

THE CHINESE SPECIES OF *LINARIA*  
(SCROPHULARIACEAE)

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*Linaria* is a large genus of the Scrophulariaceae primarily Palaearctic in distribution. There are about 100 species in the genus, only three of which occur in China. This paper is a taxonomic account of the Chinese species based on a series of collections from the following herbaria:

- A Arnold Arboretum
- MO Missouri Botanical Garden
- PH Philadelphia Academy of Natural Sciences
- TAI National Taiwan University
- UC University of California
- US United States National Herbarium

I am indebted to the curators of these herbaria for their kind assistance.

In the following account, one new variety is proposed in the species *L. yunnanensis* W. W. Smith. In addition to the species recorded below, *L. elatine* Mill. is known to be cultivated in Hong Kong (Forbes & Hemsl. in Journ. Linn. Soc. Bot. 26: 177. 1890). A specimen of *Wright s. n.*, on which collection this record is based is in the United States National Herbarium. *Linaria buriatica* Turcz. is found along the border of Outer Mongolia, but not in China proper. It is a much lower plant than the other species and attains a height of only 10-15 cm. Some other species of Central Asia may also have ranges extending to the borders of Sinkiang and Mongolia.

***Linaria* P. Miller**

***Linaria* P. Miller, Gard. Dict. ed. IV. 1754.**

Type species: *Antirrhinum linaria* L. of Europe.

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## Key to the Chinese Species

- A. Flowers large, the corolla to about 20 mm. or more long including the spur, the spur about half as long as the corolla proper.....1. *L. vulgaris*
- AA. Flowers smaller, the corolla about 8-16 mm. long including the spur, the spur about one-third as long as to as long as the corolla proper.
- B. Inflorescences not densely flowered; calyx-lobes glabrescent or slightly ciliate along the margins; corolla about 8-12 mm. long including the spur, as long as the corolla proper; leaves narrow, 4-5 mm. wide .....2. *L. thibetica*
- BB. Inflorescences densely flowered; calyx-lobes densely ciliate along the margins; corolla about 16 mm. long including the spur, the spur about one-third as long as the corolla proper; leaves broad, 1-3.5 cm. wide .....3. *L. yunnanensis*

1. *Linaria vulgaris* Miller

*Linaria vulgaris* Mill., Gard. Dict. ed. 8, n. 1. 1754; Benth. in DC. Prodr. 10: 273. 1846; Maxim. in Mem. Acad. Sci. St. Petersburg. Sav. Etrang. 9: 484. 1859 (Ind. Fl. Mongol.); Franchet, Pl. David. 1: 221. 1884; Forbes & Hemsl. in Journ. Linn. Soc. Bot. 26: 178. 1890; Palabin in Act. Hort. Petrop. 14: 133. 1895; Diels in Bot. Jahrb. 29: 565. 1900, 36. Beibl. 82: 96. 1905; Pai in Contr. Inst. Bot. Nat. Acad. Peiping 2: 182. 1934; Merr. in Trans. Am. Philos. Soc. n. Ser. 24 (2): 349. 1935.

*Antirrhinum linaria* L., Sp. Pl. ed. 1. 616. 1753; Lour. Fl. Cochinch. 283. 1790.

*Linaria quadrifolia* Hance in Journ. Bot. 9: 133. 1871.

"*Linaria linifolia*" sensu Bunge, Mem. Acad. Sci. St. Petersburg. Sav. Etrang. 2: 124. 1833 (Enum. Pl. Chin. Bor. 49); non Willd.

Road sides or open slopes at altitudes of about 1500-2000 meters, in Europe and Asia in Siberia, northern China and Manchuria. Flowers yellow. Flowering from June to August.

Manchuria: Lake Hanka, *H. Bohnhof* 61 (NY), 128 (NY); Hailar, *P. H. Dorsett* 3622 (PH, NY, UC, US); Mukden, *Suzuki-Tokio* 10241 (TAI); Hing-an, *Suzuki-Tokio* 10242 (TAI).

Mongolia: Northern Mongolia and Khangai, *N. Ikonnikov-Galitzky* 499 (NY), 664 (UC); Montes Kentei, *N. et V. Ikonnikov-Galitzky* 3436 (UC); Artsa Bogdo, *R. W. Chaney* 363 (UC, US).

Hopei: Peiping, *J. C. Liu 1314* (UC).

Shansi: Chiao-cheng District, *T. Tang 1521* (NY).

Shantung: Tsingtao, *Zimmermann 237* (US), *295* (US), *A. P. Jacot s. n.* (US).

