Taxonomic notes on Chinese *Lilium* L. (Liliaceae) with proposal of three nomenclatural revisions

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Abstract

In this revision, we treat *Lilium wenshanense* L.J. Peng & F.X. Li, *L. jinfushanense* L.J. Peng & B.N. Wang and *L. huidongense* J.M. Xu from China as synonyms of *L. brownii* F.E. Brown ex Miellez, *L. taliense* Franchet and *L. lijiangense* L.J. Peng, respectively. We justify the synonymy by demonstrating the existence of continuous morphological variation, which we observed in the field and among herbarium specimens.

Key words: Hengduan Mountains, *Lilium*, taxonomic revision, synonym

Introduction

The genus *Lilium* Linnaeus (1753: 302) exhibits great diversity in China, especially in the Hengduan Mountains Region (HDM hereafter) (Haw 1986; Gao et al. 2013a). Specifically, ca. 30 species of *Lilium* are distributed in southwestern China, including the HDM, according to the *Flora of China* (Liang and Tamura 2000). Recent research (Gao et al. 2012, 2013a, b) shows that *Lilium* also includes ca. 8 species formerly referred to *Nomocharis* Franchet (1889: 113), which is largely endemic to southwestern China, especially the HDM.

*Lilium* is typical of uncertain taxonomic resolution within HDM genera. On the one hand, two new species of *Lilium* native to the HDM have been published in the past two years (Gao et al. 2012, 2013b), and one of the authors of the present study (Gao Y-D) has proposed that many more new *Lilium* taxa may exist within the region. On the other hand, several *Lilium* species that have been accepted by the authoritative *Flora of China* may not merit species rank. In this paper we will provide a revised treatment of HDM *Lilium* based on several lines of evidence.

Materials and methods

Over the last few years, we completed more than ten expeditions in southwestern China to collect *Lilium* and its allied genera with the aim to build a comprehensive molecular phylogeny of this genus. As we made progress on the project, we recognized that some taxonomic questions needed to be clarified. In particular, we noted that several HDM endemic species, which were published in 1980s, were documented only by their types or by a few collections. We realized the importance of reevaluating the taxonomic ranks of species represented by rare collections. Thus, we rigorously examined specimens in China, visited herbaria (CDBI, KUN, PE, and SZ), and used images in the Chinese Virtual Herbarium repository (CVH, http://www.cvh.org.cn/). Additionally, we obtained images of specimens of *Lilium* from P, K and E herbaria.


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