



## *Sorbus dolichofoliolatus* (Rosaceae), a new species from Yunnan, China

MENG LI<sup>1,2</sup> & XIN-FEN GAO<sup>1\*</sup>

<sup>1</sup>Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu, Sichuan 610041, China

<sup>2</sup>University of Chinese Academy of Sciences, Beijing 100049, China

\*Author for correspondence. Email: xfgao@cib.ac.cn

### Abstract

*Sorbus dolichofoliolatus* (Rosaceae) *sp. nov.* from Yunnan Province, China, is described and illustrated based on the collections deposited at the herbarium CDBI. The new species is similar to *S. rehderiana* in infructescence with sparsely rust-brown short hairs, fruit size, and glabrescent leaflets, but the former has longer and wider leaflets, persistent stipules and pinkish fruit color. A molecular phylogenetic analysis supports that the new species is distinguishable from related species in the genus.

**Key words:** Molecular phylogeny, new species, *Sorbus*

### Introduction

*Sorbus* Linnaeus (1753: 477) *sensu lato* (Rosaceae) contains approximately 260 species around the world (Phipps *et al.* 1990, Aldasoro *et al.* 2004). Most of them occupy the temperate zone of the Northern Hemisphere (Huntley 1993). *Sorbus sensu lato* have been demonstrated as being polyphyletic (Lo & Donoghue 2012), and might be separated into five genera: *Aria* Persoon (1806: 38), *Chamaemespilus* Medikus (1789: 138), *Micromeles* Decaisne (1874: 125), *Sorbus*, and *Torminalis* Medikus (1789: 134). *Sorbus sensu stricto* is recognized to include 70–80 species, having the pinnate-leaved rowans (McAllister *et al.* 2005). They included a number of sexual and apomictic species in different regions (Robertson *et al.* 2010). The Himalayan region is thought to be one of the origin centers of this greatly diversified genus (Lo & Donoghue 2012).

*Sorbus (sensu stricto)*, except as hereinafter provided) is typically characterized by pinnately compound leaves with soft seed coat, which is unique in subfamily Maloideae. However, identification in this genus is often difficult because most *Sorbus* species represent high level of similarity in flower structure and their insipid flower color. Even though useful flower morphological characteristics are limited, most of non-reproductive organs' morphological characteristics (concentrated on pairs of leaflets, leaflet size, serra position, stipules shape, fruits color and indumentums, size and shape of bud) also show its importance and specific value to the taxonomy at species level for the genus *Sorbus*, specially in a particular local area (Lu & Stephen 2003, Rushforth 2009).

While working on the family Rosaceae for the project *Flora of Pan-Himalayas*, we have conducted three expeditions to Sichuan, Yunnan, Xizang (Tibet) in China to collect wild samples of *Sorbus*. The authors have found that several collected accessions are represented by markedly different specimens from other species of *Sorbus*. We examined all available holotype pictures of *Sorbus* from the herbaria A, E, and K. We also examined all specimens of *Sorbus* at CDBI and KUN. Further studies of the specimens confirmed that these unidentified specimens represent an undescribed species. To confirm the genetic uniqueness of the new species we generated sequences of one single-copy nuclear gene region conducted a phylogenetic analysis the close relatives of the new species included.