

中国毛茛科翠雀属的分类学研究(十一): 巴唐翠雀花二新异名

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摘要: 毛茛科巴唐翠雀花(*Delphinium batangense* Finet & Gagnep.)是我国四川西部和云南西北部一种较广布的高山植物, 形态变异颇大。标本室和野外观察表明白缘翠雀花(*D. chenii* W. T. Wang)和雅江翠雀花(*D. yajiangense* W. T. Wang)在形态上处于该种的变异范围之内, 故将二者均处理为巴唐翠雀花的异名。

关键词: 毛茛科; 翠雀属; 分类学

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

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Abstract: *Delphinium batangense* Finet & Gagnep. (Ranunculaceae) is an alpine species widely distributed in western Sichuan and northwestern Yunnan, China, and highly variable morphologically. Examination of both herbarium specimens and living plants has shown that *D. chenii* W. T. Wang and *D. yajiangense* W. T. Wang fall within the variation range of *D. batangense*. Therefore, *D. chenii* and *D. yajiangense* are both placed in synonymy with *D. batangense* herein.

Key words: *Delphinium*; Ranunculaceae; Taxonomy

Delphinium batangense Finet & Gagnep. (Ranunculaceae) was described by Finet and Gagnepain^[1] in 1904 on the basis of four collections, J. A. Soulié 3040 (P; Fig. 1: A), 3041 (P; Fig. 1: B), 3042 bis (P; Fig. 1: C, D), and 3043 (P; Fig. 2), from Batang, western Sichuan, China. Another seven collections from the same area, J. A. Soulié 3042 (P), 3898 (P; Fig. 3: A), 3899 (P; Fig. 3: B), 3901 (P), 3905 (P), 3906 (P; Fig. 3: C, D), and 3907 (P), undoubtedly also all belong to the species, although Finet and Gagnepain did not cite them. From these

specimens it can be easily seen that *D. batangense* is highly variable in stature and in the degree of leaf division. The stems are semi-procumbent or erect, ranging from ca. 10–50 cm in height. Leaves are 3-parted to base or almost so into obtuse parts, these deeply cut or dentate, with lanceolate-oblong laciniae 2–5 mm wide and obtuse at apex. Closer examination of these specimens and recent collections, together with our observations in the field, shows that the shape and position of bracteoles are also not stable within and between populations in the species. The

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bracteoles are undivided, linear or oblong, or 2–5-lobate, positioned variously on the pedicels from subtending the flower to being distant from it (Fig. 4). The degree of hairiness on the stems is also variable in the species. The stems are sparsely or densely appressed pubescent, but often glabrescent, particularly so in the median part of robust individuals. The pedicels, however, are always densely pubescent. In the protologue of *D. batangense*, Fine and Gagnepain did not note the color of staminodes, one of the most important characters for the classification of the genus *Delphinium* L. As a result, they compared the species with *D. likiangense* Franch., in which the staminodes are blue. The staminodes of *D. batangense* are usually black, although sometimes blue at margin (Fig. 5). In fact, the two species are morphologically very readily distinguishable from each other. Wang^[2] in 1979 placed *D. batangense* into subsection *Subumbellata* Huth under section *Elatopsis* Huth but *D. likiangense* into subsection *Ceratophora* W. T. Wang under section *Delphinastrum* DC. Species in the former section have black staminodes, whereas those in the latter have blue staminodes.

In 1957, Wang^[3] described *Delphinium pulcherrimum* W. T. Wang on the basis of two collections, T. T. Yu 9330 (A, KUN, PE; Fig. 6) and C. W. Wang 69533 (KUN, PE), from Baima Shan, Deqen, northwestern Yunnan, China. In 1979, Wang^[2] himself correctly reduced it to the synonymy of *D. batangense*. From our understanding of the morphology of *D. batangense*, we consider that both *D. chenii* W. T. Wang and *D. yajiangense* W. T. Wang also fall within its variation range.

