



Reinstatement of *Persicaria sinica* Migo (Polygonaceae, Persicarieae)

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Abstract

Persicaria sinica (\equiv *Polygonum sinicum*) was considered as a synonym of *Polygonum thunbergii* (\equiv *Persicaria thunbergii*), and its specimens were frequently identified as the latter, or occasionally as *Polygonum dissitiflorum* (\equiv *Persicaria dissitiflora*). However, a detailed analysis of the type materials and additional specimens clearly indicates that *P. sinica* is a distinct species, which can be easily distinguished from *P. thunbergii* and *P. dissitiflora*, as well as other species of *Persicaria* section *Echinocaulon* (\equiv *Polygonum* section *Echinocaulon*) by habit, the shape of the leaf blade, the apex of the ocreae, the structure of the inflorescences, the indumentum and color of the peduncles, and the shape and surface of the achenes. The specific status of *P. sinica* is thus reinstated. Additionally, complete taxonomic description, geographic distribution, ecological observations, and a key to distinguish the related species are also provided.

Key words: China, morphology, *Persicaria*, reinstatement, section *Echinocaulon*, taxonomy

Introduction

Though the genus *Persicaria* (Linnaeus 1753: 360) Miller (1754) was often treated as a synonym of *Polygonum* Linnaeus (1753: 359), the segregation of *Persicaria* from *Polygonum* has been supported by numerous studies (Hedberg 1946, Haraldson 1978, Ronse Decraene & Akeroyd 1988, Ronse Decraene *et al.* 2000, Kim & Donoghue 2008a, Galasso *et al.* 2009, Sanchez *et al.* 2009, Burke *et al.* 2010, Sanchez *et al.* 2011, Schuster *et al.* 2011). In the updated taxonomy of the buckwheat family, *Persicaria* has been placed in the redefined tribe Persicarieae in subfamily Polygonoideae (Sanchez *et al.* 2011). Within *Persicaria*, Haraldson (1978) recognized four sections based on vegetative anatomy viz., *Cephalophilon* (Meisner 1832: 59) H. Gross (1913a: 27), *Echinocaulon* (Meisner 1832: 58) H. Gross (1913a: 27), *Persicaria* (Miller 1854) H. Gross (1913a: 27) and *Tovara* (Adanson 1763: 276) H. Gross (1913a: 27), while Ronse Decraene *et al.* (2000) suggested to include *Rubrivena* (M. Král 1985: 65) S. P. Hong (1993: 112) as another section based on fruit morphology and anatomy. In recent molecular phylogenetic analyses, the four sections recognized by Haraldson were well supported (Kim & Donoghue, 2008a, b), while sect. *Rubrivena* was excluded (Galasso *et al.* 2009, Burke *et al.* 2010, Sanchez *et al.* 2011). In addition, two sections, *Amphibia* and *Truelloides* (Tzvelev, 1987: 75, 76) were suggested to be adopted (Galasso *et al.* 2009).

Plants in the section *Echinocaulon* are characterized by the presence of recurved prickles on stems, petioles, and abaxial surfaces of major leaf veins, by predominantly creeping habit, and by the hastate or sagittate leaf base (Galasso *et al.* 2009). The taxonomic group, *Echinocaulon* contains about 21 species which are mainly distributed in East Asia (Park 1988). Fourteen species were recognized as the member of section *Echinocaulon* in *Flora of China* (Li *et al.* 2003). Park (1986, 1988) has clarified the nomenclature and typification of all known species of *Polygonum* sect. *Echinocaulon* Meisner (1832: 58) (\equiv *Persicaria* sect. *Echinocaulon*) in his monograph of the section. However, *Persicaria sinica* Migo (1939: 143) was not fully considered in his works.

Persicaria sinica (Fig. 1) was described by Migo (1939) based on materials collected from Hangzhou, Zhejiang Province of China. He noted that the species was similar to *P. thunbergii* (Siebold & Zuccarini 1846: 208) H. Gross (1913b: 275) and *P. maackiana* (Regel 1861: 127) Nakai ex T. Mori (1922: 132), but differed from them by having loose paniculate inflorescences formed by 2-4 flowered capitula, subglobose achenes, subglabrous leaf blades, and ocrea apex without herbaceous wings. Fang & Zheng (1986) recognized this species and proposed a new combination, *Polygonum sinicum* (Migo) Fang & Zheng (1986: 222). Fang and Zheng's treatment was

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