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Ranunculus angustisepalus (Ranunculaceae) is an *Oxygraphis* and conspecific with *O. delavayi*

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Abstract

We demonstrate that *Ranunculus angustisepalus* (Ranunculaceae) described from Bomi in southeastern Xizang (Tibet) is conspecific with *Oxygraphis delavayi*, a species widely distributed in northern Sichuan, southeastern Xizang, and northwestern Yunnan, China. We therefore place the former in synonymy within the latter. We also reduce *Ranunculus* subgen. *Stenoglossa* and *R.* sect. *Stenoglossa*, both with *R. angustisepalus* as their type, to the synonymy of the genus *Oxygraphis*.

Key words: New synonymy, *Ranunculus* sect. *Stenoglossa*, *Ranunculus* subgen. *Stenoglossa*, taxonomy, Xizang

Introduction

Ranunculus angustisepalus Wang (1995: 320) (Ranunculaceae) was described on the basis of a single specimen, *G. Yao et al.* 3294 (NAS; Fig. 1), from Bomi, southeastern Xizang (Tibet), China. In the protologue, the author stressed that this species was remarkably distinct in the genus *Ranunculus* Linnaeus (1753: 548) by having an array of unique characters, such as the narrowly oblong sepals abaxially saccate-appendiculate at base, the presence of an androgynophore, and only four stamens. As a result, he established a new subgenus, *R.* subgen. *Stenoglossa* Wang (1995: 320), to accommodate *R. angustisepalus*, although he soon reduced the subgenus to the sectional rank by proposing a new combination, i.e. *R.* sect. *Stenoglossa* Wang in Wang *et al.* (1995: 387).

In our ongoing taxonomic revision of the Chinese *Ranunculus*, *R. angustisepalus* caught our attention because of its unique morphological character combination as given by Wang (1995) and Wang & Gilbert (2001). As shown in Fig. 1, the holotype specimen of *R. angustisepalus* is rather depauperate, with the flowers seriously destroyed, but we were still struck by the great resemblance between *R. angustisepalus* and *Oxygraphis delavayi* Franchet (1886: 374), a species occurring in northern Sichuan, southeastern Xizang, and northwestern Yunnan, China. Fortunately, our survey of the specimens of *Ranunculus* kept in some of the Chinese herbaria resulted in the discovery of two isotype sheets of *R. angustisepalus* (Fig. 2). These two sheets had been previously identified correctly as *O. delavayi* on the determination slips. It is apparent that Wang (1995) did not see these two sheets when he described *R. angustisepalus* as new based on the holotype sheet at NAS. During our botanical trip in 2016 to Bomi in southeastern Xizang, the type locality of *R. angustisepalus*, we successfully found *O. delavayi*. Our careful examination of all the type specimens of *R. angustisepalus* (Figs. 1 & 2) against those (Fig. 3) and other ample specimens (four from southeastern Xizang and four from northwestern Yunnan are shown respectively in Figs. 4 & 5) of *O. delavayi*, together with our observations in the field (Fig. 6), has convinced us that the two taxa are conspecific. Their scapes are puberulent apically, the sepals are papery and deciduous, and a linear or ovate bract is often borne below the flowers. It is to be noted that *O. delavayi* is more or less variable in plant size as well as in leaf size, shape and dentation within and between populations. The variation in leaf size, shape and dentation of *O. delavayi* is apparent even in the same plant individual (e.g. the right upper one on the isolectotype sheet of this species; Fig. 3B). As shown in Fig. 4D, *O. delavayi* var. *ningchiensis* Zheng (1999: 304) is no more than a diminutive form of *O. delavayi*. The treatment of it as a synonym under *O. delavayi* by Wang *et al.* (2001) is correct and thus is accepted herein.

