Elatostema scaposum sp. nov. (Urticaceae) from Guizhou, China

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Elatostema scaposum Q. Lin & L. D. Duan (Urticaceae: Elatostema sect. Pellionioides W. T. Wang), a new species from Libo County, Guizhou Province, China, is described and illustrated. This species was found growing at the base of a large limestone chamber at an altitude of ca 800 m a.s.l., and differs from all other species in Elatostema sect. Pellionioides W. T. Wang by scapiform male inflorescences (axillary in other species of Elatostema sect. Pellionioides).

The genus Elatostema J. R. Forster & G. Forster belongs to the family Urticaceae, and consists of ca 300 species from tropical, subtropical Africa, Asia and Oceania. 148 species occur in China and 31 species in Guizhou Province (Lin et al. 2003, Lin and Duan 2008). Elatostema is characterized and distinguished from other genera of Urticaceae by its inflorescences of determinate capitula with receptacles and involucres.

A recent molecular phylogenetic study of Urticaceae revealed that Elatostema as circumscribed by W. T. Wang (Wang and Chen 1979, Wang 1980) is not monophyletic (Hadiah et al. 2008). However, it is necessary to analyse more samples and sequences to evaluate the phylogeny of the genus.

The most recent infrapopular classification of Chinese Elatostema was proposed by W. T. Wang (Wang and Chen 1979, Wang 1980), who divided the genus into five sections (viz. Pellionioides W. T. Wang, Weddelia (H. Schroeter) W. T. Wang, Laveispéma (Hatusima) Yamazaki, Elatostema and Androgyne Weddell), mainly based on a series of characters, such as nerve type, pattern of male inflorescence, presence/absence of male receptacle, presence/absence of involucr, pauciflorous/multiflorous female inflorescence, conspicuous/obscure female receptacle, ribbed/smooth achene, etc. (Table 1). In Wang’s revision, Elatostema sect. Pellionioides W. T. Wang comprised 10 species (Wang 1980, 1990). We have examined many non-Chinese Elatostema specimens and conclude that Wang’s sectional classification is applicable worldwide.

During an expedition in Libo County, south Guizhou Province, southwest China in Oct–Nov 2003, a previously unknown species, belonging to Elatostema sect. Pellionioides W. T. Wang (Wang and Chen 1979), was collected at the base of a large limestone chamber at an altitude of ca 800 m a.s.l., between 25°7′–25°9′N, 107°37′–108°18′E. This species was found to be very distinct as compared with the other species in this section, by its scapiform male inflorescence (axillary in the other species of Elatostema sect. Pellionioides W. T. Wang). It is described and illustrated herein as a new species.

Material and methods

Our morphological studies are based on about 6000 specimens from the herbaria AU, BM, CCNU, CDBI, CSFI, E, FNU, FJSI, GFS, GXMII, GZAC, GZTM, HAST, HIB, HGAS, HXBB, HITBC, HNNU, IBK, IBSC, K, KUN, L, LBG, NAS, P, PE, SZ, TUS, YUKU, WH, WU and ZFJC, including the types of 10 species of Elatostema sect. Pellionioides W. T. Wang. In addition, field studies were carried out in Oct–Nov 2003 as well as Nov 2009 in Guizhou Province, China. Morphological features of the new species have been compared with those of closely related species.

Elatostema scaposum Q. Lin & L. D. Duan sp. nov. (Fig. 1–2)

Habitus Elatostemati oblongifolio Fu ex W. T. Wang valde simile, sed caulibus 50–90 cm altis (non 20–50 cm), inflorescentiae masculinae scapiformes (non axillaris), pedunculi inflorosentiarum 5–15 mm longis (non 0.5–3.0 mm), scapus 15–60 cm altus (non absent) differt.

### Table 1: Comparison of morphological characteristics among five sections in *Elatostema*

<table>
<thead>
<tr>
<th>Section</th>
<th>Leaf blade</th>
<th>Male inflorescence</th>
<th>Female inflorescence</th>
<th>Achene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pellionioides W. T. Wang</td>
<td>pinnate, major basal lateral veins asymmetric, 2 basal, other arising above base</td>
<td>simple, involucrle absent; receptacle small, obscure.</td>
<td>sessile, with 1-10 flowers, involucrle obscure, receptacle conspicuous, flat.</td>
<td>small, ribbed, smooth.</td>
</tr>
<tr>
<td>Weddelia (H. Schroeter) W. T. Wang</td>
<td>pinnate, major basal lateral veins absent and venation pinnate.</td>
<td>simple, involucrle absent; receptacle small, obscure.</td>
<td>sessile, with 1-10 flowers, involucrle obscure, receptacle conspicuous, flat.</td>
<td>small, ribbed, smooth.</td>
</tr>
<tr>
<td>Laevisperma (Hatusimal) Yamazaki</td>
<td>pinnate, major basal lateral veins absent and venation pinnate.</td>
<td>simple, involucrle absent; receptacle small, obscure.</td>
<td>sessile, with 1-10 flowers, involucrle obscure, receptacle conspicuous, flat.</td>
<td>small, ribbed, smooth.</td>
</tr>
<tr>
<td>Androsyce Wedd.</td>
<td>pinnate, major basal lateral veins absent and venation pinnate.</td>
<td>simple, involucrle absent; receptacle small, obscure.</td>
<td>sessile, with 1-10 flowers, involucrle obscure, receptacle conspicuous, flat.</td>
<td>small, ribbed, smooth.</td>
</tr>
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</table>

**Distribution, habitat and phenology**

*Elatostema scaposum* is only known from its type locality, Baibidong, Jialiang, libo County, south Guizhou Province, southwest China. Here it grows only at the base of a large limestone chamber at an altitudes of 750–800 m a.s.l., between 25°7′–25°9′N, 107°37′–108°18′E and there are only 12 clumps in this chamber. *Elatostema scaposum* flowers during Oct–Nov and fruits in Nov–Dec.

**Similar species**

*Elatostema scaposum* is a member of *Elatostema* sect. *Pellionioides* as evident by the leaf venation being pinnate and lacking major basal lateral (secondary) veins, the male inflorescences cymose, branched and lacking involucrle with alternate bracts and lacking receptacle, female inflorescences small, multiflorous, with flat receptacle, and achenes small and ribbed. It appears to be closely related to *E. oblongifolium* Fu ex W. T. Wang (Wang 1980) in the same section, but differs with regard to the following features: stems 50–90 cm tall (vs 20–50 cm tall); male inflorescences scapiform (vs axillary); male peduncle 5–15 mm long (vs 0.5–3.0 mm long); male scapes 15–60 cm tall (vs scapes absent).
Figure 1. *Elatostema scaposum* Q. Lin & L. D. Duan sp. nov. (Q. Lin and L. D. Duan 1023, PE). (A₁–₄) habit, (A₁) female branch, (A₃–₄) male scape, (B) portion of male inflorescence, (C) male flower. (L. D. Duan and Q. Lin 2003001, PE), (D) achene. Drawn by Ai-Li Li.
permission to examine specimens, and we also thank Mrs Ai-Li Li for the drawing.

References