



Thalictrum callianthum (Ranunculaceae) is merged with *T. diffusiflorum*

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Abstract

Critical examination of herbarium specimens (including type material) indicates that *Thalictrum callianthum* (Ranunculaceae), described from Mainling, south-east Xizang (Tibet), China, is conspecific with *T. diffusiflorum*, a species described from Nyingchi closely contiguous to Mainling and fairly common in south-east Xizang. We therefore place the former in synonymy with the latter.

Key words: New synonymy, south-east Xizang (Tibet), taxonomy

Introduction

Thalictrum callianthum Wang (2013: 583) (Ranunculaceae) was described on the basis of a single collection, *Y. Yang et al.* 471 (PE; Fig. 1A, B), from Mainling (= Milin), south-east Xizang (Tibet), China. In the protologue, the author stated that it was closely related to *T. delavayi* Franchet (1886: 367), but differed by having smaller leaflets (4–10 mm × 3–9 mm vs. 3 cm × 2–2.5 cm), larger sepals (11–16 mm vs. 9–12 mm long), narrowly linear (vs. oblong) anthers, slender styles as long as (vs. much shorter than) ovaries, elongated in fruit and hamate (vs. not hamate) at the apex, and wingless (vs. narrowly winged) achenes. Wang & Liu (2016) has recognized *T. callianthum* as an independent species in the *Higher Plants of China in Colour* recently published. It is worth mentioning that Wang (2013), in his remarks on *T. callianthum*, stressed that *T. callianthum* should be introduced to cultivation because its flowers were purple, larger, and thus looked more beautiful than those of *T. delavayi*, a highly ornamental species already cultivated in gardens in Uppsala, Sweden and Geneva, Switzerland.

The discovery of *Thalictrum callianthum*, an attractive plant with quite showy flowers as claimed by its author, from south-east Xizang, a fairly well botanized area, caught our attention. The aim of this paper is to determine the identity of *T. callianthum*.

Material and methods

For morphological comparisons, we critically checked herbarium specimens of *Thalictrum callianthum* and *T. diffusiflorum* in HNWP, K, KUN and PE. We also consulted a colour photograph of *T. callianthum* (Wang & Liu 2016).

