

中国毛茛科翠雀属的分类学研究(十四): 光序翠雀花二新异名

袁琼, 杨亲二*

(中国科学院华南植物园, 中国科学院植物资源保护与可持续利用重点实验室, 广州 510650)

摘要: 广布于中国-喜马拉雅地区的毛茛科光序翠雀花(*Delphinium kamaonense* Huth)在我国甘肃、青海、四川和西藏具有相当连续的分布区, 在分布区内颇为常见, 几为杂草。通过标本室和野外观察, 发现根据西藏波密、察隅标本描述的展毛光序翠雀花[*D. kamaonense* var. *glabrescens* (W. T. Wang) W. T. Wang]和根据西藏类乌齐标本描述的倒心形翠雀花(*D. obcordatilimbum* W. T. Wang)与光序翠雀花没有本质区别, 故将二者均处理为光序翠雀花的异名。

关键词: 翠雀属; 毛茛科; 分类学

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Taxonomic Studies on the Genus *Delphinium* (Ranunculaceae) from China (XIV): Two New Synonyms of *D. kamaonense*

YUAN Qiong, YANG Qin-er*

(Key Laboratory of Plant Resources Conservation and Sustainable Utilization, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou 510650, China)

Abstract: The widespread Sino-Himalayan *Delphinium kamaonense* Huth is a very common species of weedy nature in Gansu, Qinghai, Sichuan and Xizang, China, with its distribution being nearly continuous. Examination of both herbarium specimens and living plants has shown that *D. kamaonense* var. *glabrescens* (W. T. Wang) W. T. Wang described from Bomi and Zayu in southeastern Xizang and *D. obcordatilimbum* W. T. Wang described from Riwoqe also in southeastern Xizang are not essentially different from *D. kamaonense*. Therefore, both *D. kamaonense* var. *glabrescens* and *D. obcordatilimbum* are reduced to the synonymy of *D. kamaonense*.

Key words: *Delphinium*; Ranunculaceae; Taxonomy

The aim of this paper is to clear up a certain amount of confusion about *Delphinium kamaonense* Huth, a species widely distributed in the Sino-Himalayan region and very common in Gansu, Qinghai, Sichuan and Xizang, China. For the convenience of discussion we will review the problem chronologically.

In 1962, Wang^[1] described *Delphinium pseudograndiflorum* W. T. Wang (Ranunculaceae) on the

basis of a series of specimens from southeastern Xizang and western Sichuan, China, with X. Li 74016 (PE) from Heishui in western Sichuan designated as the holotype. In the protologue, he stated that *D. pseudograndiflorum* was most closely similar to *D. grandiflorum* L., but differed in the very sparsely spreading puberulent stem. In the same paper, he also described *D. pseudograndiflorum* var. *glabrescens* W. T. Wang on the basis of two collections from south-

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* Corresponding author. E-mail: qeyang@scib.ac.cn

eastern Xizang, i.e., G. C. Xia 518 (IDM) from Bomi and G. C. Xia & T. K. Mi 336 (IDM) from Zayu, with the latter designated as the holotype, and stated that it was distinguishable from the type variety, var. *pseudograndiflorum*, by the glabrous stem and pedicels.

In describing the two taxa just mentioned above, it is evident that Wang was unaware of the occurrence of *D. kamaonense* in China, a species which was originally described from Kamaon (Kumaun) in northwestern India (Fig. 1). It was till 1979 that Wang^[2] found *D. pseudograndiflorum* was conspecific with *D. kamaonense* and thus made the correct treatment of merging them, but he still retained *D. pseudograndiflorum* var. *glabrescens* as an independent taxonomic entity, transferring it to *D. kamaonense* and making the combination *D. kamaonense* var. *glabrescens* (W. T. Wang) W. T. Wang.

In 1979, Wang^[3] described *Delphinium obcordatilimbium* W. T. Wang on the basis of a collection, Qinghai-Xizang Veg. Exped. 9213 (Fig. 2), from Riwoke, southeastern Xizang, China. He compared it with *D. majus* (W. T. Wang) W. T. Wang from northwestern Yunnan, stating that *D. obcordatilimbium* was different from that species by the leaves tripartite to 4 mm from the base, the glabrous inflorescence axis, the distally sparsely puberulent pedicels, and the obcordate staminode limbs.