Chen^[4] in 1948 described *Delphinium albo-marginatum* Chen based on a collection, T. T. Yu 12809 (KUN, PE; Fig. 7), from Daocheng, western Sichuan, China. In the protologue he compared it with *D. taliense* Franch., a species with blue staminodes. In 1957, Wang^[3] found that the specific epithet “*albo-marginatum*” had been applied in 1924 to a central Asian species of *Delphinium*, *D. albo-marginatum* Simonova, and thus proposed *D. chenii* as a replacement name. In his remarks on *D. chenii*, Wang

agreed with Chen that the species was close to *D. taliense*, but pointed out that it was also similar to *D. hamatum* Franch. in leaf shape. He stressed that the petals and staminodes in *D. taliense* and *D. hamatum* were blue, but black in *D. chenii*. In 1979, however, Wang^[2] changed his opinion on the affinities of *D. chenii*, placing *D. chenii* into subsection *Subumbellata* under section *Elatopsis* but both *D. taliense* and *D. hamatum* into subsection *Ceratophora* under section *Delphinastrum*. The two sections, as mentioned above, are markedly different in staminode color.

Delphinium yajiangense was described by Wang^[5] in 1986 based on a collection, Anonymous 349 (KUN, NAS; Fig. 8), from Yajiang, western Sichuan, China. In the protologue he compared it with *D. pylozowii* Maxim. var. *trigynum* W. T. Wang, a taxon widely distributed in southeastern Gansu, Qinghai, northwestern Sichuan, southeastern Xizang, pointing out that they were different in the degree of leaf dissection and in the bracteole shape, flower size and ovary pubescence: in *D. pylozowii* var. *trigynum* the leaves were finely dissected, with the ultimate lobules linear; bracteoles were sessile, linear; flowers were larger, with sepals 1.4–2.2 cm long; ovaries were sparsely spreading puberulent, whereas in *D. yajiangense* the leaves were 3-parted near to base, with the ultimate lobules narrowly ovate; bracteoles were petiolate, narrowly elliptic, oblanceolate or linear; flowers were smaller, with sepals 1.1–1.2 cm long; ovaries were densely appressed puberulent.

After careful examination of the type specimens of *Delphinium chenii* and *D. yajiangense* against those of *D. batangense* and other collections (Figs. 9–11), we are convinced that the three names encompass only one taxonomic entity. Although the flowers of the type collection of *D. chenii* were recorded as “outer perianth violet blue, inner ones bluish white” on the field label, Chen^[4] described its sepals, under the name *D. albo-marginatum*, as white at margin (hence the specific epithet “*albo-marginatum*”). Wang^[3] also accepted this as a diagnostic character for *D. chenii*. A recent gathering, Y. Luo 410 (PE; Fig. 9: A, B), from Daocheng, the type locality of *D. chenii*, was recorded



Fig. 1 Type specimens of *Delphinium batangense*. A: J. A. Soulié 3040 (syntype, P), Batang, Sichuan, China; B: J. A. Soulié 3041 (syntype, P), same locality; C: J. A. Soulié 3042 bis (lectotype, P), same locality; D: J. A. Soulié 3042 bis (isolectotype, P).



Fig. 2 Type specimens of *Delphinium batangense*. A, B: J. A. Soulié 3043 (syntypes, P), Batang, Sichuan, China.

to have bluish flowers on the field label, indicating that the sepals of the populations from that area do have a faint white tinge, but we deem this slight variation in sepal coloration not sufficient to warrant species recognition. In fact, as shown in Figure 12, intraspecific variation in flower color is not an uncommon phenomenon in the genus *Delphinium*. As to *D. yajiangense*, Wang^[5] compared it with *D. pylozowii* var. *trigynum* and stressed their differences in the degree of leaf dissection and in the flower size, but when comparing it with *D. batangense* it is not essentially different in any characters.

From the above analyses we consider it is reasonable to place *Delphinium chenii* and *D. yajiangense* in synonymy with *D. batangense*.

Taxonomic treatment

Delphinium batangense Finet & Gagnep. in Bull.

