

加查银莲花(毛茛科)的名实订正

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摘要: 通过标本检查,发现毛茛科加查银莲花(*Anemone jiachaensis* W. T. Wang)与西藏银莲花(*A. tibetica* W. T. Wang)属于同一种植物,故将前者处理为后者的异名。加查银莲花发表时被置于鹅掌草组[*A. sect. Stolonifera* (Ulbr.) Juz.],但其花粉为三沟而非多沟,与岩生银莲花亚组[*A. subsect. Rupicolae* (Tamura ex Chaudhary & Trifonova) Starod.]的岩生银莲花(*A. rupicola* Camb.)(西藏银莲花亦属于该亚组)的花粉类型一致,而与鹅掌草组植物的多沟花粉明显不同,从而进一步表明加查银莲花与西藏银莲花确为同一种植物而且应为岩生银莲花亚组的成员。

关键词: 银莲花属; 加查银莲花; 西藏银莲花; 新异名; 花粉形态; 毛茛科

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The Identity of *Anemone jiachaensis* (Ranunculaceae)

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Abstract: Examination of herbarium specimens has shown that *Anemone jiachaensis* W. T. Wang (Ranunculaceae) is conspecific with *A. tibetica* W. T. Wang. We therefore reduce *A. jiachaensis* to the synonymy of *A. tibetica*. When *A. jiachaensis* was published, it was regarded as a member of *A. sect. Stolonifera* (Ulbr.) Juz. Its pollen grains, however, are not stephanocolpate (polycolpate), the pollen type that characterizes *Anemone sect. Stolonifera*, but are 3-colpate, the same type as that in *A. subsect. Rupicolae* (Tamura ex Chaudhary & Trifonova) Starod. This has further lent strong support for the synonymization of *A. jiachaensis* with *A. tibetica*, a member in *A. subsect. Rupicolae*.

Key words: *Anemone*; *A. jiachaensis*; *A. tibetica*; New synonymy; Pollen morphology; Ranunculaceae

In 2014, Wang^[1] described *Anemone jiachaensis* W. T. Wang (Ranunculaceae) on the basis of a single specimen, Z. C. Ni et al. 2734 (PE; Fig. 1: A), from Jiacha (=Gyaca), southeastern Xizang, China. In the protologue, he stated that the species was a member of *A. sect. Stolonifera* (Ulbr.) Juz., but differed from all other species of the section by the basal leaves ca. 12 (vs. 1–3) and carpels ca. 70 (vs. 4–16).

In describing *Anemone jiachaensis* as new, it is

evident that Wang^[1] overlooked the older Xizang species, *A. tibetica* W. T. Wang, which was described in 1980 by himself based on a single specimen, Xizang Herb. Med. Exped. 4423 (PE), from Langxian^[2], an area closely contiguous to Jiacha. We have not been able to trace the holotype of *A. tibetica* in PE. Fortunately we have found a duplicate (Fig. 1: B) from the Herbarium of Northwest Institute of Plateau Biology, Chinese Academy of Sciences (HNWP). This specimen had

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Fig. 1 Specimens of *Anemone tibetica* (A, B) and *A. rupicola* (C). A: Z. C. Ni et al. 2734 (holotype of *A. jiachaensis*, PE), Jiacha (=Gyaca), Xizang, China; B: Xizang Herb. Med. Exped. 4423 (isotype of *A. tibetica*, HNWP), Langxian, Xizang, China; C: Xizang Herb. Med. Exped. 4498 (PE), Langxian, Xizang, China.

been previously identified as *A. rupicola* Camb., but it matches perfectly the original description of *A. tibetica* and undoubtedly is an isotype of it. After careful comparison of their type material we are convinced that *A. jiachaensis* is identical with *A. tibetica* in all essentials. The leaf size is highly variable even in one individual and thus taxonomically not important. In the protologue, the carpels of *A. jiachaensis* were described to be glabrous, but our re-examination has confirmed that the ovaries are densely pubescent. It is justifiable to reduce *A. jiachaensis* to the synonymy of *A. tibetica*.