Based on a survey of ample herbarium material, we found that *Delphinium kamaonense* is widely distributed in China (Gansu, Qinghai, western Sichuan, Xizang), with the distribution being nearly continuous. In our field work, we found that in the Qinghai-Xizang Plateau, the species is a very common, nearly weedy plant. It is easily recognizable by the stem usually densely spreading white puberulent in the lower part, sparsely spreading white puberulent or glabrous in the median and upper parts; pedicels more or less densely puberulent distally but glabrous or sparsely spreading white puberulent elsewhere; basal and median leaves often 3-fid or 3-parted with the segments cuneate or narrower, these lacinate into oblong or linear lobules; upper leaves finely dissected into linear lobules; flowers usually deep blue; spur of

the upper sepal cylindrical-subulate, straight or slightly upcurved (Figs. 1–6). It is noteworthy that in the genus *Delphinium* L., just as in its close ally *Aconitum* L., the pedicel pubescence is one of the most stable and thus most reliable taxonomic characters at specific level (or, in some cases, at infraspecific level), whereas the stem pubescence is often highly variable between and within populations of a given taxon.

Careful comparison of the type specimens of *Delphinium kamaonense* var. *glabrescens* and *D. obcordatilimbium* with the rich material of *D. kamaonense* from China has convinced us that the three names encompass only one taxonomic entity. The former two taxa totally fall within the range of morphological variation of the latter and thus are not worthy of recognition. During our botanical expedition to Xizang in 2005, we found that *D. kamaonense* is very common in Riwoke, the type locality of *D. obcordatilimbium*. It is far from understandable to us that in describing *D. obcordatilimbium* Wang^[3] has bothered to contrast it with *D. majus* from northwestern Yunnan, but not conveniently with *D. kamaonense*, which is such a common plant in Xizang. In our opinion, *D. majus* itself is not a well-established species and its identity needs further verification; it is very closely similar to or most likely even conspecific with *D. tatsienense* Franch., a species widely distributed in western Sichuan and central and northern Yunnan. It is also very difficult to distinguish *D. majus* from *D. mosoynense* Franch., which is common in northwestern Yunnan.

Based on the above analyses we consider it justifiable to reduce both *Delphinium kamaonense* var. *glabrescens* and *D. obcordatilimbium* to the synonymy of *D. kamaonense*.

Taxonomic treatment

Delphinium kamaonense Huth in Bull. Herb. Boiss. 1: 333.1893; Munz in J. Arn. Arb. 48: 521. 1967; W. T. Wang in Fl. Reipubl. Popularis Sin. 27: 448. 1979; et in Fl. Xizang. 2: 56. 1985; W. T. Wang & Warnock in Fl. China 6: 269. 2001. Type: India:



Fig. 1 Type specimens of *Delphinium kamaonense*. A: J. F. Duthie 2675 (syntype, K), Dharma, Kumaon (Kumaun), India; B: J. F. Duthie 2675 (syntype, E).



Fig. 2 Specimens of *Delphinium kamaonense*. A: Qinghai-Xizang Veg. Exped. 9213 (holotype of *D. obcordatilimbium*, PE), Riwoqe, Xizang, China; B: Qinghai-Xizang Veg. Exped. 9213 (isotype of *D. obcordatilimbium*, PE).