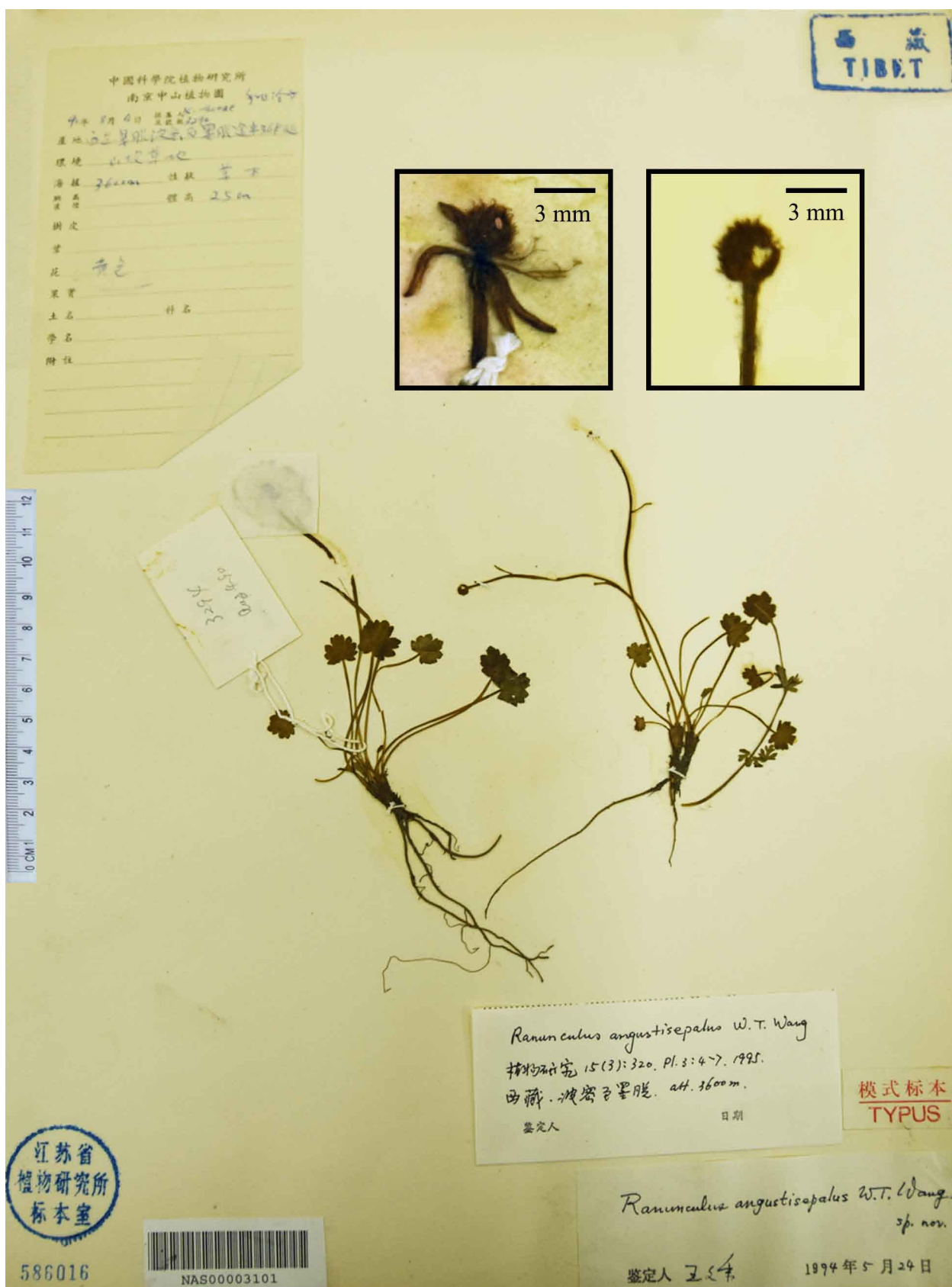


FIGURE 1. Holotype sheet of *Ranunculus angustisepalus* (= *Oxygraphis delavayi*). Inset (left): flower, with the petals and most of the stamens having fallen. Inset (right): fruit (immature).



FIGURE 2. Isotype sheets of *Ranunculus angustisepalus* (= *Oxygraphis delavayi*). The insets show various flowers with the sepals, petals or stamens having at least partly fallen.

Taxonomic treatment

Oxygraphis Bunge (1836: 46).

Type:—*O. glacialis* (Fischer ex Candolle 1824: 44) Bunge (1836: 46).

Ranunculus subgen. *Stenoglossa* Wang (1995: 320), **syn. nov.**; *R.* sect. *Stenoglossa* (Wang) Wang in Wang *et al.* (1995: 387), **syn. nov.**

Type:—*R. angustisepalus* Wang (1995: 320).

For a full synonymy of the genus *Oxygraphis* see Tamura (1995). *Oxygraphis* is a small genus of four species distributed in Asia and North America (Alaska) (Tamura 1995, Emadzade *et al.* 2010).

