
Delphinium lihengianum (Ranunculaceae), a New Species from
Xizang, China

Luo Yan and Yang Qiner

Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy
of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, People's Republic of China.
luoyan@ns.ibcas.ac.cn; qeyang@ns.ibcas.ac.cn

Guanghua Zhu

Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.

ABSTRACT. *Delphinium lihengianum* Q. E. Yang & Y. Luo, a new species of the Ranunculaceae from Yadong County, Xizang, is described and illustrated. This new species is similar to *D. caeruleum* Jacquemont, especially in the indumentum of the stem and pedicels and in the leaf divisions, but differs in having the staminodes bifid to the middle and three carpels.

Key words: China, *Delphinium*, Ranunculaceae, Xizang.

During the second author's visit to the Royal Botanic Gardens, Kew, from December 2001 to June 2002, the type specimen of *Delphinium nortonii* Dunn (1927), *E. F. Norton 369*, which was collected from the sandy soil above Kampa Dzong, 12 miles north of Sikkim, Xizang, was carefully examined. The sheet includes six perfect, small plant individuals, which have one to three large inflated-globose flowers and black-brown staminodes. Because of these two characters *D. nortonii* should be a member of *D.* subg. *Delphinastrum* (DC.) Petermann sect. *Elatopsis* Huth. However, Wang (1962) placed *D. nortonii* in *D.* subg. *Delphinastrum* sect. *Delphinastrum*, citing only one specimen, *P. C. Tsoong 5950*, from Chumbi, Yadong County, southeastern Xizang, under this species and stating that he did not see its type specimen. This treatment was followed by Wang (1979) and Wang and Wainwright (2001). As the members in section *Elatopsis* are different from those in section *Delphinastrum* in the color of the staminodes, we suspected that the plant referred to *D. nortonii* by Wang (1962), *P. C. Tsoong 5950*, probably represented a misidentification, and thus its identity should be re-determined. Close examination of this specimen in the Herbarium of the Institute of Botany, Chinese Academy of Sciences (PE), which includes two plants mounted on one sheet, has shown that it represents an undescribed species.

Delphinium lihengianum Q. E. Yang & Y. Luo, sp. nov. TYPE: China. Xizang: Yadong County, Chumbi, meadow in forest, July 1953 (fl), *P. C. Tsoong 5950* (holotype, PE). Figure 1.

Herba perennis; caule gracili, 12–22 cm alto, terete, ca. 1 cm diametro, adpresse pubescente, simplici vel 1-ramoso, 2–3-foliato. Folia caulina inferiora longe petiolata; petiolo 3.2–5 cm longo, adpresse pubescente, basi anguste vaginato; lamina utrinque sparse sericea, ambitu orbiculari-pentagona, ca. 3 cm lata, trisecta, partitione centrali rhombica tripartita fere usque ad costam, lobulis linearilanceolatis vel linearibus 1–2 mm latis, partitionibus lateralibus oblique tetragonis inaequaliter 4-partitis fere usque ad basim, lobis inaequaliter bifidis. Folia caulina superiora minora. Flores singuli ad apicem caulis vel apicem rami, 3.3–3.7 cm longi; pedicellis adpresse pubescentibus, infra medium 2-bracteolatis, bracteolis linearibus, 1–3.3 cm longis, sessilibus vel breviter stipitatis; sepalo superiore caeruleo, elliptico vel elliptico-ovato, 1.6–1.8 cm longo, extus pubescente, calcarum cylindrico-subulato, 1.7–1.9 cm longo, recto vel apice leviter deorsum curvato, sepalis lateralibus late ellipticis, ca. 2 cm longis, ca. 10 mm latis, sepalis inferioribus ellipticis, ca. 2 cm longis, ca. 5 mm latis; petalis in sicco brunneo-flavis, glabris, apice emarginatis; staminodiis caeruleis, limbo paulo longiore quam ungue, elliptico-obovato, bifido usque ad medium, margine sparse ciliato, adaxialiter flavido-barbato; staminum filamentis sparse puberulis vel glabris; carpellis 3, dense brunneo-villosis.

Perennial herbs. Stem slender, 12–22 cm tall, terete, ca. 1 cm diam., adpressed pubescent, simple or 1-branched, 2- to 3-leaved. Lower cauline leaves long-petiolate; petiole 3.2–5 cm long, adpressed pubescent, base narrowly vaginate; leaf blade sparsely sericeous on both surfaces, orbicular-pentagonal in outline, ca. 3 cm wide, trisect, central lobe rhombic, tripartite nearly to midvein, lobules linear-lanceolate or linear, 1–2 mm wide, lateral lobes obliquely tetragonal, unequally 4-partite nearly to base, lobules unequally bifid. Upper cauline leaves smaller. Flowers singular at apex of stem or of branch, 3.3–3.7 cm long; pedicel adpressed pubescent, 2-bracteolate below middle;