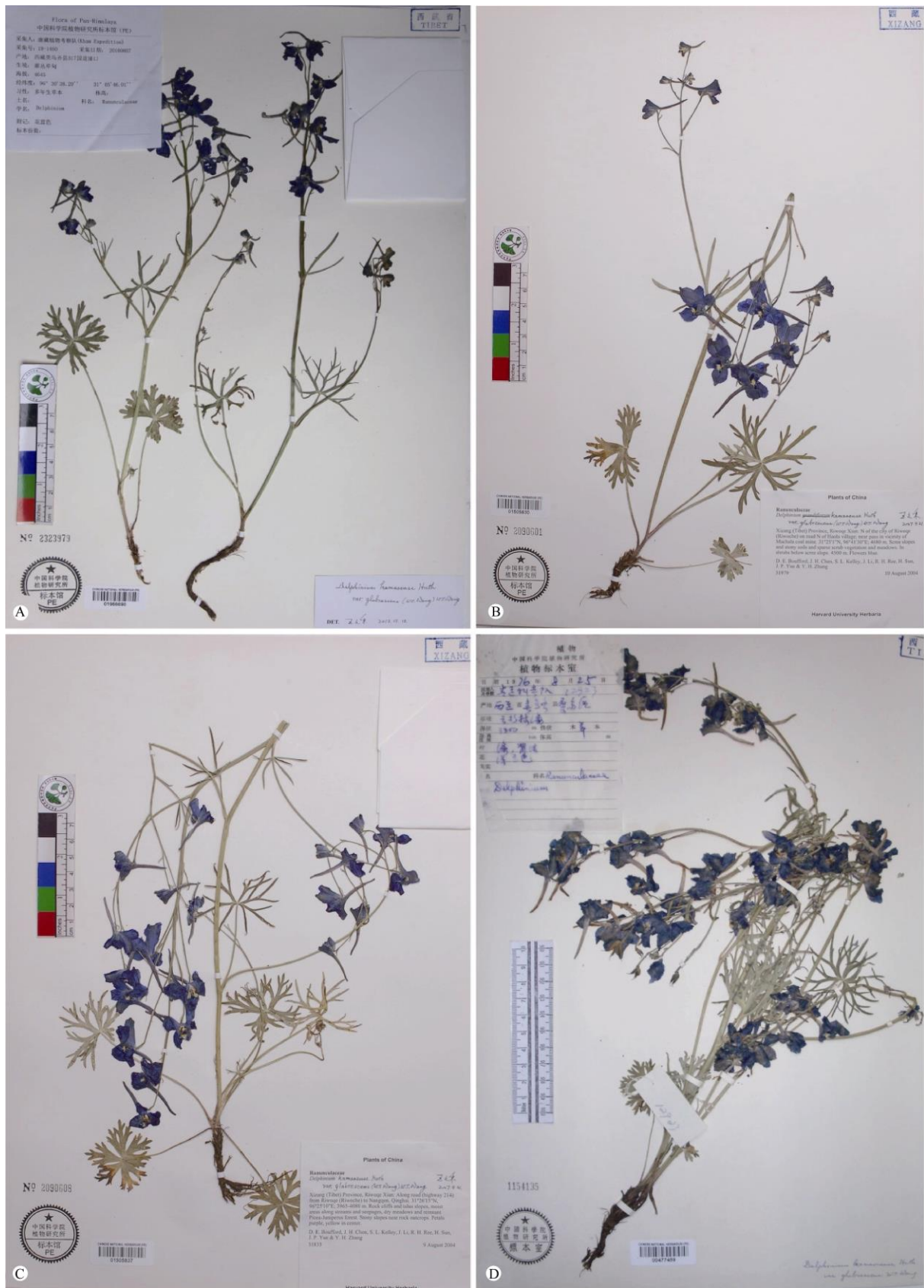




Fig. 4 Specimens of *Delphinium kamaonense*, all from Qamdo, Xizang, China. A: D. E. Boufford et al. 32462 (PE); B: D. E. Boufford et al. 32532 (PE); C: Y. T. Chang & K. Y. Lang 2815 (PE); D: D. E. Boufford et al. 29552 (PE).