Oxygraphis delavayi Franchet (1886: 374). Figs. 1–6.

Type:—CHINA. Yunnan: Dali, Cang Shan (= Tsang-chan), alpine meadow at top of the mountain, 20 June 1884, *J. M. Delavay* 247 (lectotype here designated P-00186236!, isolectotype P-00186237!). Fig. 3.

= *Ranunculus angustisepalus* Wang (1995: 320), **syn. nov.**

Type:—CHINA. Xizang: Bomi, 35 km on the way from Bomi to Mêdog, grassy slope, 3600 m a.s.l., 4 August 1990, *G. Yao et al.* 3294 (holotype NAS!, isotypes XZE!). Figs. 1 & 2.

= *Oxygraphis delavayi* var. *ningchiensis* Zheng (1999: 304).

Type:—CHINA. Xizang: Nyingchi, alpine meadow, 4500 m a.s.l., 4 July 1997, *W. L. Zheng* 1085 (holotype XZE!). Fig. 4D.



FIGURE 3. Lectotype sheet (A) and isolectotype sheet (B) of *Oxygraphis delavayi*.

Notes:—For a full description of *Oxygraphis delavayi* see Franchet (1886), Liou (1980), and Wang *et al.* (2001). The flower descriptions given by Wang (1995) and Wang *et al.* (2001) for *Ranunculus angustisepalus*, particularly on the presence of an androgynophore and the number of stamens, are not accurate. The so-called androgynophore actually belongs to the exposed part of the receptacle after the falling of the stamens and petals. The stamens should be numerous, with most of them having fallen in the type material.

Among the four species of the genus *Oxygraphis*, *O. delavayi* is distinguished by the apically puberulent (vs. glabrous) scapes and papery, deciduous (vs. leathery or subleathery, persistent) sepals (Wang *et al.* 2001). From the flower colour as well as sepal shape and texture, the illustration of *O. delavayi* given by Wang (2016) in the *Higher Plants of China in Colour* should actually be referred to *O. endlicheri* (Walpers 1842: 33) Bennet & Chandra (1982: 374), a Himalayan species. In China, *O. endlicheri* is currently known only from southern Xizang (Yadong) (Wang *et al.* 2001).

Additional specimens examined:—CHINA. Sichuan: Barkam, C.L. Wu 32405 (PE); Dujiangyan, D.Z. Fu & Z.L. Zhao 87-2351 (HX); Maoxian, C. Ho & T.L. Chow 12692 (IBSC, GXMI, LBG, PE, SZ); Pingwu, Mianyang Pref. Exped. 477 (SM); Songpan, H. Smith 3269 (PE). Xizang: Bomi, B.S. Li & S.Z. Cheng 645 (PE), T.S. Ying & D.Y. Hong 1172 (PE); Mainling, B.S. Li & S.Z. Cheng 5465 (PE), C.C. Ni *et al.* 3011 (PE); Mêdog, S.Z. Cheng & B.S. Li 59 (PE), S.Z. Cheng & B.S. Li 99 (PE), S.Z. Cheng & B.S. Li 116 (PE), S.Z. Cheng & B.S. Li 130 (PE). Yunnan: Binchuan, H.C. Wang 2013 (PE); Dali, G. Forrest 11602 (PE); Dêqên, K.M. Feng 5095 (KUN), K.M. Feng 6202 (KUN, PE), K.M. Feng 6619 (KUN, PE), K.M. Feng 6665 (KUN, PE), K.M. Feng 6864 (KUN, PE), PE Hengduan Shan Exped. 3582 (PE), T.T. Yu 8644 (KUN, PE), T.T. Yu 8731 (KUN, PE); Fugong, Gaoligong Shan Biod. Surv. 27132 (PE); Gongshan, K.M. Feng 7768 (KUN), K.M. Feng 7872 (KUN, PE), Gaoligong Shan Biod. Surv. 31347 (PE), Gaoligong Shan Biod. Surv. 31672 (PE), S. Jiang *et al.* 9323 (KUN, PE), T.T. Yu 19371 (KUN, PE), T.T. Yu 19862 (KUN, PE), T.T. Yu 22260 (KUN, PE), T. T. Yu 22264 (IBSC, KUN, PE), T.T. Yu 22277 (KUN, PE), T.T. Yu 22359 (KUN, PE), T.T. Yu 23193 (KUN, PE); Weixi, K.M. Feng 4272 (KUN, PE), PE Hengduan Shan Exped. 1498 (PE).

