



Additions to the Flora of China: seven new species of *Elatostema* (Urticaceae) from the karst landscapes of Guangxi and Yunnan

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Abstract

Seven new species of *Elatostema* from southwestern China are described and illustrated. Affinities of the species are discussed and Global Species Conservation Assessments presented. The new species are: *E. celingense* (Critically Endangered) which most closely resembles *E. backeri*, *E. hezhouense* (Critically Endangered) which most closely resembles *E. ichangense*, *E. lui* (Vulnerable) which most closely resembles *E. platyceras*, *Elatostema multicaule* (Vulnerable) which most closely resembles *E. asterocephalum*, *E. nianbense* (Vulnerable) which most closely resembles *E. filipes*, *E. retrorstrigulosum* (Endangered) which most closely resembles *E. balansae* and *E. yachense* (Vulnerable) which most closely resembles *E. xinningense*. All of the new species are endemic to China.

Key words: cave flora, limestone karst, Global Conservation Assessments

Introduction

Elatostema Forster & Forster (1775: 53; Urticaceae) consists of several hundred species of understory herbs and subshrubs that occur in the deep shade of forests, stream sides, gorges and caves. *Elatostema* occurs throughout tropical and subtropical Africa, Asia, Australia, and Oceania but is notably absent from the Neotropics. In Southeast Asia the genus is most diverse on limestone karst (Yahara 1984, Lahav-Ginott & Cronk 1993, Wang & Chen 1995, Qi *et al.* 2003).

Elatostema forms part of a complex of genera, which includes *Elatostematoides*, *Pellionia* and *Procris* whose generic limits are difficult to define. Of these, *Elatostema* is the oldest name (Forster 1775). *Elatostematoides* has not been widely recognized or used since its description by Robinson (1911) and is treated as a synonym of *Elatostema* (Friis 1989). There is however little consensus as to the delimitation of *Elatostema*, *Pellionia* and *Procris* and disagreement has centred on the use and interpretation of two main suites of characters, inflorescence branching morphology and staminate flower perianth morphology. The recent incorporation of DNA sequence data from the plastid genome (Hadijah *et al.* 2003) is limited by small taxon sampling and has done little to resolve generic delimitation. Hadijah *et al.* (2003) recovered the complex as monophyletic but the genera within it paraphyletic. Monro *et al.* (in prep.) recovered *Elatostema* and a combined *Procris* and *Pellionia* as monophyletic. The taxa described here would be considered *Elatostema sensu stricto*. To date, 998 species names of the *Elatostema* complex of genera (*Elatostema*, *Elatostematoides*, *Pellionia* and *Procris*) have been published (IPNI 2008) and current published species estimates range from 250 (Chew 1989) to 400 species (Yahara 1984). In China 146 species are currently recognized (Qi *et al.* 2003). Assuming levels of synonymy of only 10% as for *Pilea* (Monro 2004), a genus with similar habit and

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