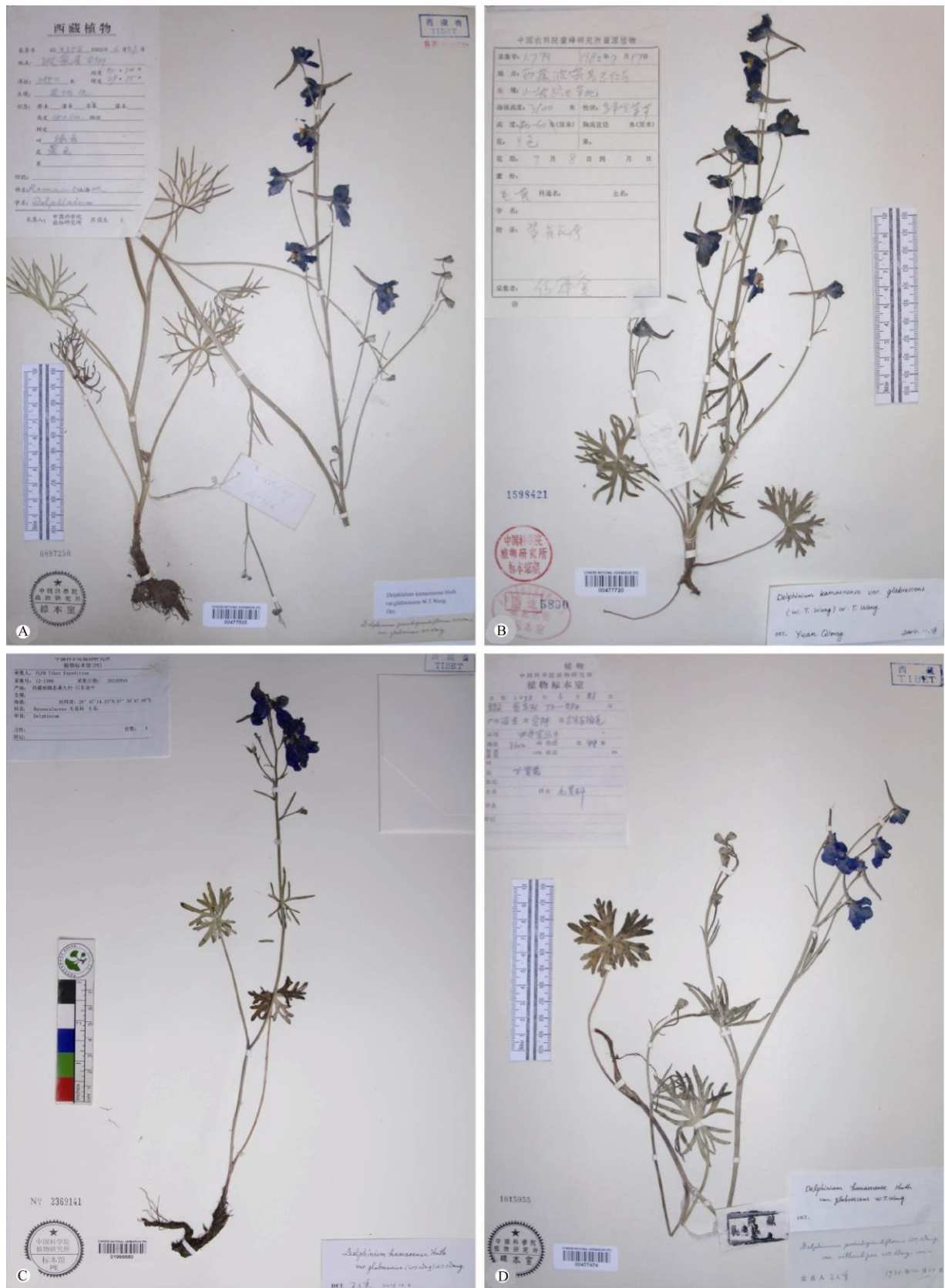


Fig. 5 Specimens of *Delphinium kamaonense*, respectively from Bomi [A, B; paratype locality of *D. kamaonense* var. *glabrescens* W. T. Wang (W. T. Wang)] and Zayu (C, D; holotype locality of *D. kamaonense* var. *glabrescens*), Xizang, China. A: T. S. Ying & D.Y. Hong 650356 (PE); B: Z. J. Ren 799 (PE); C: FLPHT Tibet Exped. 12-1388 (PE); D: Qinghai-Xizang Exped. 73-280 (PE).

