



The identity of *Ranunculus ailaoshanicus* (Ranunculaceae) from China

QIONG YUAN* & QIN-ER YANG

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

*Author for correspondence: yuanqiong@scib.ac.cn

Abstract

We demonstrate that *Ranunculus ailaoshanicus* (Ranunculaceae) described from Ailao Shan, Yunnan, China, is conspecific with *R. ficariifolius*, a very widespread and highly variable species. We therefore place the former in synonymy within the latter.

Key words: New synonymy, taxonomy, Yunnan

Introduction

Ranunculus ailaoshanicus Wang (2007: 293) (Ranunculaceae) was described on the basis of a single collection, *G.P. Yang 386* (PE; Fig. 1), from Ailao Shan, Jingdong County, Yunnan, southwestern China. In the protologue, the author stated that it was most closely similar to *R. dongrengensis* Handel-Mazzetti (1939: 157), but differed in an array of characters. In *R. ailaoshanicus* the stems were leafless, 1–5 cm tall, the leaves were all basal, the flowers were smaller (7–9 mm in diameter), and the petals were also smaller (ca. 3.8 × 2.5 mm), oblong-obovate and obscurely veined; whereas in *R. dongrengensis* both basal and cauline leaves were present, the stems were 5–15 cm tall, the flowers were larger (1–1.8 cm in diameter), and the petals were also larger (4–9 × 2.1–7 mm), obovate and prominently veined.

Upon careful examination of the type material of *R. ailaoshanicus*, however, we were struck by its great resemblance with *R. ficariifolius* H. Lév. & Vaniot in Lévillé (1904: 289). The latter species is widely distributed in Bhutan, China (Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan), northern India (Sikkim), Nepal, and Thailand, growing by streams, in meadows or at forest margins at relatively lower elevations of 1100–3200 m (Gilbert & Wang 2001). This species is variable in the presence or absence of stems. As shown in Fig. 2 and Fig. 3A & B, some specimens from Guizhou and Yunnan are stemless or nearly so. These include *P.J. Cavalerie 629* (E; Fig. 2A) and *P.J. Cavalerie 1343* (E; Fig. 2B). Lévillé & Vaniot in Lévillé (1904) based the description of *R. ficariifolius* on the former collection. Later Lévillé (1915) designated this collection as the type of *R. ficariifolius* var. *erythrosepalus* Lévillé (1915: 338). When describing *R. ficariifolius* he designated the latter collection as the type of *R. ficariifolius* var. *crenatus* H. Lév. & Vaniot in Lévillé (1904: 289), but later he cited it under the species (Lévillé 1915). Both *R. ficariifolius* var. *erythrosepalus* and *R. ficariifolius* var. *crenatus* have been reduced to the synonymy of *R. ficariifolius* (Lauener & Green 1961, Wang 1995, Wang & Gilbert 2001). Most notably, a collection from the type locality of *R. ailaoshanicus*, i.e. *G.P. Yang 07-58* (KUN; Fig. 3C & D), obviously has stems and undoubtedly belongs to *R. ficariifolius*. This collection, if regardless of the presence or absence of stems, is not essentially different from the type collection of *R. ailaoshanicus* (Fig. 1).

It is evident, therefore, that *Ranunculus ailaoshanicus* is no more than a stemless form of *R. ficariifolius*. The following treatment is necessary.

