

10. KRASCHEINNIKOVIA Gueldenstaedt, Novi Comment. Acad. Sci. Imp. Petrop. 16: 551. 1772.

驼绒藜属 tuo rong li shu

Eurotia Adanson.

Shrubs or subshrubs, covered with stellate and dendroid hairs in combination with simple (unbranched), uniseriate hairs. Leaves alternate, solitary or in fascicles, petiolate to sessile; leaf blade flat, linear-lanceolate to ovate, base cuneate, rounded, or subcordate, margin entire, apex obtuse or acute. Flowers unisexual (plants monoecious or dioecious). Male flowers several in glomerules, forming an interrupted spike or subcapitate inflorescence, without bracts; perianth segments 4, ovate or elliptic, membranous, abaxially hairy, basally connate; stamens 4; anthers oblong; filaments linear, exerted. Female flowers axillary, 1 or 2 together; bractlets 2, united into a tube in proximal half or at base (here termed "female floral tube"), compressed, ellipsoid or obovoid, abaxially 4-fascicular villous or shortly hairy in fruit; perianth absent; ovary sessile, ellipsoid, hairy; style short; stigmas 2, pubescent. Utricle ellipsoid or narrowly obovoid, compressed; pericarp membranous, free from seed. Seed vertical; testa membranous; embryo semi-annular or horseshoe-shaped; radicle inferior.

Six or seven species: mainly in Eurasia, one or two species in W North America: four species (one endemic) in China.

Much controversy surrounds the nomenclature of this genus. The widely applied name *Ceratoides* Gagnebin should be rejected in favor of *Krascheninnikovia*. When establishing the new genus *Ceratoides*, Gagnebin (Acta Helv. Phys.-Math. 2: 59. 1755), instead of citing a description, cited a pre-Linnaean work by Tournefort, in which *Ceratoides* included the annual plant now known as *Ceratocarpus arenarius* Linnaeus, the type of *Ceratocarpus* Linnaeus. Consequently, *Ceratoides* in the strict sense is a nomenclatural synonym of *Ceratocarpus*.

- 1a. Female floral tube 2-auriculate apically, abaxially shortly hairy in fruit, or (in var. *longipilosa*) 4-fascicular long villous; plants usually low cushion-shaped with prostrate or ascending branches; petiole comparatively long, clearly separated from leaf blade (alpine areas) 4. *K. compacta*
- 1b. Female floral tube 2-cornute apically, abaxially 4-fascicular villous in fruit; plants not cushion-shaped, branches normally ascending to erect; petiole short or nearly absent, not clearly separated from leaf blade.
 - 2a. Female floral tube 1-2 × as long as free, 2-cornute part; leaf blade linear to linear-lanceolate, lateral veins obscure 1. *K. ceratoides*
 - 2b. Female floral tube 4-6 × as long as free, 2-cornute part; leaf blade lanceolate, ovate, or oblong-ovate, lateral veins prominent.
 - 3a. Leaf blade ovate or ovate-oblong, base cordate; female floral tube 4-fascicular villous at base in fruit 2. *K. ewersmannia*
 - 3b. Leaf blade lanceolate or oblong-lanceolate, base broadly cuneate or rounded; female floral tube 4-fascicular villous near middle and distally in fruit 3. *K. arborescens*

1. *Krascheninnikovia ceratoides* (Linnaeus) Gueldenstaedt, Novi Comment. Acad. Sci. Imp. Petrop. 16: 555. 1772.

驼绒藜 tuo rong li

Axyris ceratoides Linnaeus, Sp. Pl. 2: 979. 1753; *Ceratiodes latens* (J. F. Gmelin) Reveal & N. H. Holmgren; *C. papposa* (Persoon) Botschantzev & Ikonnikov; *Eurotia ceratoides* (Linnaeus) C. A. Meyer; *E. prostrata* Losina-Losinskaja; *Krascheninnikovia compacta* (Losina-Losinskaja) Grubov; *K. latens* J. F. Gmelin.

Plants 50-150 cm tall, much branched; branches spreading. Leaves linear to lanceolate, 1-5 × 0.2-1 cm, base attenuate, cuneate, or rounded, apex acute or obtuse; midvein prominent. Male inflorescence to 4 cm, dense. Female floral tube ellipsoid, 3-4 × ca. 2 mm, 1-2 × as long as 2-cornute free part. Utricle ellipsoid, hairy. Fl. and fr. Jun-Sep.

Gobi desert, semideserts, dry slopes. Gansu, Nei Mongol, Qinghai, Xinjiang, Xizang [Mongolia; arid regions of N Africa, Asia, and SE Europe].

2. *Krascheninnikovia ewersmannia* (Stschegleev ex Losina-Losinskaja) Grubov, Rast. Tsentral. Azii 2: 38. 1966.