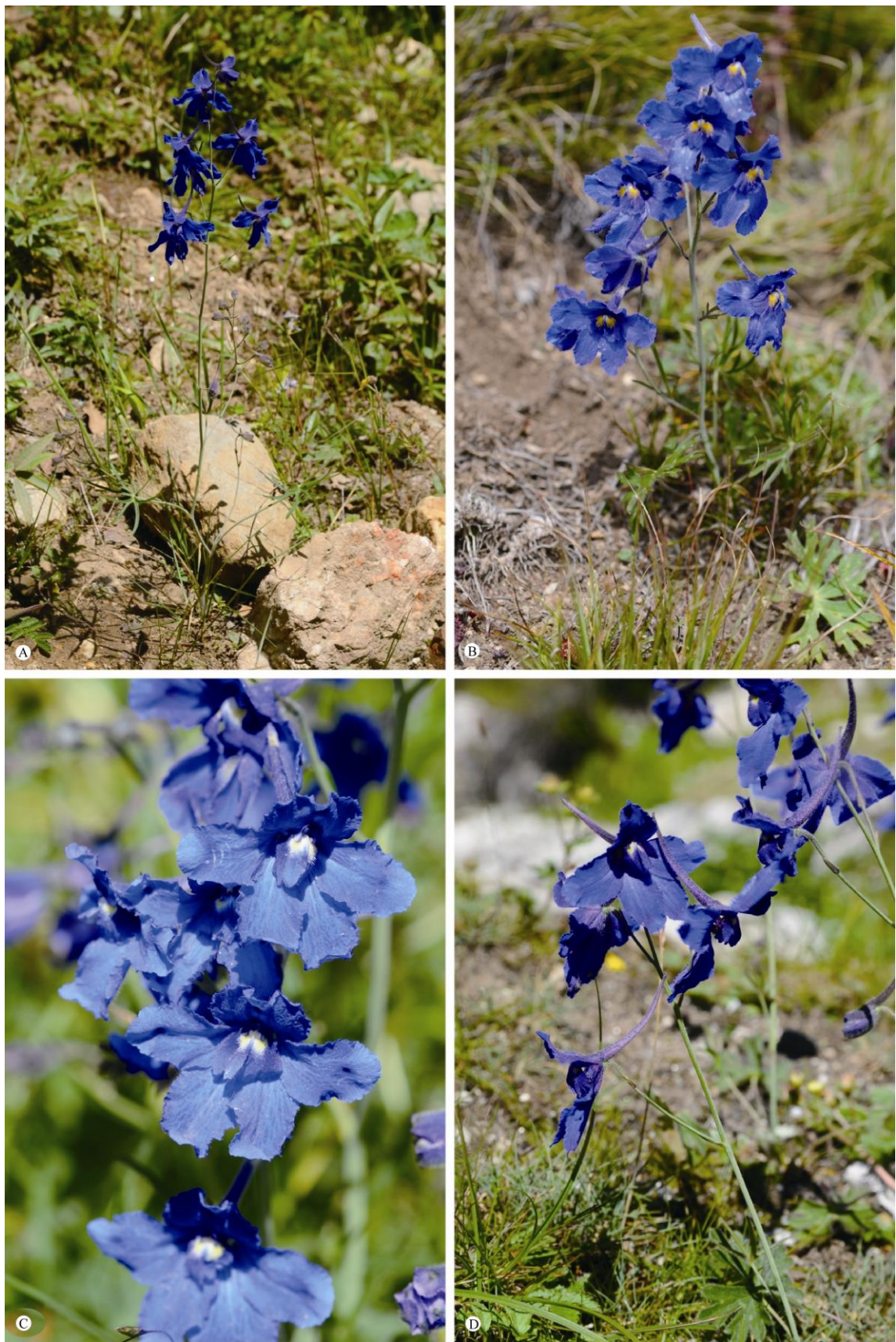


Fig. 6 *Delphinium kamaonense* in the wild. A, B: Habitat and habit; C, D: Portion of inflorescence. Photos by Y. S. Chen from Cona (A, D), Nyalam (B) and Qamdo (C), Xizang, China.

Kamaon (Kumaun), Nipshany Valley in Darma, 4300–4600 m, Aug. 31, 1884, J. F. Duthie 2675 (syntypes, probably G, E!; K!).

D. sordidecaerulescens Ulbr. in Notizbl. Bot. Gart. Berl. **12**: 358. 1935; Munz in J. Arn. Arb. **48**: 534. 1967. — *D. tatsienense* f. *sordidecaerulescens* (Ulbr.) Hand.-Mazz. in Acta. Hort. Gothob. **13**: 61. 1939. Type: China. Sichuan: reg. bor. Huang-chen-kuan, in prato, 3400 m, H. Smith 3983 (holotype, UPS).

D. pseudograndiflorum W. T. Wang in Acta Bot. Sin. **10**: 275. 1962; Munz in J. Arn. Arb. **48**: 530. 1967, p. p.. Type: China. Sichuan: Heishui, grassland at mountain top, 3300 m, Aug. 16, 1957, X. Li 74016 (holotype, PE!; isotypes, NAS!, SZ!).

D. pseudograndiflorum var. *glabrescens* W. T. Wang in Acta Bot. Sin. **10**: 275. 1962. — *D. kamaonense* var. *glabrescens* (W. T. Wang) W. T. Wang in Fl. Reipubl. Popularis Sin. **27**: 449. 1979; et in Fl. Xizang. **2**: 58. 1985; et in Vas. Pl. Hengduan Mount. **1**: 492. 1993; L. H. Zhou in Fl. Qinghai. **1**: 316. 1997; W. T. Wang & Warnock in Fl. China **6**: 269. 2001. **syn. nov.** Type: China. Xizang: Zayu, G. C. Xia & K. T. Mi 336 (holotype, IDM!).

D. pseudograndiflorum var. *lobatum* W. T. Wang in Acta Bot. Sin. **10**: 275. 1962. Type: China. Xizang: Qamdo, Aug. 11, 1951, Y. W. Tsui 5224 (holotype, PE!).

D. obcordatilimbium W. T. Wang in Fl. Reipubl. Popularis Sin. **27**: 616. 1979; et in Fl. Xizang. **2**: 56. 1985; Wang & Warnock in Fl. China **6**: 267. 2001. **syn. nov.** Type: China. Xizang: Riwoqe, 3850 m, Jul. 21, 1976, Qinghai-Xizang Veg. Exped. 9213 (holotype, PE!; isotype, PE!).

Additional specimens examined. **Gansu:** Jone, W. Y. Hsia 8381 (WUK), T. P. Wang 5572 (PE, WUK); Luqu, Tao River Exped. 427 (KUN), Xiahe, K. T. Fu 1486 (IBSC, PE, WUK), Tao River Exped. 041 (KUN), Q. R. Wang & M. S. Yan 10643 (PE), 10738 (PE); Tao River basin, J. F. Rock 13178 (NAS, PE), 14594 (NAS). **Qinghai:** Chindu, Anonymous 726 (PE), S. W. Liu 00494 (PE), 2463 (HNWP), Q. E. Yang & Q. Yuan 419 (PE); Henan, S. W. Liu 1934