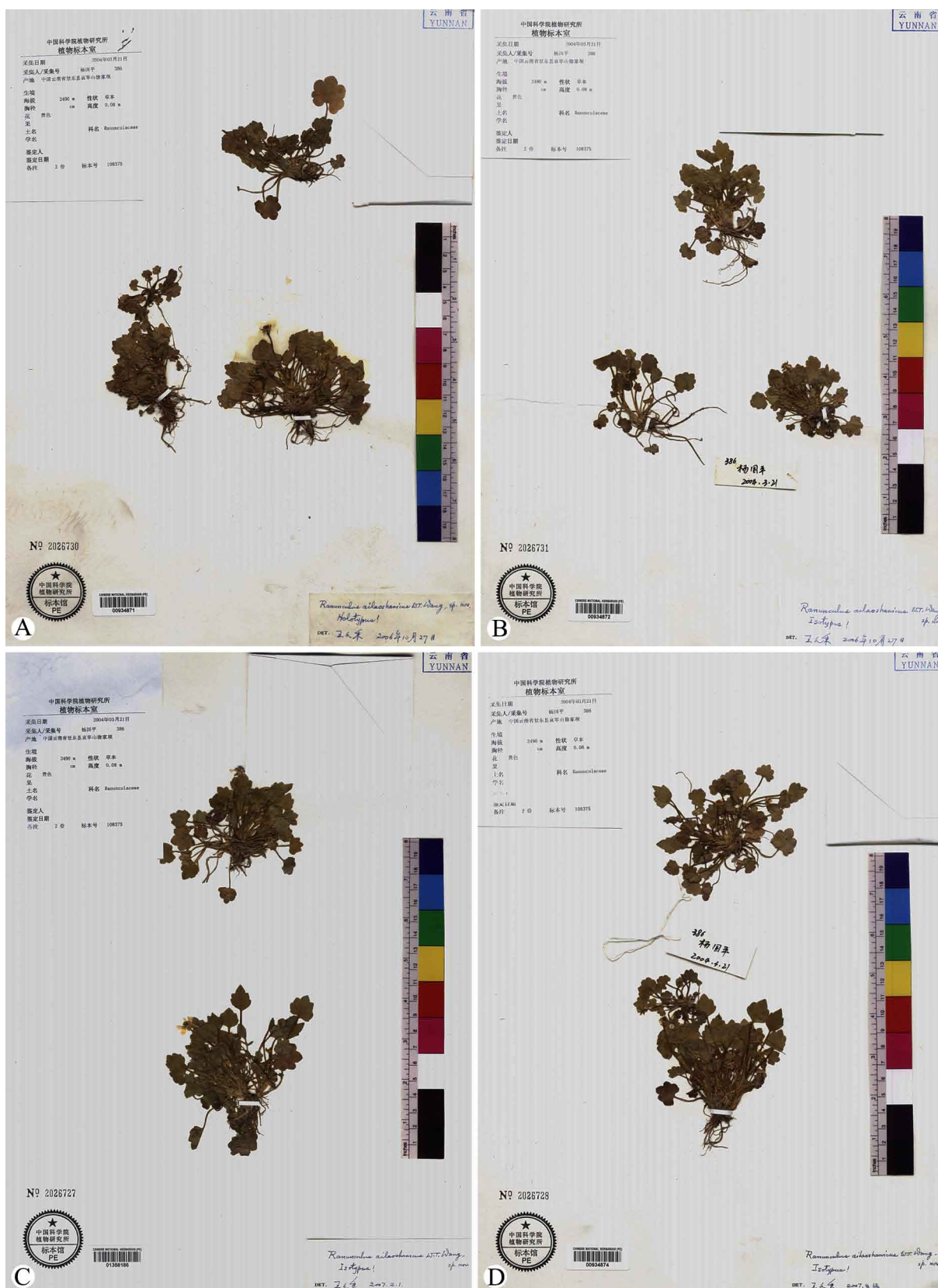


FIGURE 1. Holotype (A) and isotype (B–D) sheets of *Ranunculus ailaoshanicus* (= *R. ficariifolius*).

