



Selaginella chuweimingii (Selaginellaceae) sp. nov. from Yunnan, China

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Abstract

A new lycophyte species, *Selaginella chuweimingii*, from central Yunnan, China is described and illustrated. *Selaginella chuweimingii* is similar to *S. sinensis* in the habit and the morphology of strobili and sporophylls, but the new species can easily be distinguished from the latter by having ovate or oblong-ovate ventral leaves, extremely asymmetrically dorsal leaves, and oblong-ovate to ovate-lanceolate axillary leaves. Also the new species has lamellate ornamentation on megaspore surfaces and less prominent verrucae and ridges on microspore surfaces. The two species are further separated in geographical distribution with the new species occurring in central Yunnan Province while *S. sinensis* in northern and eastern China.

Key words: Articulate group, megaspores, microspores, sporangial arrangement, *Selaginella sinensis*

Introduction

Selaginella Beauvois (1804: 478) contains ca. 700–800 species (Jermy 1990, Tryon & Lugardon 1991, Zhou & Zhang unpublished data). The species of *Selaginella* from China was recently treated by Zhang *et al.* (2013), in which 72 species were recognized while some taxa remained dubious. These taxa in question are mainly described by Chu (2006) from Yunnan Province (e.g., *S. effusa* Alston (1932: 65) var. *dulongjiangensis* W.M. Chu (2006: 87), *S. hengduanshanicola* W.M. Chu (2006: 47), *S. jugorum* Handel-Mazzetti (1929: 8), and *S. monospora* Spring (1850: 135) var. *ciliolata* W.M. Chu (2006: 91), suggesting that species of *Selaginella* from Yunnan are still understudied. Yunnan has the highest species number of *Selaginella* in China and 53 species were documented (Chu 2006).

Upon examining the material of *Selaginella* at the herbarium PYU, several specimens collected from central Yunnan and tentatively labeled as "*Selaginella centroyunnanensis*" (*nom. nud.*) by Xian-Chun Zhang, came to our attention. Subsequent fieldwork was conducted by one of us (X.-M. Z) in October 2014. Based on our studies of macro-morphology, spore features (also see Zhou *et al.* 2015a), and molecular characters (Zhou *et al.* 2015b), we confirm that the material from central Yunnan represents an undescribed species which is described and illustrated herein.

Material and Methods

Megaspores were selected under anatomical, then attached to Carbon Adhesive Tape (CAT). The microspores were directly attached to CAT. Spores were coated with gold using the BAL-TEC SCD 005 Cool Sputter Coater (BAL-TEC AG., Liechtenstein) at Yunnan University, Kunming, China. Samples were examined with a QUANTA 200 Scanning Electron Microscope (SEM) (FEI Co., USA) at 25 kV.

Descriptive terms for the spore follow Minaki (1984), Liu *et al.* (1989), Tryon & Lugardon (1991), Chu (2006), and Punt *et al.* (2007). Observation and measurement of leaves were carried out under anatomical lens.