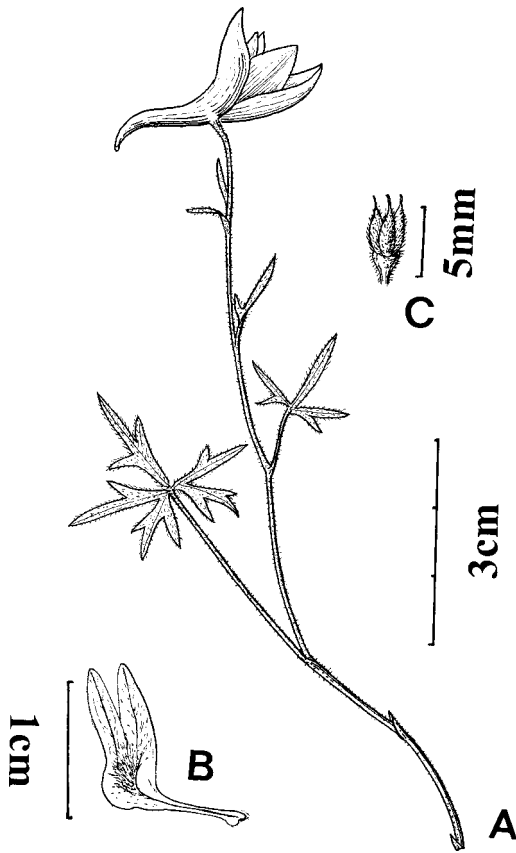


Figure 1. *Delphinium lihengianum* Q. E. Yang & Y. Luo. —A. Habit. —B. Staminode. —C. Carpels. Drawn from the type, P. C. Tsoong 5950 (PE).

bracteoles linear, 1–3.3 cm long, sessile or shortly stipitate. Upper sepal blue, elliptic or elliptic-ovate, 1.6–1.8 cm long, pubescent outside; spur cylindrical-subulate, 1.7–1.9 cm long, straight or apex slightly downcurved; lateral sepals broadly elliptic, ca. 2 × ca. 1 cm; lower sepals elliptic, ca. 2 cm × ca. 5 mm. Petals brown-yellow when dry, glabrous, apex emarginate. Staminodes blue; limb slightly longer than claw, elliptic-obovate, bifid to middle, margin sparsely ciliate, ventrally yellow barbate. Stamen filaments sparsely puberulous or glabrous. Carpels 3, densely brown villose.

Distribution and habitat. *Delphinium lihengianum* is only known from its type locality, Yadong County in southeastern Xizang, China, a border area between China, Bhutan, and Sikkim, which is not easily accessible. According to the collector's

note, this species grows in meadows in forest. Fieldwork needs to be done to know more about the habitat of this species.

Taxonomic remarks. *Delphinium lihengianum* is possibly related to *D. caeruleum* in usually having a slender and adpressed pubescent stem, adpressed pubescent pedicels, and 3-sect leaves with linear or linear-lanceolate lobules, but differs in having staminodes bifid to the middle and three carpels. Its systematic position is far from *D. nortonii*, which is distinguishable by its one to three large inflated-globose flowers and black-brown staminodes. In the original description, Dunn did not mention the color of the staminodes, an important character in the classification of the genus *Delphinium*. Our new species, *D. lihengianum*, which has 3-sect leaves with linear or linear-lanceolate lobules, blue staminodes, and the flower solitary at the apex of the main stem or branch, should be a member of subgenus *Delphinastrum* sect. *Delphinastrum* ser. *Caerulea* W. T. Wang.

This species is named in honor of Professor Li Heng from the Kunming Institute of Botany, Chinese Academy of Sciences, who provided valuable guidance for the second author's professional career.

Acknowledgments. We are most grateful to Wang Wentsai, professor at the Institute of Botany, Chinese Academy of Sciences, for his direction in writing this paper. The second author thanks the Keepers of K and PE for permission to examine specimens or for the loan of material. We thank Nick Turland for his comments on the manuscript and Sun Yingbao for the illustration. This work was supported by the National Natural Science Foundation of China (Grant No. 30070057) and a Key Project of Chinese Academy of Sciences (KSCXZ-SW-101A).

Literature Cited

- Dunn, S. T. 1927. Plantarum novarum in Herbario Horti Regii conservatarum. Bull. Misc. Inform. Kew 1927: 247.
- Wang, W. T. 1962. Critical review of the genus *Delphinium* from the ranunculaceous flora of China (continued II). Acta Bot. Sin. 10: 264–283.
- . 1979. *Delphinium*. Pp. 326–462 in Flora Reipublicae Popularis Sinicae, Vol. 27. Science Press, Beijing.
- & M. J. Warnock. 2001. *Delphinium*. Pp. 223–274 in Z. Y. Wu & P. H. Raven (editors), Flora of China, Vol. 6. Science Press, Beijing, & Missouri Botanical Garden Press, St. Louis.