Shensi: *J. Giraldi s. n.* (PH).

## 2. *Linaria thibetica* Franchet

*Linaria thibetica* Franch. in Bull. Soc. Bot. France 47: 11. 1907. The types, "Hab.-Chine occidentalis: Sutchuen circa Ta-t sien-lou, Tongolo ad rupes (Soulie, nos 475, 505)," have not been seen.

Sikang. Flowers yellow (?). Flowering in August.

Sikang: Tatsienlu, *J. A. Soulie 2885* (NY).

This species, with its tall upright stem and long narrow leaves, resembles *L. vulgaris* Mill., but is readily distinguished from it by the calyx-lobes which are relatively much longer and the smaller corolla with a spur about as the corolla proper. *Linaria vulgaris* is often branched, especially in the upper part of the stem, while both *L. thibetica* and *L. yunnanensis*, another species found in China, are unbranched throughout.

## 3. *Linaria yunnanensis* W. W. Smith

### Key to the Varieties

- A. Leaves 1.5–3.5 cm. wide; bracts and calyx-lobes densely ciliate along the margins; corolla yellow.....3a. *L. y. yunnanensis*
- AA. Leaves 1 cm. wide; bracts and calyx-lobes sparsely ciliate along the margins; corolla blue.....3b. *L. y. caerulea*

### 3a. *Linaria yunnanensis yunnanensis*

*Linaria yunnanensis* W. W. Smith in Notes Bot. Gard. Edinb. 9: 110. 1916; Marquand & Shaw in Journ. Linn. Soc. Bot. 48: 209. 1929; Hand.-Mazz., Symb. Sin. 7: 829. 1936. The type, "Plant of 18–30 inches. Flowers yellow. In fruit. Open stony pasture on the Chungtien Plateau, Yunnan. Lat. 27° 55' N. Alt. 9000–10,000 ft. Sept. 1913'. G. Forrest. No. 11,001", is in the Edinburgh Herbarium. An isotype in the herbarium of the University of California has been examined.

Forests or open meadows at altitudes of 2700–4000 meters in Yunnan and Sikang. Flowers pale yellow. Flowering from May to August.

Yunnan: Chungtien Plateau, *G. Forrest 11001* (UC); Yungning, *G. Forrest 22068* (US); between Likang, Yungning, and Yungpei, *J. F. Rock 5135* (MO, PH, US); eastern slopes of Mount Dyinaloko, northern peak of the Likang Snow Range, *J. F. Rock 10424* (PH, US), *10812* (PH, US); northeast of Likang, Ta-koo

on the Yangtze, R. C. Ching 21256 (A).

This species differs from *L. vulgaris* Mill. and *L. thibetica* Franch. in that it has much broader leaves, more densely arranged flowers, ciliate-margined bracts and calyx-lobes, and a relatively shorter corolla-spur.

### 3b. *Linaria yunnanensis caerulea*

*Linaria yunnanensis caerulea* var. nov.

A typo speciei differt foliis 1 cm. latis, bracteis sepalisque margine sparse ciliatis; corolla caerulea.

Type, in scrub forest, Mount Peimashan, Mekong-Yangtze divide between Atungtze and Pungtzera, northwestern Yunnan, collected in flower, July 1923, by J. F. Rock, No. 10039; holotype in the United States National Herbarium; isotype in the herbarium of the Academy of Natural Sciences of Philadelphia. Flowers blue. This was the only collection observed.

In the dense inflorescence and the general structure and size of the flowers, this variety agrees with the typical form of *L. yunnanensis*, but it differs prominently in that it has a bluish corolla and narrower leaves. Only specimens in which the inflorescence was not yet fully developed were observed. It may be that a distinct species should be recognized.

## 中國之 *Linaria* 屬 (玄參科)

李 惠 林

玄參科之 *Linaria* 屬為北寒帶之大屬，為種不下百許。在中國僅有三種，茲將其分類加以訂正。*L. vulgaris* 見於華北及東北諸省，且廣佈及歐亞二洲北部。另二種為中國特產，*L. thibetica* 僅產西康。*L. yunnanensis* 見於雲南北部及西康。後者今另立一新變種 var. *caerulea*。與本種之異點在具藍色而非黃色之花冠，葉形較狹，且苞葉及花萼之邊緣密生長毛。今茲僅一見於雲南北部之白馬山，且其花序尚未充分發展。將來標本採集加增，或足證明其有另立新種之可能也。（摘要）