



## Additions to the Flora of China: three new species of *Elatostema* (Urticaceae) from Guangxi

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### Abstract

Three new species are described and illustrated and their conservation status assessed: *Elatostema laevicaule* W.T. Wang, A.K. Monro & Y.G. Wei, *E. androstachyum* W.T. Wang, A.K. Monro & Y.G. Wei and *E. heterocladum* W.T. Wang, A.K. Monro & Y.G. Wei. All are rare endemic species from Guangxi Province, China, and are only known only from their type localities. *E. laevicaule* is most similar to *E. filipes* and is assessed as Vulnerable (VU), *E. androstachyum* is most similar to *E. parvum* and is assessed as Vulnerable (VU); *E. heterocladum* is most similar to both *E. androstachyum* and *E. luxiense* and is assessed as Vulnerable (VU).

### Introduction

*Elatostema* J.R. Forster & G. Forster (1775: 53; Urticaceae) consists 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* appears to be of little economic use although several species are used in combination with other plants in traditional folk medicine in Southeast Asia and the Pacific (Bourdy & Walter 1992, Nandwani *et al.* 2008, He *et al.* 1991).

*Elatostema* forms part of a complex of genera which includes *Elatostematoides* Robinson (1911: 497), *Pellionia* Gaudichaud in Freycinet (1830: 494) and *Procris* Commerson ex Jussieu in Jussieu (1789: 403) 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 widely treated as *Elatostema* (Friis 1989). There is however little consensus as to the delimitation of *Elatostema*, *Pellionia* and *Procris*. 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, Wu *et al.* 2013.) has done little to resolve generic delimitation. To date, 1121 species names of the *Elatostema* complex of genera (*Elatostema*, *Elatostematoides*, *Pellionia* and *Procris*) have been published (IPNI 2013) and current published species estimates range from 250 (Chew 1989) to 400 species (Yahara 1984). Assuming levels of synonymy of only 10% as for *Pilea* (Monro 2004), a genus with similar habit and habitat, the species number could be ca 1000. Within China 210 species are reported and of these 64 have been described subsequent to the Flora of China treatment of 2003 (Duan & Lin 2010, Lin & Duan 2008, Lin *et al.* 2011, Wang 2003, 2006, 2010a,

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