Wang^[1] did not give any reason why he referred *Anemone jiachaensis* to *A. sect. Stolonifera*. It may be assumed that he did so mainly on account of its sessile involucre bracts, but such involucre bracts occur also in some other sections of *Anemone* L. Palynological data convincingly show that Wang is wrong to have placed *A. jiachaensis* into *A. sect. Stolonifera*. As shown in Figure 2, *A. jiachaensis* (= *A. tibetica*), just like *A. rupicola*, the putative closest ally of *A. tibetica*, is 3-colpate (also see Xi and Chang^[3], Huynh^[4], and Fang and Yang^[5]), whereas *A. hofengensis* W. T. Wang, a member of *A. sect. Stolonifera*, is (5–)6(–7)-zonocolpate. These results strongly indicate that *A. jiachaensis* does not belong to *A. sect. Stolonifera*, a group which is well characterized palynologically by having stephanocolpate (polycolpate) pollen^[2,6]. Indeed, as noted by Wang^[1], *A. jiachaensis* appears to be rather anomalous within *A. sect. Stolonifera* in respect of its high number of carpels (ca. 70). On the basis of a molecular phylogenetic study of *Anemone*, Hoot et al.^[7] placed *A. rupicola*, together with *A. hupehensis* Lem., *A. rivularis* Buch.-Ham. ex DC., *A. tomentosum* (Maxim.) Pei and *A. vitifolia* Buch.-Ham. ex DC., into sect. *Rivularidium* Jancz. under subgen. *Anemone*. This classification has been corroborated by our recent molecular work of the genus with a more extensive taxon sampling^[8]. In this work, *A. sect. Rivularidium* is subdivided into four subsections, and *A. laceratoincisa* W. T. Wang, *A. rupicola* and *A. tibetica* are placed into subsect. *Rupicolae* (Tamura ex Chaudhary & Trifonova) Starod., although *A.*

laceratoincisa and *A. tibetica* have not been included in the molecular phylogenetic analyses because of unavailability of DNA material. After *A. jiachaensis* is merged with *A. tibetica*, its high number of carpels immediately turns out to be quite a harmonious character within *A. subsect. Rupicolae*, a group which is characterized by having numerous carpels. Furthermore, it can be expected that *A. tibetica* should have a chromosome number based on $x=8$, the base chromosome number which characterizes the subgenus *Anemone*, not a number based on $x=7$ which characterizes the subgenus *Anemonidium* (Spach) Juz. (see Hoot et al.^[7] and Zhang et al.^[8] for the new infrageneric classification of *Anemone*).

Based on the above analyses, we make the following taxonomic treatment.

Anemone tibetica W. T. Wang in Fl. Reipubl. Popularis Sin. **28**: 349 et 31. 1980; W. T. Wang in Fl. Xizang. **2**: 80. 1985; W. T. Wang et al. in Fl. China **6**: 318. 2001. Type: China. Xizang: Langxian, Beng Village, alt. 3100 m, streamside in ravine, Aug. 18, 1972, Xizang Herb. Med. Exped. 4423 (holotype, PE; isotype, HNWP!).

A. jiachaensis W. T. Wang in Pl. Divers. Res. **36**: 450. 2014. **syn. nov.** Type: Xizang, Jiacha (= Gyaca), suburb of the county town, terrace in river valley, alt. 3400 m, Aug. 2, 1980, Z. C. Ni et al. 2743 (holotype, PE!).

Notes. Prior to the description of *Anemone jiachaensis*, *A. tibetica* had been known only from its type collection. We agree with Wang^[2] that *A. tibetica* is closely related to *A. rupicola*. They seem to be different mainly in the hairiness of the scape and leaves, the leaf dissection, and the size and dissection of involucre bracts. In *A. rupicola*, the scape, petioles and both surfaces of the leaf blade are all subglabrous, the leaves are 3-sect with the segments deeply divided and incised-dentate, and the involucre bracts are large, leaf-like, and 3-parted. In *A. tibetica*, the scape, petioles and both surfaces of the leaf blade are all more or less puberulent, the leaves are 3-parted to -sect with the segments 2- or 3-lobed and denticulate,

and the involucre bracts are small, not leaf-like, and 3-lobed or -fid.

Interestingly, *Anemone rupicola* and *A. tibetica* may have different habitat preferences. Just at the type locality of *A. jiachaensis* (= *A. tibetica*), a specimen of *A. rupicola*, Xizang Herb. Med. Exped. 4498 (PE; Fig. 1: C), was collected from a dry mountain at an

altitude of 3800 m, whereas the type specimen of *A. jiachaensis* was collected from a river valley at an altitude of 3400 m.

