm, base subconnate. Styles ca. 1 mm. Fl. Aug–Sep.

50a. Rhodiola sacra var. sacra

50b. Rhodiola sacra var. tsuiana


卵萼红景天  luan e hong jing tian
Caudex prostrate and underground basally, ascending or erect in middle part, slender. Caudex leaves scalelike, triangular. Flowering stems simple, ascending to suberect, 5–25 cm. Stem leaves aggregated toward stem apex; petiole ca. 1.5 cm; leaf blade oblong to elliptic, 3–5 × 1.1–2.5 cm, base attenuate and decurrent, margin 3- or 4-lobed or -cleft; segments sometimes with 1 obtuse serration at margin. Inflorescences dichasia, compact, ca. 2 × 2 cm. Flowers bisexual, unequally 5-merous. Sepals linear or ovate-triangular, ca. 1 mm or (4–)6–8 mm, apex rounded. Petals greenish white, narrowly oblong-ovate, ca. 5 × 1.5 mm, margin entire. Stamens 10, slightly shorter than or equaling petals. Nectar scales oblong, apex truncate to emarginate. Carpels erect, 4–5 mm. Styles ca. 1 mm. Fl. Jun–Sep, fr. Sep–Oct.

Forested slopes, moss-covered tree trunks, rocks, rocky cliffs; 2700–4200 m. S Xizang, NW Yunnan [Bhutan, Myanmar, Nepal, Sikkim].

53a. Rhodiola ovatisepala var. ovatisepala
卵萼红景天(原变种) luan e hong jing tian (yuan bian zhong)
Sedum linearifolium Royle var. ovatisepalum

1a. Sepals ovate-triangular, ca. 1 mm 53a. var. ovatisepala 1b. Sepals linear, (4–)6–8 mm ......... 53b. var. chingii


线萼红景天  xian e hong jing tian


昆明红景天  kun ming hong jing tian

Main root somewhat thick. Caudex prostrate, short, fleshy. Caudex leaves scalelike, triangular-ovate, ca. 2 mm. Flowering stems simple, erect, 6.5–13 cm. Stem leaves alternate; petiole 4–14 mm; leaf blade rhombic to rhombic-spatulate, 0.7–2 × 0.5–2 cm, base tapered. Inflorescences corymbiform, compact, 1–2 × 1–2 cm; bracts sessile, 3–10 mm, basal ones ovate, margin crenate, apical ones obovate-linear, margin entire. Flowers bisexual, shortly pedicellate, unequally 5-merous. Sepals ovate-triangular, 4–6 × 1.2–2 mm. Petals white, ovate-lanceolate, 8–11 × 2.5–3 mm, apex mucronate, macro awnlike, to 1 mm. Stamens 10; antepetalous ones 6–7 mm; antepetalous ones 4–5 mm, inserted slightly below middle of petal. Nectar scales oblong-quadrangular, apex emarginate. Carpels ovoid-oblong, ca. 6 mm. Styles ca. 2 mm. Follicles erect. Seeds numerous, obovoid-oblong, winged at both ends. Fl. Sep, fr. Oct–Nov.

• Rocks on slopes; ca. 2400 m. Yunnan (Kunming Shi).


六叶红景天  liu ye hong jing tian
Flowering stems ascending, ca. 18 cm, minutely mammillate. Stem leaves 6-verticillate, sessile, elliptic-oblong, ca. 4 × 2.5 cm, finely to minutely mammillate, base cuneate, margin pinnately lobed; lobes entire or remotely dentate at margin, apex obtuse. Inflorescences corymbiform, dense, ca. 3 × 3–5 cm; bracts narrowly oblanceolate-linear, ca. 6 × 1.2 mm, minutely mammillate. Flowers bisexual, unequally 5-merous. Sepals linear, ca. 3.5 × 1–1.3 mm. Petals lanceolate, 6.3–7 × ca. 2 mm, apex subacute. Stamens 10, slightly shorter than petals; antepetalous ones inserted ca. 2 mm from petal base; anthers globose. Nectar scales obovate, ca. 0.5 mm. Styles long. Follicles erect, free almost to base, narrowly lanceolate, ca. 5.2 mm. Seeds ellipsoid, ca. 1 mm, striate.

• Rocks in Picea forests, slopes; 3500–4100 m. E Xizang (Qamdo Xian).