心叶驼绒藜 xin ye tuo rong li

Eurotia ewersmannia Stschegleev ex Losina-Losinskaja, Izv. Akad. Nauk SSSR, Ser. 7, Otd. Fiz.-Mat. Nauk 9: 993. 1930; *Ceratoides ewersmannia* (Stschegleev ex Losina-Losinskaja) Botschantzev & Ikonnikov.

Plants 1-2 m tall, much branched above. Petiole short; leaf blade ovate or ovate-oblong, 2-3.5 × 1-2 cm, base cordate, apex acute or rounded; midvein and lateral veins prominent. Male flowers slender. Female floral tube ellipsoid, 2-3 mm, 5-6 × as long as short, slightly recurved free part, abaxially 4-fascicular villous at base in fruit. Utricle ellipsoid, hairy. Seed vertical. Fl. and fr. Jan-Sep.

Sandy deserts, dunes, wastelands. Xinjiang [Kazakhstan, Mongolia; EC Asia].

3. *Krascheninnikovia arborescens* (Losina-Losinskaja) Czerepanov, Vasc. Pl. Russia & Adj. States, 186. 1995.

华北驼绒藜 hua bei tuo rong li

Eurotia arborescens Losina-Losinskaja, Izv. Akad. Nauk SSSR, Ser. 7, Otd. Fiz.-Mat. Nauk 9: 999. 1930; *Ceratoides arborescens* (Losina-Losinskaja) C. P. Tsien & C. G. Ma.

Plants 1–2 m tall, branching above; branches 35–80 cm. Leaves shortly petiolate; leaf blade lanceolate or oblong-lanceolate, 2–7 × 0.7–1.5 cm, base broadly cuneate or rounded, apex acute or obtuse; midvein and lateral veins prominent. Male inflorescence slender, to 8 cm. Female floral tube obovoid, ca. 3 mm, 4–5 × as long as slightly recurved, apically obtuse free part, abaxially 4-fascicular villous near middle and distally in fruit. Utricle narrowly obovoid, hairy. Fl. and fr. Jul–Sep.

• Dunes, sandy places, slopes, wastelands. S Gansu, Jilin, Liaoning, N Sichuan.

The combination *Krascheninnikovia arborescens* was published by Czerepanov in January 1995, slightly earlier than the same combination by Mosyakin (Novon 5: 52. 27 March 1995).

4. *Krascheninnikovia compacta* (Losina-Losinskaja) Grubov, Rast. Tsentral. Azii 2: 37. 1966.

垫状驼绒藜 dian zhuang tuo rong li

Plants small, cushion-shaped, 10–25 cm tall, densely branched; older branches stout, with persistent black-brown petioles; annual branches 1.5–5 cm. Leaves dense, small; petiole subequaling leaf blade, clasping, persistent; leaf blade elliptic or oblong-ovate, ca. 1 × 0.3 cm, base attenuate, margin revolute, apex rounded. Male inflorescence short, crowded, subcapitate. Female flowers 2; floral tube cylindric, ca. 0.5 cm, shorter than or equaling spreading, auriculate free part, abaxially shortly hairy or 4-fascicular long villous in fruit. Utricle ellipsoid, hairy. Fl. and fr. Jun–Aug.

Slopes, gravelly flats, high cold desert communities; 3500–5000 m. Gansu, Qinghai, Xinjiang, Xizang [Tajikistan].

- 1a. Female floral tube abaxially shortly hairy
in fruit 4a. var. *compacta*
1b. Female floral tube abaxially 4-fascicular
long villous in fruit 4b. var. *longipilosa*

4a. *Krascheninnikovia compacta* var. *compacta*

垫状驼绒藜(原变种) dian zhuang tuo rong li (yuan bian zhong)

Eurotia compacta Losina-Losinskaja, Izv. Akad. Nauk SSSR, Ser. 7, Otd. Fiz.-Mat. Nauk 9: 995. 1930; *Ceratiodes compacta* (Losina-Losinskaja) C. P. Tsien & C. G. Ma.

Female floral tube abaxially shortly hairy in fruit.

Slopes, gravelly flats, high cold desert communities; 3500–5000 m. Gansu (Qilian Shan), Qinghai, Xinjiang, Xizang [Tajikistan].

4b. *Krascheninnikovia compacta* var. *longipilosa* (C. P. Tsien & C. G. Ma) Mosyakin, Novon 5: 52. 1995.

长毛驼绒藜 chang mao tuo rong li

Ceratiodes compacta var. *longipilosa* C. P. Tsien & C. G. Ma, Acta Phytotax. Sin. 16(1): 117. 1978.

Female floral tube abaxially 4-fascicular long villous in fruit.

• High cold desert communities; 4300–4800 m. Qinghai, Xizang.