Soc. Bot. France **51**: 478. 1904; W. T. Wang in Acta Bot. Sin. **10**: 77. 1962; Munz in J. Arn. Arb. **48**: 505. 1967; W. T. Wang in Fl. Reipubl. Popularis Sin. **27**: 374. 1979; et in Vas. Pl. Hengduan Mount. **1**: 481. 1993; et in Fl. Yunnan. **11**: 116. 2000; W. T. Wang & Warnock in Fl. China **6**: 238. 2001; Q. Yuan & Q. E. Yang in Acta Phytotax. Sin. **41**: 554. 2003. Type: China. Sichuan: Batang, Zambala and Yargong, alpine thickets, Jul.–Sept., 1903, J. A. Soulié 3042bis (lectotype, here designated, P!, P00195918; isolectotype, P!, P00195919), 3040 (syntype, P!), 3041 (syntype, P!), 3043 (syntypes, P!).

D. chenii W. T. Wang in Acta Phytotax. Sin. **6**: 369. 1957; et in Acta Bot. Sin. **10**: 77. 1962; Munz in J. Arn. Arb. **49**: 131. 1968; W. T. Wang in Fl. Reipubl. Popularis Sin. **27**: 373. 1979; et in Vas. Pl. Hengduan Mount. **1**: 481. 1993; et in Fl. Yunnan. **11**: 116. 2000; W. T. Wang & Warnock in Fl. China **6**: 238. 2001.



Fig. 3 Specimens of *Delphinium batangense*. A: J. A. Soulié 3898 (P), Batang, Sichuan, China; B: J. A. Soulié 3899 (P), same locality; C, D: J. A. Soulié 3906 (P), same locality.

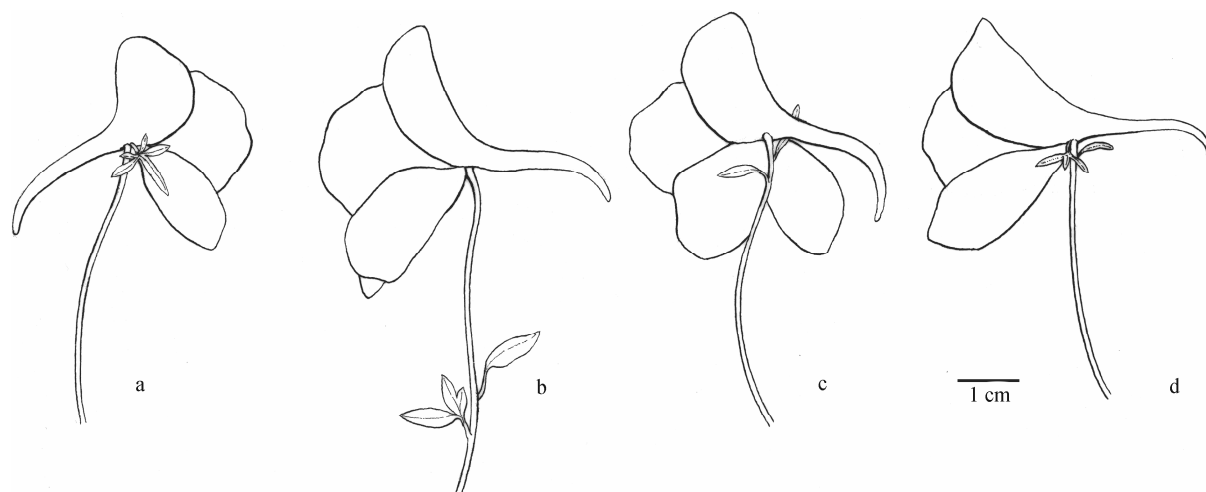


Fig. 4 Variation of the position and shape of bracteoles within a population of *Delphinium batangense* from Baima Shan, Deqen, Yunnan, China. All drawn from Q. E. Yang & Q. Yuan 87 (PE).



Fig. 5 *Delphinium batangense* in the wild. A: Habitat; B: Habit; C: Inflorescence; D: Staminode (left) and petal (right). Photos by Q. Yuan from Baima Shan, Deqen, Yunnan, China.