(HNWP); Jigzhi, D. E. Boufford et al. 39466 (PE), Xizang Med. Pl. Exped. 632 (HNWP); Maqen, T. N. Ho et al. 437, Y. H. Wu 4633 (HNWP); Nangqen, P. C. Kuo & W. Y. Wang 8385 (HNWP), Xizang Med. Pl. Exped. 1038 (HNWP, PE), 1188 (PE), Y. C. Yang 1189 (HNWP, PE, WUK), Z. D. Wei 21913 (HNWP), 22089 (HNWP); Tongde, Y. H. Wu 5372 (HNWP); Tongren, P. C. Kuo 25892 (HNWP), S. W. Liu 3561 (HNWP), Q. E. Yang 9516 (PE); Yushu, Anonymous 388 (HNWP, PE, WUK), T. N. Ho et al. 1972 (PE), 2044 (PE), B. Ren 014 (PE), 033 (PE), Q. E. Yang & Q. Yuan 428 (PE), 431 (PE); Zhidui, T. N. Ho et al. 1720 (PE). **Sichuan:** Aba, D. E. Boufford et al. 39432 (PE), X. Li 72042 (IBSC, NAS, PE); Baiyu, D. E. Boufford et al. 37004 (PE), H. Y. Li 139 (PE), Z. X. Tang et al. 770 (PE), H. S. Ye s.n. (PE); Barkam, X. Li 71757 (IBSC, NAS, PE), 72254 (IBSC, NAS, PE), Sichuan Med. Pl. Resour. Exped. 22806 (NAS), Sichuan Veg. Exped. 9528 (CDBI, IBSC, PE); Batang, Anonymous 1545 (PE), 1667 (PE), D. E. Boufford 35550 (PE), K. Y. Lang et al. 2392 (KUN, PE), K. Yao 891 (NAS); Dawu, Anonymous 5689 (CDBI, PE), 5789 (PE), 5871 (CDBI, PE), W. K. Hu & Z. He 10877 (PE), 10905 (PE), S. Jiang et al. 9601 (PE), Sichuan Med. Pl. Resour. Exped. 15758 (NAS); Dege, D. E. Boufford et al. 36400 (PE), 36421 (PE), 36700 (PE), S. X. Jia s.n. (PE), 133 (PE), Sichuan Veg. Exped. 7345 (PE), Z. X. Tang et al. 609 (PE), Y. W. Tsui 5030 (PE); Derong, X. W. Tian 095 (PE); Garze, D. E. Boufford 36332 (PE), W. K. Hu 13106 (PE), S. Jiang et al. 9601 (PE), Sichuan Med. Pl. Resour. Exped. 15145 (NAS), Y. W. Tsui 4942 (PE), T. S. Ying 4545 (PE); Heishui, X. Li 73446 (PE), 73654 (IBSC, NAS, PE); Hongyuan, Anonymous 23636 (NAS, PE), D. E. Boufford et al. 40023 (PE), 40051 (PE), X. Li 2153 (NAS, PE), 72086 (IBSC, NAS, PE), 72101 (IBSC, PE), B. C. Ni 00284 (CDBI), Sichuan Med. Pl. Resour. Exped. 20655 (NAS), Y. C. Tang et al. 20 (NAS, PE), Z. X. Tang 1710 (PE), 1778 (PE), Q. E. Yang & Q. Yuan 307 (PE), 310 (PE), K. Yao 610 (NAS), Q. S. Zhao 0261 (P, PE); Kangding, W. K. Hu 13106 (PE), J. A. Soulié 2389 (P), 2389a (P), Q. E. Yang & Q. Yuan 260 (PE); Litang, D. E. Boufford et