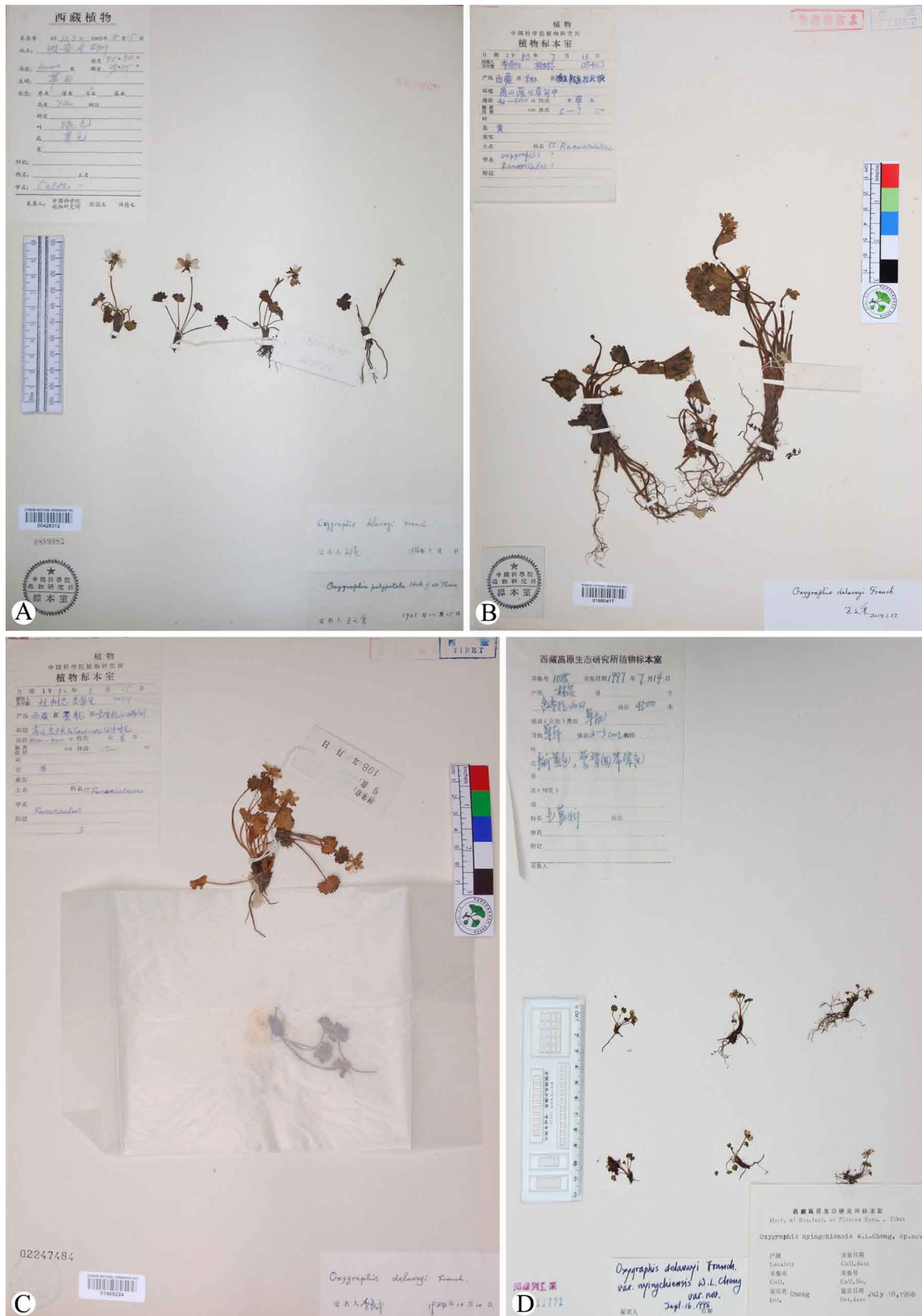


FIGURE 4. Specimens of *Oxygraphis delavayi* from southeastern Xizang, China. A. Bomi, T.S. Ying & D.Y. Hong 1172 (PE). B. Mainling, B.S. Li & S.Z. Cheng 5465 (PE). C. Mêdog, S.Z. Cheng & B.S. Li 116 (PE). D. Nyingchi, W. L. Zheng 1085 (XZE, holotype of *O. delavayi* var. *ningchiensis*).