Fig. 6 Specimens of *Delphinium batangense*. A: T. T. Yu 9330 (holotype of *D. pulcherrimum*, PE), Atuntze (= Deqen), Yunnan, China; B: T. T. Yu 9330 (isotype of *D. pulcherrimum*, PE); C, D: T. T. Yu 9330 (isotypes of *D. pulcherrimum*, KUN).



Fig. 7 Specimens of *Delphinium batangense*. A: T. T. Yu 12809 (holotype of *D. albo-marginatum* and of *D. chenii*, KUN), Daocheng, Sichuan, China; B: T. T. Yu 12809 (isotype of *D. albo-marginatum* and of *D. chenii*, KUN); C, D: T. T. Yu 12809 (isotypes of *D. albo-marginatum* and of *D. chenii*, PE).



Fig. 8 Specimens of *Delphinium batangense*. A: Anonymous 349 (holotype of *D. yajiangense*, KUN), Yajiang, Sichuan, China; B: Anonymous 349 (isotype of *D. yajiangense*, NAS).

syn. nov. — *D. albo-marginatum* Chen in Bull. Fan Mem. Inst. Biol., n.s., 1: 170. 1948, non Simonova, 1924. Type: China. Sichuan: Daocheng, Wongtula, margin of thickets, 3900 m, Aug. 21, 1937, T. Y. Yu 12809 (holotype, KUN!; isotypes, KUN!, PE!).

D. pulcherrimum W. T. Wang in Acta Phytotax. Sin. 6: 370. 1957; et in Acta Bot. Sin. 10: 78. 1962; Munz in J. Arn. Arb. 48: 531. 1967, p. p. Type: China. Yunnan: Deqen, Baima Shan, Shulung, open slope, 4240 m, Aug. 3, 1937, T. T. Yu 9330 (holotype, PE!; isotypes, A!, KUN!, PE!).

D. yajiangense W. T. Wang in Bull. Bot. Res., Harbin 6(1): 5. 1986; et in Vas. Pl. Hengduan Mount. 1: 481. 1993; W. T. Wang & Warnock in Fl. China 6: 238. 2001. **syn. nov.** Type: China. Sichuan: Yajiang, Haizi, alpine meadow, 4400 m, Aug. 18, 1976, Anonymous 349 (holotype, KUN!; isotypes, KUN!, NAS!).

Notes. In the protologue of *Delphinium albo-marginatum*, Chen^[4] designated T. T. Yu 12909 as the type but did not specify the herbarium in which the holotype was permanently conserved. Wang^[3] only ambiguously stated that the type was conserved in PE when he proposed the replacement name *D. chenii*. Neither of the two sheets of this collection that we have retrieved from PE was annotated by Chen. One of the sheets in KUN (Fig. 7: A), however, was annotated, in Chen's hand, as "*Delphinium albo-marginatum*, sp. nov.", and thus we consider it to be the holotype. It is worth mentioning that the elevation of the collection locality of T. T. Yu 12909 was given as 3000 m in the protologue of *D. albo-marginatum*, not 3900 m as recorded on the field label. This typographical error has also appeared in the type information of *D. chenii* given in the synopsis of the Asian *Delphinium* by Munz^[6].



Fig. 9 Specimens of *Delphinium batangense*. A, B: Y. Luo 410 (PE), Daocheng, Sichuan, China; C: Anonymous 513 (SM), Dege, Sichuan, China; D: Anonymous 251 (SM), Jiulong, Sichuan, China.