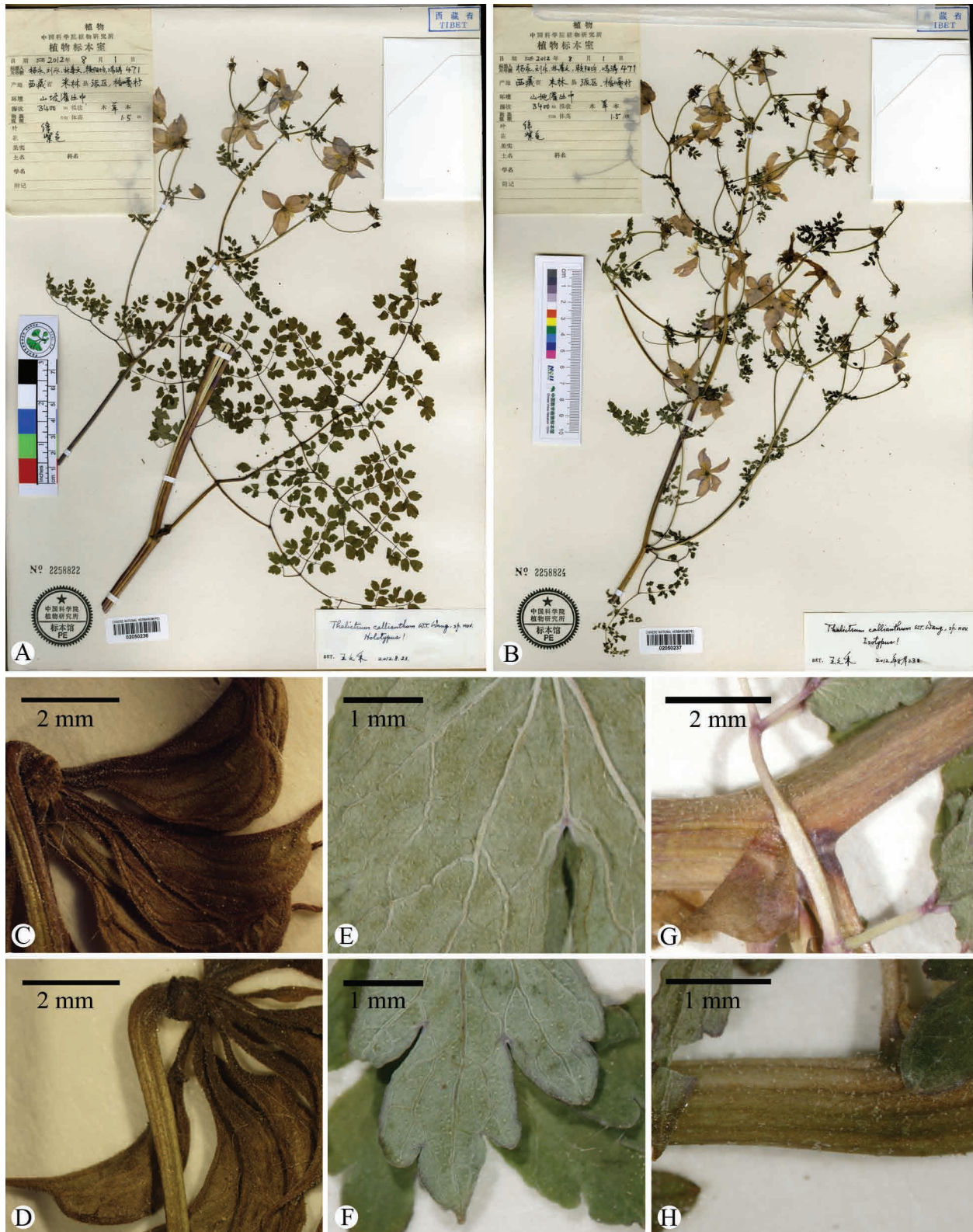


FIGURE 1. Holotype and isotype sheets of *Thalictrum callianthum* (= *T. diffusiflorum*), showing habit (A, B) and pubescence (C–H). A. Holotype sheet (PE). B. Isotype sheet (PE). C. Carpels from holotype. D. Carpels from isotype. E. Leaf (abaxial side) from holotype. F. Leaves from isotype. G. Portion of flowering branch from holotype. H. Portion of flowering branch from isotype.

Results and discussion

The characters given by Wang (2013) for his *Thalictrum callianthum*, particularly the smaller leaflets and larger, purple sepals, together with its type locality, are reminiscent of *T. diffusiflorum* Marquand & Shaw in Marquand (1929: 153), a species described on the basis of a collection, *F. Kinson-Ward 5899* (K; Fig. 2), from Nyingchi, which is closely contiguous to Mainling, the type locality of *T. callianthum*. Our critical examination of other specimens (some of them are shown in Fig. 3, with two from Mainling, the type locality of *T. callianthum*) also indicates that *T. callianthum* is undoubtedly identical with *T. diffusiflorum*. In describing *T. callianthum*, Wang (2013) contrasted it with *T. delavayi*, a species widely distributed in west Guizhou, west Sichuan, south-east Xizang, and Yunnan, probably because he regarded both of them as glabrous plants. He described the stem, leaves, inflorescence and carpels of *T. callianthum* as all being glabrous. Upon a careful observation of the type material of *T. callianthum*, however, we found that the stem, leaves (abaxial side), inflorescence and carpels of *T. callianthum* are all more or less glandular pubescent (Fig. 1C–H). The glandular hairs on the inflorescence are also visible in the colour photograph of *T. callianthum* (Wang & Liu 2016). As shown in Figs. 1–3, the type specimens of *T. callianthum* matches perfectly those and other specimens of *T. diffusiflorum* in general aspect. It is evident that the two names encompass only one taxonomic entity. It is therefore necessary to place *T. callianthum* in synonymy with *T. diffusiflorum* as the latter is an earlier name. Our survey of herbarium specimens indicates that *T. diffusiflorum* is a fairly common species, occurring from Bomi to Nangxian in south-east Xizang, China.