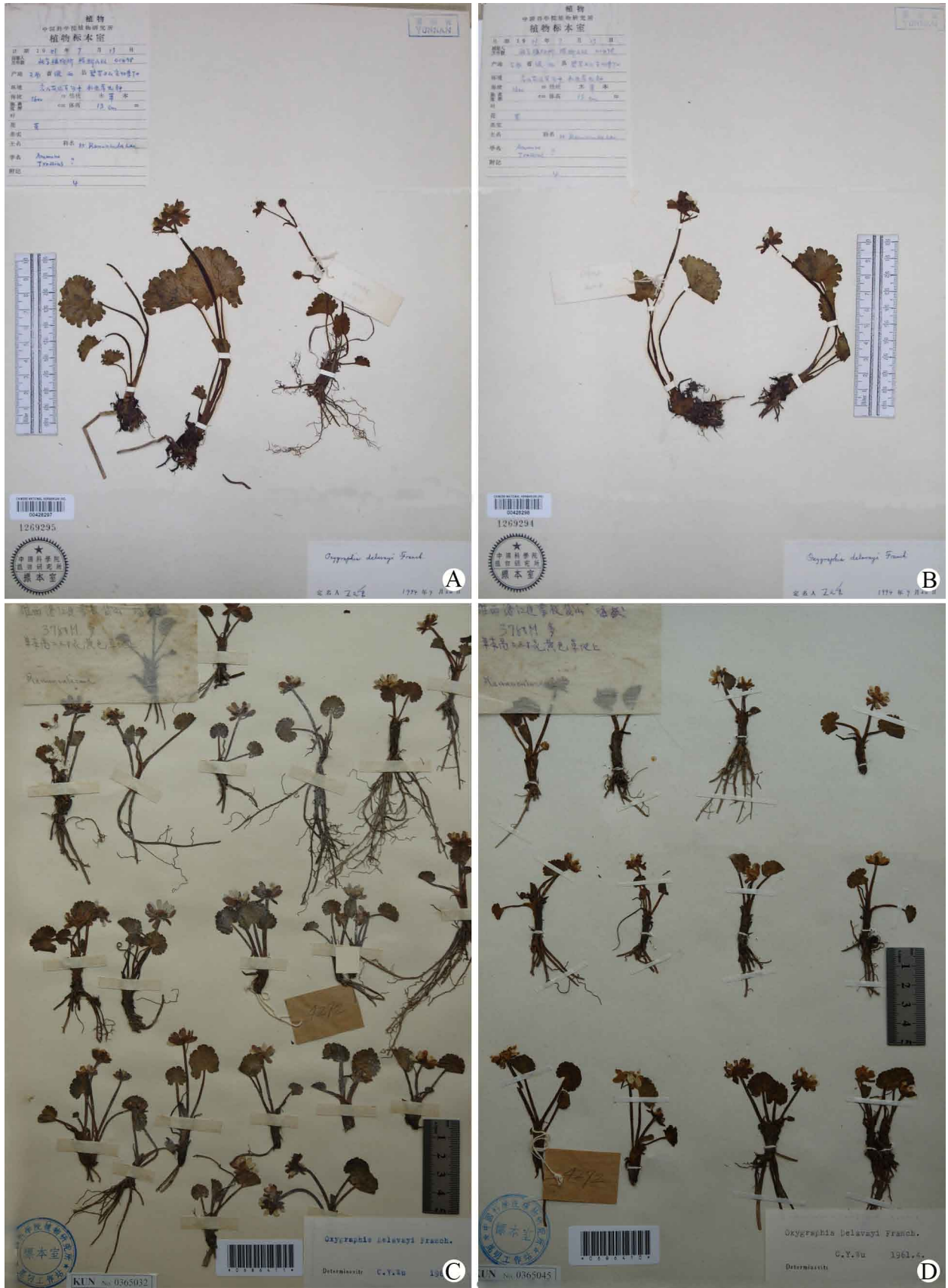


FIGURE 5. Specimens of *Oxygraphis delavayi* from Weixi, northwestern Yunnan, China. A, B. PE Hengduan Shan Exped. 1498 (PE). C, D. K.M. Feng 4272 (KUN).



FIGURE 6. *Oxygraphis delavayi* in the wild. A. Galongla Shan, Bomi, southeastern Xizang, China. B. Dêqên-Gongshan pass, northwestern Yunnan, China.

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