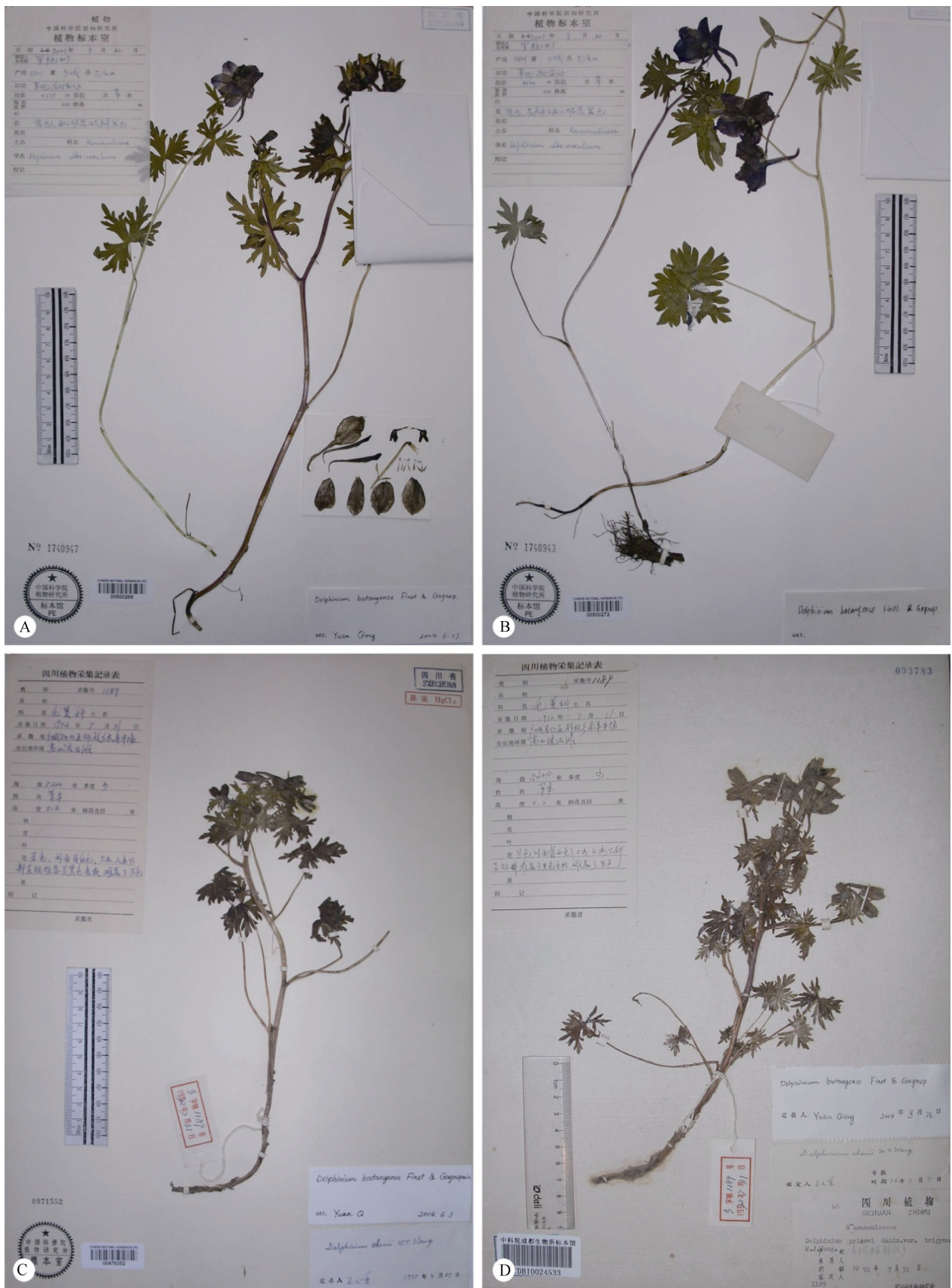


Fig. 10 Specimens of *Delphinium batangense*, all from Xiangcheng, Sichuan, China. A, B: Y. Luo 417 (PE); C: Anonymous 1189 (PE); D: Anonymous 1189 (CDBI).



Fig. 11 Specimens of *Delphinium batangense*, both from Zhongdian, Yunnan, China. A: Q. E. Yang & H. Z. Kong 98-321 (PE); B: Q. E. Yang & Q. Yuan 26 (PE).