In having relatively larger flowers, *Thalictrum diffusiflorum* is somewhat similar to *T. delavayi*, a species fairly common in west Guizhou, west Sichuan, south-east Xizang, and Yunnan, China (four specimens from south-east Xizang are shown in Fig. 4 for the convenience of comparison). The former is most readily distinguishable from the latter, among other characters as given by Wang (2013) for distinguishing between *T. callianthum* and *T. delavayi*, by the stem, leaves, inflorescence axis, pedicels and carpels being all more or less glandular pubescent (vs. glabrous) and, as indicated by the specific epithet “*diffusiflorum*”, the usually quite lax (vs. relatively dense) panicle.



FIGURE 2. Holotype sheet (A) and isotype sheet (B) of *Thalictrum diffusiflorum*.



FIGURE 3. Specimens of *Thalicttrum diffusiflorum*. A. China, south-east Xizang, Bomi, Zamu, *Y.T. Chang & K.Y. Lang* 611 (PE). B. China, south-east Xizang, Mainling, Wolong, *C.C. Ni et al.* 2867 (PE). C. China, south-east Xizang, Mainling, Jiage, *C.C. Ni et al.* 2867 (PE). C. China, south-east Xizang, Nyingchi, Lulang, *Y. T. Chang & K.Y. Lang* 997 (PE).



FIGURE 4. Specimens of *Thalictrum delavayi*. A. China, south-east Xizang, Bomi, Tongmai, J.W. Zhang & J.T. Wang 0485 (PE). B. China, south-east Xizang, Mainling, Paiqu, Qinghai-Xizang Exped. 74-4634 (KUN). C. Same locality, Qinghai-Xizang Exped. 74-4634 (PE). D. China, south-east Xizang, Nyingchi, Lulang, Qinghai-Xizang Suppl. Exped. 751174 (KUN).

Taxonomic treatment

Thalictrum diffusiflorum Marquand & Shaw in Marquand (1929: 153). Figs. 1–3.

Type:—CHINA. Xizang: Nyingchi, Tumbatse, in sheltered pastures and thickets, under trees or bushes, etc., 3600 m a.s.l., 7 July 1924, *F. Kingdon-Ward 5899* (holotype K!; isotype K!). Fig. 2.

= *Thalictrum callianthum* Wang (2013: 583), **syn. nov.**

Type:—CHINA. Xizang: Mainling (= Milin), Paiqu, Gega village, in thickets, 3400 m a.s.l., 1 August 2012, *Y. Yang et al. 471* (holotype PE!; isotypes PE!). Fig. 1A, B.

For a full description of this species see Marquand & Shaw in Marquand (1929), Wang & Wang (1979), Wang (1985), and Fu & Zhu (2001).

Distribution and habitat:—*Thalictrum diffusiflorum* is distributed in south-east Xizang, China (Fig. 5). It occurs in forests, thickets or grassy places along streamside at elevations of 2900–3800 m above sea level.