Distribution and habitat. *Anemone tibetica* is distributed in southeastern Xizang (Jiacha, Langxian), China (Fig. 3). It usually grows at streamside or riverbank at altitudes of 3100–3400 m.

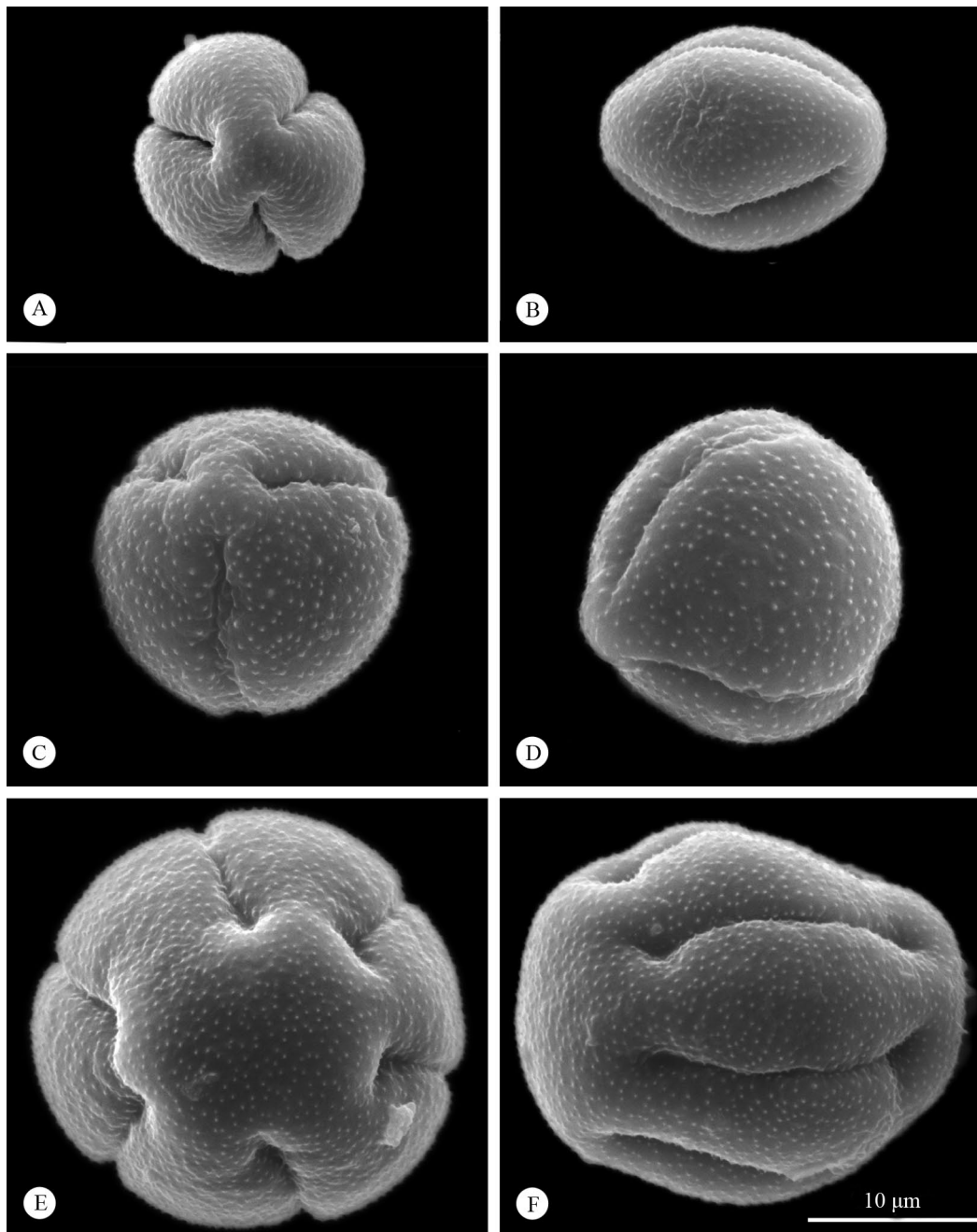


Fig. 2 Pollen in three species of *Anemone* (scanning electron microscopy), all same scale. A, B: *A. tibetica* (3-colpate), Z. C. Ni et al. 2734 (holotype of *A. jiachaensis*, PE), Jiacha, Xizang, China; C, D: *A. rupicola* (3-colpate), M. Tang 868 (IBSC), Yadong, Xizang, China; E, F: *A. hofengensis* (6-zonocolpate), J. P. Luo & L. Wang 377 (IBSC), Enshi, Hubei, China.