Fig. 12 *Delphinium bulleyanum* (A, B) and *D. kamaonense* (C–E) in the wild, showing the variation in flower color within a species. A and B photographed by Q. Yuan from Zhongdian, Yunnan, China, C and D by Q. Yuan from Nangqen, Qinghai, China, and E by Y. S. Chen from Cona, Xizang, China.

In general aspect, *Delphinium batangense* is most closely similar to *D. pseudopulcherrimum* W. T. Wang, so much so that we are not able to pinpoint any essential difference between them in morphology. The latter, currently known only from Lhasa in Xizang, seems to be no more than a somewhat robust form of the former. Considering their geographical disjunction, we set aside the problem of the identity of *D. pseudopulcherrimum* for a future study.

Additional specimens examined. China. Sichuan: Batang, J. A. Soulié 3042 (P), 3898 (P), 3899 (P), 3901 (P), 3905 (P), 3906 (P), 3907 (P); Daocheng, Y. Luo 410

(PE); Dege, Dege Exped. 513; Jiulong, Jiulong Exped. 251; Xiangcheng, Anonymous 1189 (CDBI, PE), Y. Luo 417 (PE). **Yunnan:** Deqen, G. Forrest 20780 (K, P), C. W. Wang 69533 (IBSC, PE), Q. E. Yang & Q. Yuan 77 (PE), 87 (PE); Zhongdian, Q. E. Yang & H. Z. Kong 98-321 (PE), Q. E. Yang & Q. Yuan 26 (PE).

Distribution and habitat. *Delphinium batangense* is distributed in western Sichuan (Batang, Daocheng, Dege, Jiulong, Xiangcheng, Yajiang) and northwestern Yunnan (Deqen, Zhongdian), China (Fig. 13). It grows in grazed meadows, thickets or on limestone scree slopes at altitudes of 3800–5200 m.

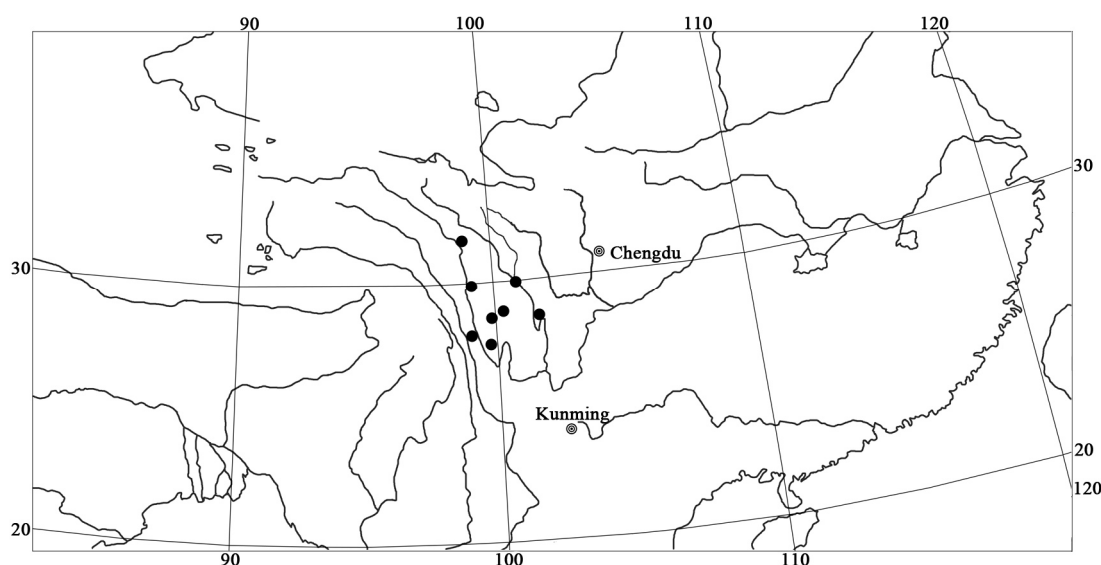


Fig. 13 Distribution of *Delphinium batangense* (●).

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