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Two New Species of *Ranunculus* from Tibet (Postprint)

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Date: 2019-01-30T00:00:00+00:00

Abstract

Two new species of *Ranunculus* (Ranunculaceae) discovered from southern Tibet are described: *Ranunculus longziensis* is closely related to *R. densiciliatus* W. T. Wang, differing from the latter in having glabrous stems and leaves, undivided basal leaves predominantly with 5 veins, and lanceolate-linear cauline leaves; *Ranunculus uniradicatus* is slightly similar in habit to *R. nyalamensis* W. T. Wang, differing from the latter in being an annual herb with only one fibrous root, glabrous stem, narrowly ovate petals, and a puberulent ovary.

Full Text

Two New Species of *Ranunculus* from Tibet

DOI: 10.11931/guihai.gxzw201804031

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Abstract

Two species of the genus *Ranunculus* (Ranunculaceae) are described as new from southern Tibet Autonomous Region: *R. longziensis* is closely related to *R. densiciliatus* W. T. Wang, differing from the latter in its glabrous stems, glabrous leaves, undivided and mostly 5-nerved basal leaves, and lanceolate-linear cauline leaves; and *R. uniradicatus* is slightly similar in habit to *R. nyalamensis* W. T. Wang, differing from the latter in its annual habit, a herb with only a single fibrous root, glabrous stems, narrow-obovate petals, and puberulous ovaries.

Key words: Ranunculaceae; *Ranunculus*, new species, Tibet Autonomous Region

Introduction

In June 2018, the Plant Herbarium of the Institute of Botany, Chinese Academy of Sciences (PE) dispatched an expedition team to conduct intensive botanical collecting in southern Tibet, including Longzi and Cona counties. During the identification of *Ranunculus* specimens from this collection, two taxa proved difficult to name. Given that Longzi and Cona counties border Nepal and India, I first consulted S. K. Srivastava's 2010 revision of *Ranunculus* in India, but could not find any species matching or similar to these two taxa. I then referred to my own 1995 revision, "A Revision of the Genus *Ranunculus* in China," and found that one specimen (PE Exped. 7063 from Longzi County) was closely related to *R. densiciliatus* W. T. Wang, which is endemic to Dinggyê County, Tibet, while the other (PE Exped. 7084 from Cona County) was somewhat similar to *R. nyalamensis* W. T. Wang, endemic to Nyalam County, Tibet. I have determined that these two specimens represent two new species of *Ranunculus*, which are described and published herein.

Taxonomic Descriptions

Ranunculus longziensis W. T. Wang, sp. nov.

Fig. 1 [Figure 1: see original paper]: A-D

[Subgen. *Ranunculus* sect. *Flammula* (Webb ex Spach) Schur]

Latin Diagnosis *Ob foliorum laminas suborbiculares vel orbiculari-ovatas margine integras, flores solitarios terminales, petala flava obovata 6-7 mm longa et carpella glabra species nova haec est arcte affinis R. densiciliato W. T. Wang, a quo caulibus glabris, foliis glabris, eis basalibus omnibus indivisis plerumque 5-nervibus, eis caulinis lanceolato-linearibus facile distinguitur. In R. densiciliato, caules puberuli, folia supra puberula margine dense ciliata, ea basalia plurima indivisa 3-nervia nonnulla 3-lobata, et ea caulina ovata vel longe elliptica sunt.*

Description Small perennial herbs. Stems ca. 2, 4-5 cm tall, glabrous, simple, ca. 2-leaved. Basal leaves ca. 10, glabrous, long petiolate; blades suborbicular, orbicular-ovate, long ovate, long elliptic, or narrow-lanceolate, 6-14 × 2-6 mm, at apex obtuse or slightly acute, at base broadly cuneate to attenuate, on margin entire, (3-)5-nerved or nerveless; petioles ca. 20 mm long, below long vaginate. Flower solitary and terminal: Sepals 5, oblong-ovate or navicular-oblong, 4-6 × 2 mm, subglabrous or sparsely ciliate. Petals 5, yellow, obovate, 6-7 × 3.8-4.2 mm, glabrous, at base not unguiculate, above base with a small nectary pit. Stamens ca. 14, glabrous; filaments linear, 1-1.5 mm long; anthers yellowish, broad-oblong, 1-1.2 × 0.6-0.8 mm. Gynoecium subglobose, 3×2 mm; carpels ca. 50, glabrous, ovaries 1 × 0.4 mm, styles ca. 0.3 mm long.