al. 42258 (PE), Hengduan Shan Veg. Exped. 4954 (PE), Lixian, Anonymous 33576 (PE), D. P. He 45697 (HNWP, WUK), 45823 (HNWP, IBSC, WUK), E. L. Liu 9 (PE), Y. Luo 328 (PE), 331 (PE), Q. S. Zhao 1241 (PE); Luhuo, D. E. Boufford 33496 (PE), 34250 (PE), 34743 (PE); Nanping, Sichuan Econ. Pl. Exped. 4114 (CDBI), Q. E. Yang 92020 (PE); Pingwu, L. M. Lu 2008355 (PE); Sertar, D. E. Boufford et al. 34568 (PE), J. H. Feng 06708 (CDBI, PE); Serxu, X. H. Hu 28363 (CDBI); Songpan, Anonymous 9528 (CDBI), Sichuan Econ. Pl. Exped. 4114 (CDBI), X. N. Tang 01013 (CDBI), 00758 (CDBI), Q. E. Yang & Q. Yuan 310 (PE), Y. B. Yang 0758 (CDBI); Tianquan, H. L. Tsiang 173 (IBSC, NAS, PE); Xiaojin, S. S. Chang & Y. X. Ren 6039 (PE), 6259 (CDBI), 6462 (CDBI, PE), Q. E. Yang & Q. Yuan 292 (PE), 296 (PE); Xinlong, Q. W. Meng & H. Y. Xie s.n. (PE); Zamtang, D. E. Boufford et al. 38916 (PE), 39038 (PE), 39084 (PE); Zoige, Anonymous 10276 (PE), D. E. Boufford 39954 (PE), G. C. Chen et al. 1331 (HNWP), X. Q. Li 0317 (CDBI), Sichuan Med. Pl. Resour. Exped. 20104 (NAS), 20395 (NAS), D. H. Zhu et al. 4604 (PE), 4628 (PE). **Xizang:** Baqen, D. E. Boufford et al. 29985 (PE), D. D. Tao 11076 (KUN, PE); Baxoi, Anonymous 929 (PE), D. E. Boufford 29694 (PE), C. C. Ni et al. 1255 (PE), Qinghai-Xizang Exped. 73-1166 (PE), Z. J. Ren s.n. (PE); Bomi, Anonymous 518 (KUN), Biol. Inst. Xizang Exped. 685 (HNWP), 710 (HNWP), Y. T. Chang & K. Y. Lang 323 (PE), 328 (PE), 463 (PE), Qinghai-Xizang Exped. 73-126 (KUN, PE), Z. J. Ren 799 (PE), L. Xie BM11 (PE), T. S. Ying & D. Y. Hong 650356 (PE), 651114 (PE), J. W. Zhang 1735 (PE); Burang, Biol. Inst. Xizang Exped. 3889 (HNWP), 4038 (HNWP, PE), FLPH Tibet Exped. 12-0099 (PE), Qinghai-Xizang Exped. 13009 (PE), 13279 (PE), 76-116 (PE), 76-8240 (PE), 76-8488 (PE); Chagyab, Qinghai-Xizang Exped. 12340 (PE), 13003 (PE); Cona, Y. S. Chen et al. 13-0913 (PE), P. C. Kuo & W. Y. Wang 22822 (NAS), Qinghai-Xizang Veg. Exped. 2359 (PE), Suppl. Qinghai-Xizang Exped. 751714 (KUN, PE), 751795 (KUN, PE); Dengqen, J. S. Yang 91 (PE), 91-823 (KUN, PE); Gongbo'gyamda, Y. T. Chang & K. Y. Lang 2745 (PE), Qinghai-Xizang

Exped. 7761 (PE), Q. E. Yang & Q. Yuan 503 (PE), 506 (PE), J. S. Yang 89-058 (IBSC, KUN), 89-059 (PE), 90-314 (PE), 90-642 (IBSC, KUN); Gyirong, Y. S. Chen et al. 288 (PE), S. Jiang et al. 283 (PE), B. S. Li et al. 13441 (PE), C. C. Ni et al. 2272 (PE), Qinghai-Xizang Exped. 5626 (PE), 5709 (PE), 7041 (PE), 7084 (PE), 7180 (PE), Xizang Med. Pl. Exped. 679 (PE); Jomda, D. E. Boufford et al. 31231 (PE), 31258 (PE), 31578 (PE), 33840 (PE), Qinghai-Xizang Exped. 12486 (PE), Y. W. Tsui 5289 (PE), Q. E. Yang & Q. Yuan 463 (PE), 467 (PE); Lhorong, Qinghai-Xizang Exped. 8968 (PE); Lhozhag, Y. S. Chen et al. 13-1549 (PE), Mainling, Qinghai-Xizang Exped. 74-3725 (PE), 74-4629 (PE); Markam, Qinghai-Xizang Exped. 005226 (CDBI, KUN, PE); Nagarze, Qinghai-Xizang Exped. 7694 (PE); Nyalam, FLPH Tibet Exped. 12-0371 (PE), Xizang Med. Plant Exped. 1685 (HNWP, PE), 1688 (PE); Nyingchi, Anonymous 2193 (PE), 2367 (KUN), Y. T. Chang & K. Y. Lang 1223 (PE), 953 (PE), J. Luo et al. ML093 (PE), Suppl. Qinghai-Xizang Exped. 751277 (KUN, PE), Xizang Med. Pl. Exped. 3541 (HNWP, PE), C. Y. Wu et al. 75-1190 (KUN); Qamdo, Biol. Inst. Xizang Exped. 1964 (HNWP), 2255 (HNWP), Y. T. Chang & K. Y. Lang 2815 (PE), D. E. Boufford et al. 29552 (PE), 32462 (PE), 32532 (PE), Qinghai-Xizang Exped. 12619 (PE), 12636 (PE), 73-84 (KUN, PE), Q. E. Yang & Q. Yuan 475 (PE), X. Y. Zhu & Y. F. Du 20085 (PE); Riwoqe, D. E. Boufford et al. 31833 (PE), 31979 (PE), 40990 (PE), Kham Exped. 10-1460 (PE), Qinghai-Xizang Exped. 12909 (PE), 12923 (PE), Q. E. Yang & Q. Yuan 478 (PE), 479 (PE); Sog, D. D. Tao 10913 (KUN, PE), 10930 (KUN, PE); Zayu, Biol. Inst. Xizang Exped. 1237 (HNWP), 1320 (HNWP), FLPH Tibet Exped. 12-1388 (PE), R. F. Huang 480 (HNWP), X. H. Jin et al. ST2435 (PE), ST2454 (PE), ST2539 (PE), ST2562 (PE), B. S. Li et al. 07233 (PE), C. C. Ni et al. 1030 (PE), Qinghai-Xizang Exped. 73-280 (PE), J. W. Zhang 1737 (PE); Zogang, Anonymous 76-59 (PE), 76-591 (PE), Qinghai-Xizang Exped. 11005 (PE), 12909 (KUN).