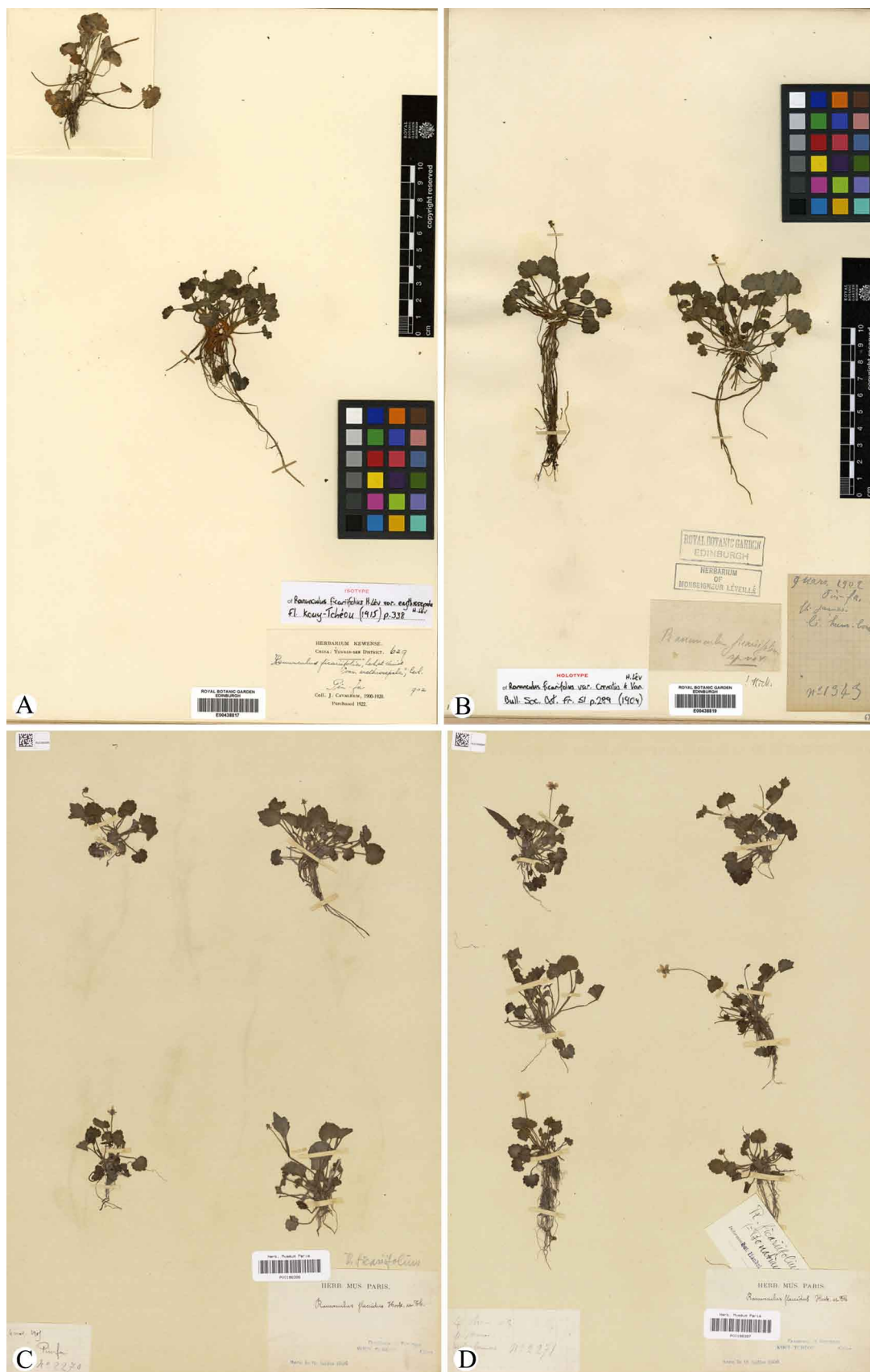


FIGURE 2. Specimens of *Ranunculus ficariifolius*. A. China, Guizhou, Pin-fa, P.J. Cavalerie 629 (E, isolectotype). B. Same locality, P.J. Cavalerie 1343 (E, holotype of *R. ficariifolius* var. *crenatus*). C. Same locality, P.J. Cavalerie & Fortunat 2270 (P). D. Same locality, P.J. Cavalerie & Fortunat 2271 (P).



FIGURE 3. Specimens of *Ranunculus ficariifolius*. A. China, Yunnan, Songming, B.Y. Qiu 51668 (KUN). B. Same locality, B.Y. Qiu 54239 (KUN). C, D. China, Yunnan, Jingdong, G.P. Yang 07-58 (KUN).



FIGURE 4. Lectotype sheet of *Ranunculus ficariifolius*.

Taxonomic treatment

Ranunculus ficariifolius H. Lév. & Vaniot in Lévillé (1904: 289; “*ficariifolia*”). Figs. 1–4.

Type:—CHINA. Kouy-Tchéou (= Guizhou): Pin-fa, grande grotte, 14 octobre 1902, *P.J. Cavalerie* 629 (lectotype here designated E-00438816!, isolectotype E-00438817!). Figs. 2B & 4.

= *Ranunculus ailaoshanicus* Wang (2007: 293), **syn. nov.**

Type:—CHINA. Yunnan: Jingdong, Ailao Shan, Xujiaba, elev. 2400 m, 21 March 2004, *G.P. Yang* 386 (holotype PE!, isotypes PE!). Fig. 1.

For a complete synonymy of this species see Wang (1995) and Wang & Gilbert (2001).

Notes:—Lévillé & Vaniot in Lévillé (1904) described *Ranunculus ficariifolius* on the basis of a Guizhou collection, i.e. *P.J. Cavalerie* 629 (E), which includes two sheets. As there are four better pressed plants mounted on the sheet E-00438816 and they all match the original description, here we designate this sheet as the lectotype of *R. ficariifolius*.

Ranunculus ficariifolius is highly variable in habit and in the size and shape of leaves as well (Handel-Mazzetti 1939). In addition to *R. ailaoshanicus* synonymized here, *R. triangularis* Wang in Wang & Li (1987: 37) and *R. pianmaensis* Wang (2008: 522) may also lie within the variation range of *R. ficariifolius*. Moreover, the relationship between *R. xinningensis* Wang (1989: 10) and *R. ficariifolius* is also worth a study. When describing *R. xinningensis*, Wang (1989) contrasted it with *R. dielsianus* Ulbrich (1913: 621). In our opinion, *R. xinningensis*, if not conspecific with *R. ficariifolius*, is at least most closely related to it.