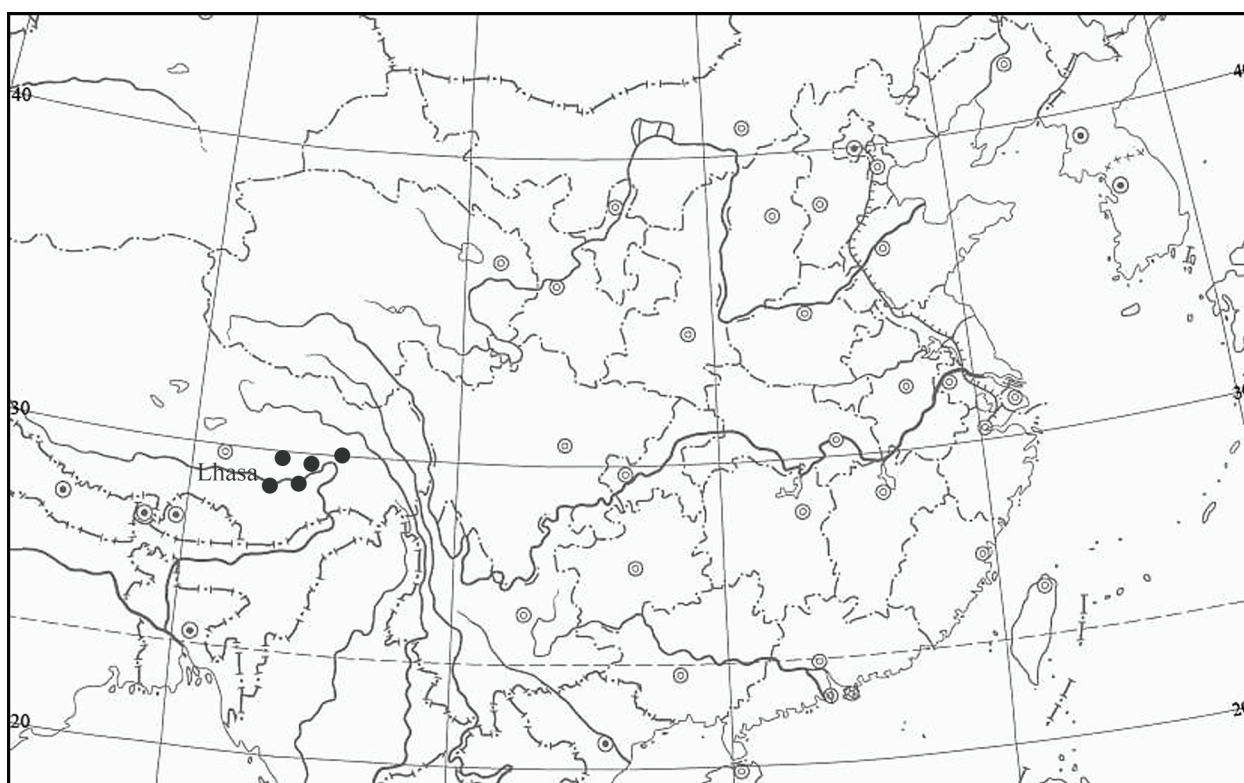


FIGURE 5. Distribution of *Thalictrum diffusiflorum* (●).

Phenology:—Flowering June to August; fruiting September.

Additional specimens examined:—CHINA. Xizang: Bomi, *Anonymous 76-289* (PE), *Anonymous 2224* (PE), *Y. T. Chang & K.Y. Lang 611* (PE), *Y. Fei et al. 201* (KUN), *R.F. Huang 728* (HNWP), *H.N. Qin et al. 332* (PE), *T.S. Ying & D.Y. Hong 866* (PE); Gongbo'gyamda, *Anonymous 2121* (PE); Mainling, *B.S. Li et al. 5766* (PE), *C. C. Ni et al. 2867* (PE), *Qinghai-Xizang Exped. 74-3715* (KUN, PE), *Qinghai-Xizang Supp. Exped. 750846* (KUN, PE), *Xizang Trad. Chin. Med. Exped. 4102* (PE); Nangxian, *Z.S. Ren 194* (PE); Nyingchi, *Y. T. Chang & K.Y. Lang 997* (PE), *Y. Fei et al. 307* (KUN), *X.F. Jin 3134* (PE), *B.S. Li et al. 6221* (PE), *J. Luo et al. 253* (HNWP), *Qinghai-Xizang Supp. Exped. 751272* (KUN, PE), *Xizang Trad. Chin. Med. Exped. 3313* (PE).

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