Type Specimen **Tibet (Xizang):** Longzi County, Yangcuola Pass, alt. 4569 m, alpine meadow, flowers yellow, 9 June 2018, PE Expedition 7063 (holotype)

and isotype, PE).

Taxonomic Notes This species lacks tuberous roots, has entire leaves and yellow petals, and therefore belongs to Subgen. *Ranunculus* sect. *Flammula* (Webb ex Spach) Schur (Tamura, 1995). With its suborbicular to orbicular-ovate, entire leaves, solitary terminal flowers, yellow obovate petals 6-7 mm long, and glabrous carpels, this new species is closely related to *Ranunculus densiciliatus* W. T. Wang (endemic to Dinggyê County, Tibet), which shares these morphological characteristics. It differs from the latter in having glabrous stems and leaves, all basal leaves undivided and mostly 5-nerved, and cauline leaves lanceolate-linear. In *R. densiciliatus*, the stems are puberulous, leaves are puberulous above with densely ciliate margins, most basal leaves are undivided and 3-nerved though some are 3-lobed, and cauline leaves are ovate or long elliptic (Wang, 1995).

***Ranunculus uniradicatus* W. T. Wang, sp. nov.**

Fig. 1: E-I

(Subgen. *Ranunculus* sect. *Ranunculus*)

Latin Diagnosis *Ob herbas humiles, folia reniformia, flores solitarios terminales species nova haec est leviter similis R. nyalamensi* W. T. Wang, a quo herba annua radice fibrosa singulari praedita, caulibus glabris, petalis anguste obovatis, ovarii puberulis valde differt. In *R. nyalamensi*, herba perennis radice fibrosis aliquot praedita, caules puberuli, petala obovata, et carpella glabra sunt.

Description Small annual herb, with only a single filiform fibrous root 1.5-3 cm long. Stems 4-7 cm tall, above base ca. 0.5 mm across, glabrous, simple, 2-3-leaved. Basal leaves 1-2, long petiolate; blades thinly papery, reniform, 6-8 × 8-12 mm, at base cordate, 3-lobed or 3-lobulate, central primary lobe semi-orbicular or orbicular-ovate, entire, at apex often mucronulate, lateral primary lobes unequally 2-lobed, the upper secondary lobes similar to central primary lobe but slightly smaller, and the lower secondary lobes often once again unequally lobulate; surfaces adaxially at base appressed-puberulous, white-vaginate. Cauline leaves similar to basal ones but smaller; blades 3-7 × 5-10 mm; petioles 4-23 mm long. Flower solitary, terminal: Sepals 5, navicular-obovate, 2 × 1.2 mm, glabrous. Petals 5, yellow, narrow-obovate, ca. 4 × 1.8 mm, glabrous, at apex rounded, inconspicuously 3-nerved, above base with a small nectary pit, claws inconspicuous. Stamens ca. 9, glabrous; filaments linear, 0.7-0.9 mm long; anthers yellowish, broad-oblong, 0.6-0.8 × 0.4-0.6 mm. Carpels ca. 9; ovaries ovoid, 1 × 0.6 mm, with short appressed hairs; styles ca. 0.6 mm long, glabrous.

Type Specimen Tibet (Xizang): Cona County, Longpo Township, Dujanhuahai, alt. 4281 m, scrub on slope, flowers yellow, 10 June 2018, PE Expedition 7084 (holotype and isotype, PE).

Taxonomic Notes This species lacks tuberous roots, has lobed leaves and yellow petals, and therefore belongs to Subgen. *Ranunculus* sect. *Ranunculus* (Tamura, 1995). With its low stems, reniform leaves, and solitary terminal flowers, this new species is somewhat similar to *Ranunculus nyalamensis* W. T. Wang (endemic to Nyalam County, Tibet), which shares these features. However, it differs markedly from the latter in being an annual herb with only a single fibrous root, having glabrous stems, narrow-obovate petals, and puberulous ovaries. In *R. nyalamensis*, the plant is perennial with several fibrous roots, stems are puberulous, petals are obovate, and carpels are glabrous (Wang, 1995).

Acknowledgments

Sincere thanks are due to Mr. Sun Yingbao for preparing the illustrations.

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