The close similarity between *Ranunculus ficariifolius* and *R. cheirophyllus* Hayata (1913: 7) has been noticed by Ulbrich (1913), Eichler (1958), and Tamura (1995). While Tamura (1995) placed both *R. ficariifolius* and *R. cheirophyllus* in *R. sect. Ficariifolius* Liou (1980: 360; “*Ficariifolium*”), Wang (1995) established a new section, *R. sect. Deltodon* Wang (1995: 303), to accommodate *R. cheirophyllus*. This section should be superfluous. According to Tamura (1997), *R. ficariifolius* is also closely related to *R. javanicus* Blume (1825: 3).

Yang (2001) reported *Ranunculus ficariifolius* as a tetraploid ($2n = 32$) based on his cytological examination of two populations from northwestern Yunnan, China. We assume that *R. ficariifolius* and its close allies may constitute a polyploid species complex. Ongoing study of this species complex, using molecular as well as morphological and cytological data, will allow us to gain a better understanding of its variation and differentiation pattern.

Acknowledgements

We are grateful to two anonymous reviewers for their valuable comments on the manuscript. We thank the curators of E, KUN, P and PE for allowing us to examine specimens or use their images of specimens. This work was supported by the National Natural Science Foundation of China (grant no. 31470303).

References

- Blume, C.L. (1825) Ranunculaceae. In: *Bijdragen tot de Flora van Nederlandsch Indië*. Ter Lands Drukkerij, Batavia, pp. 1–3.
- Eichler, H. (1958) Revision der Ranunculaceen Malesiens. *Bibliotheca Botanica* 124: 1–110.
- Handel-Mazzetti, H. (1939) Plantae sinenses XXXIII. Ranunculaceae. *Acta Horti Gotoburgensis* 13: 37–219.
- Hayata, B. (1913) *Icones Plantarum Formosanarum*, vol. 3. Bureau of Productive Industries, Government of Formosa, Taihoku, 213 pp.
- Lauener, L.A. & Green, P.S. (1961) Catalogue of the names published by Hector Lévillé: I. *Notes from the Royal Botanic Garden Edinburgh* 23: 573–596.
- Lévillé, H. (1904) Nouveautés chinoises, coréennes et japonaises. *Bulletin de la Société Botanique de France* 51: 289–293.
<https://doi.org/10.1080/00378941.1904.10829134>
- Lévillé, H. (1915) *Flore du Kouy-Tchéou*. Le Mans, 532 pp.
- Liou, L. (1980) *Ranunculus* L. In: Wang, W.T. (Ed.) *Flora Reipublicae Popularis Sinicae*, vol. 28. Science Press, Beijing, pp. 255–331.
- Tamura, M. (1995) *Ranunculus* L. In: Hiepko, P. (Ed.) *Die Natürlichen Pflanzenfamilien, Band 17a IV*. Duncker und Humblot, Berlin, pp. 412–435.
- Tamura, M. (1997) Synoptic Flora of the Ranunculaceae in Thailand. *Thai Forest Bulletin (Botany)* 25: 63–80.

- Ulbrich, E. (1913) Ranunculaceae Asiae orientalis novae vel criticae. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 48: 611–625.
- Wang, W.T. & Li, L.Q. (1987) Notulae de de Ranunculaceis sinensibus (X). *Acta Phytotaxonomica Sinica* 25: 24–38.
- Wang, W.T. (1989) Notulae de de Ranunculaceis sinensibus (XIII). *Bulletin of Botanical Research (Harbin)* 9 (2): 1–14.
- Wang, W.T. (1995) A revision of the genus *Ranunculus* in China (II). *Bulletin of Botanical Research (Harbin)* 15: 275–329.
- Wang, W.T. (2007) *Ranunculus ailaoshanicus* W. T. Wang, a new species of Ranunculaceae from Yunnan, China. *Acta Phytotaxonomica Sinica* 45: 293–295.
<https://doi.org/10.1360/aps06192>
- Wang, W.T. (2008) New taxa of Ranunculaceae from Yunnan. *Acta Botanica Yunnanica* 30: 519–524.
- Wang, W.T. & Gilbert, M.G. (2001) *Ranunculus* Linnaeus. In: Wu, Z.Y., Raven, P.H. & Hong, D.Y. (Eds.) *Flora of China*, vol. 6. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis, pp. 391–431.
- Yang, Q.E. (2001) Cytology of eleven species in the genus *Ranunculus* L. and five in its four related genera. *Acta Phytotaxonomica Sinica* 39: 405–422.