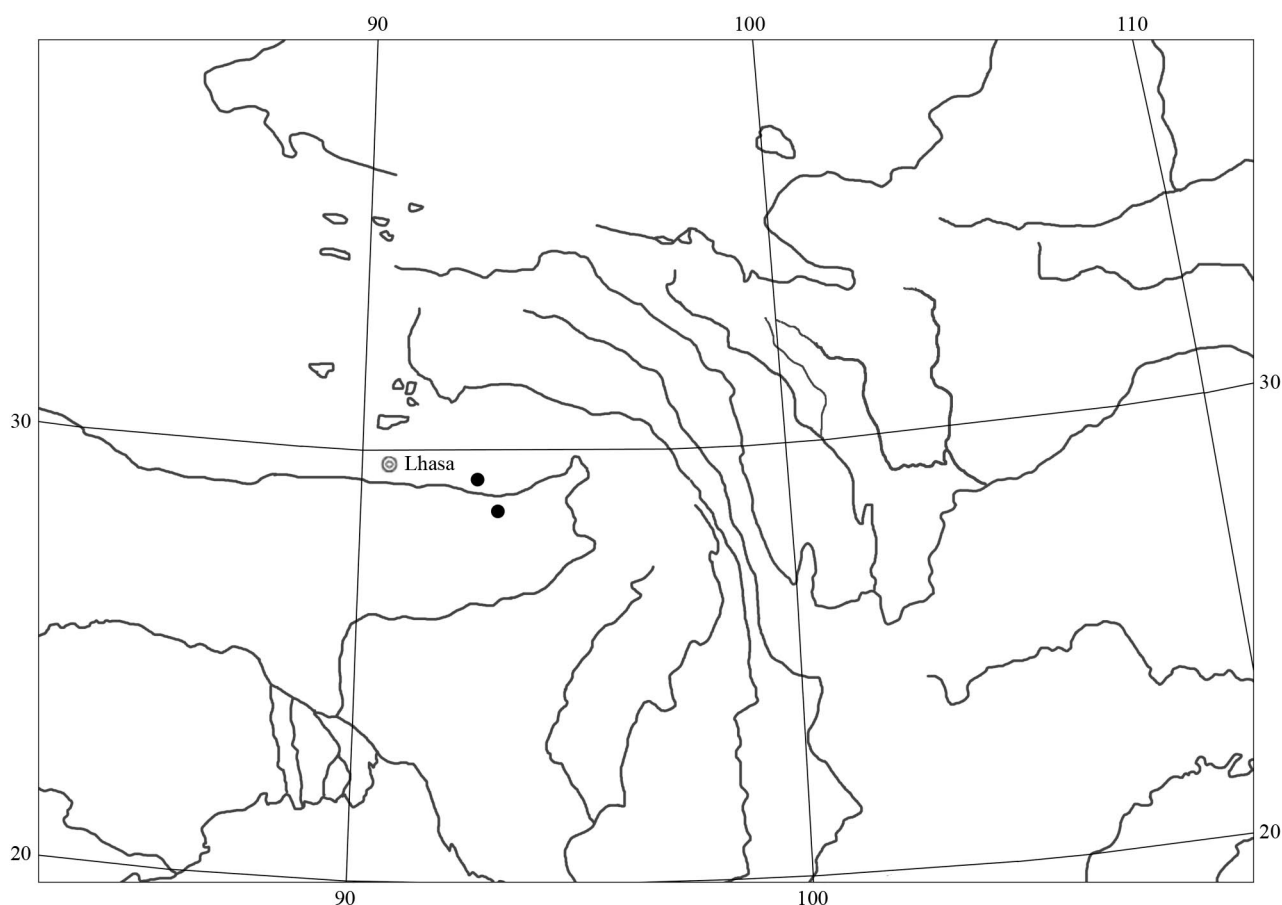


Fig. 3 Distribution of *Anemone tibetica* (●).

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