Notes. From a morphological perspective, the closest ally of *Delphinium kamaonense* may be *D.*

yuanum Chen, a species quite common in northwestern Yunnan and also occurring in the adjacent southwestern Sichuan (Daocheng, Xiangcheng) and southeastern Xizang (Zayu)^[4]. *Delphinium yuanum* is different from *D. kamaonense* mainly in the glabrous stem, inflorescence axis and pedicels. These two species seem to be

vicarious geographically.

Distribution and habitat. *Delphinium kamaonense* is distributed in China (Gansu, Qinghai, Sichuan, Xizang; Fig. 7), northwestern India and Nepal. It grows on grassy slopes or in meadows at altitudes of 2500–4600 m.

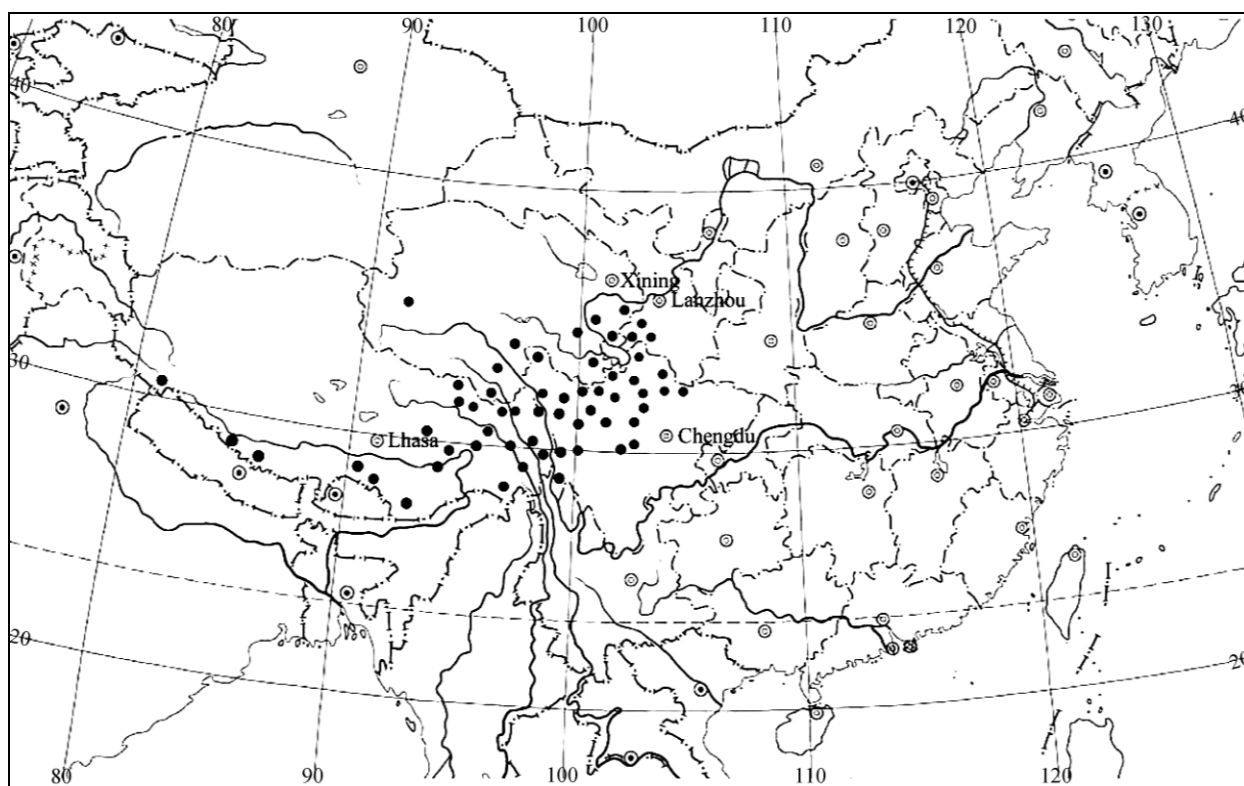


Fig. 7 Distribution of *Delphinium kamaonense* in China (●).

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