



***Primulina sinovietnamica* (Gesneriaceae), a new species identified by both morphological and molecular characters from the limestone area in Guangxi, China**

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Abstract

A new species of Gesneriaceae from Southwest Guangxi, China is described here as *Primulina sinovietnamica*. This previously unknown species is morphologically similar to *P. pungentisepala* and *P. ningmingensis*, but can be distinguished from the latter two taxa by several non-overlapping morphological characters. This hypothesis is consistent with the molecular phylogenetic tree based on sequences of the chloroplast *matK* gene, confirming evolutionary affinity of the new species to the two morphologically similar taxa. The three sampled individuals from the two presently known populations of the new species cluster together in the phylogenetic analysis, separated from the other two closest taxa by two common base substitutions, confirming the recognition of this new species.

Introduction

Primulina Hance was described as a monospecific genus in the diverse family Gesneriaceae, which long remained to comprise only the single species *Primulina tabacum* Hance (1883: 169). It was presumed to be related to *Chirita* Buch.-Ham. but *P. tabacum* differs in having unusual salverform flowers with an almost actinomorphic patent limb (Weber *et al.* 2011). The generic status of *Primulina* was challenged by later studies in which *P. tabacum* was placed in *Chirita*, as they have similar morphological traits in stigma and rosette habit with opposite leaves, and the unusual salverform flower was assumed to be possibly resulting from a pollinator shift from bee to butterfly (Wang *et al.* 1990, 1998, Li & Wang 2004). Recent molecular studies further suggested that *Primulina tabacum* was deeply embedded in the section *Gibbosaccus* of *Chirita*, while the genus *Chirita* (as well as its major sections including *C.* section *Gibbosaccus*) was polyphyletic, which at least represented five lineages of independent origin (Wang *et al.* 2011, Weber *et al.* 2011). In the reorganising of *Chirita* and its allied genera based on molecular phylogenies, *Chiritopsis* W.T.Wang, *Wentsaiboea* D.Fang & H.D.Qin (except *W. tiandengensis* Yan Liu & B.R.Pan (2010: 739), a species found to be more closely related to *Lagarosolen* W.T.Wang [Möller *et al.*, 2011]) and the large number of species described in section *Gibbosaccus* of genus *Chirita* were transferred to *Primulina* due to its taxonomic priority, and this monotypic genus henceforth was expanded dramatically to accommodate over 130 taxa (Weber *et al.* 2011). The genus *Chirita* was subsequently abandoned.

The expanded *Primulina*, as well as other lineages of Gesneriaceae, are still growing because of the numerous new species that are being constantly discovered. Within the past several years, at least dozens of new species of *Chirita*, particularly in the section *Gibbosaccus* (of which most taxa have been recently transferred into *Primulina*) have been described mostly from the main centre of diversity in South China (e.g.