

Flora of China Illustrations



*Lycopodiaceae through
Polypodiaceae*

2-3

Flora of China Illustrations

Lycopodiaceae through Polypodiaceae

Wu Zhengyi (吴征镒) and Peter H. Raven

Co-chairs of the editorial committee

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Polypodiaceae*

2–3

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Professor Wu Sugong (武素功 Wu Su-Kung), who died on 9 March 2013, at the age of 78, was a prominent field botanist at the Kunming Institute of Botany, Chinese Academy of Sciences. His research interests focused on pteridophytes and floristic studies. Altogether, he published some 69 books, book chapters, papers, and articles, including about 220 nomenclatural novelties. He is also commemorated by *Cheilanthes wusukungii* Miyam. & H. Ohba (Pteridaceae) and *Dryopteris wusugongii* Li Bing Zhang (Dryopteridaceae).

Professor Wu was born on 13 July 1935, in a village in Taigu County, Shanxi Province. At a young age, he sadly lost both of his parents and this early hardship profoundly affected his later life. In 1955, at the age of only 20, he began his career at the Institute of Botany, Chinese Academy of Sciences, Beijing. In 1961, he moved to Yunnan and joined the staff at Kunming Institute of Botany. He gained his initial botanical knowledge from his seniors, especially from Prof. Wu Zhengyi (吴征镒 Wu Cheng-Yih) and Prof. Ching Ren-Chang (秦仁昌 Qin Renchang). Between 1984 and 2008, he collaborated with Japanese botanists in a number of botanical expeditions mostly to South and Southwest China. In the 1990s, his expedition to Kekexili (Hoh Xil), an unpopulated area on the Qinghai-Xizang Plateau, facilitated the establishment of the Kekexili National Nature Reserve. Between 2003 and 2012, he was awarded three grants from the National Geographic Society, in the United States, to study the fern diversity in Indochina, a global biodiversity hotspot, which he visited seven times. Everywhere he went he made friends with local people and he was held in high regard by many of the ethnic minorities in Southwest China, where frequently he was invited into local villagers' homes.

Throughout his almost six-decade career, he participated in and organized more than 20 multi-disciplinary scientific expeditions. Many places he visited were biodiversity blind spots. From the Yunnan-Guizhou Plateau to the Qinghai-Xizang Plateau, from the headwaters of the Three Rivers (Chang Jiang (Yangtze)), Huang He (Yellow River), and Lancang Jiang (upper Mekong) to the Mekong River Basin, from Svalbard in the Arctic region to tropical Indochina, he experienced countless unimaginable difficulties, and even a couple of life-threatening incidents. He collected over 100,000 plant specimens and made many valuable contributions to biodiversity conservation and sustainable development.

His excellent experience in fieldwork won him the Zhu Kezhen Prize in 1983. His study of the uplift of the Qinghai-Xizang Plateau and its impact on the natural environment and human activity won him the first prize of the National Natural Science of China in 1988. He also won Model Citizen of Yunnan Province in 1998, second prize of the Chinese Academy of Sciences in 1999, and first prize in Natural Science of the Yunnan Province in 2003.

In *Flora of China* Volume 2–3 (pteridophytes), Prof. Wu is a co-author of the accounts of *Arachniodes* and *Dryopteris* (Dryopteridaceae). In consideration of his lifetime contributions, the Joint Editorial Committee unanimously agreed to dedicate *Flora of China Illustrations* Volume 2–3 to the memory of Prof. Wu Sugong.

IN MEMORIAM



PROF. WU SUGONG (武素功)
(13 July 1935 – 9 March 2013)

PREFACE

The first volume of the English language *Flora of China* appeared in 1994. In order to increase the usefulness of these text volumes, and to make available the beautiful drawings used for the previously published Chinese language *Flora Reipublicae Popularis Sinicae* (FRPS), the *Flora of China Illustrations* series was started in 1998. The illustrations series follows the taxonomy of the text series, but some modifications in presentation have been made so that FRPS figures can fit into the present scheme. Additional illustrations are also included for taxa not or insufficiently illustrated in FRPS.

This publication is the last in a series of 22 volumes of the *Flora of China Illustrations*. It accompanies the *Flora of China* (FOC) Volume 2–3, which was published in 2013 and treats 38 families, 177 genera, and 2,129 species of ferns and lycophytes. This volume of illustrations includes 1,272 plates representing a total of 1,409 species in 165 genera.

The illustrations are generally arranged according to the sequence of tribes, genera, and species in FOC Volume 2–3, except when a figure includes more than one taxon, in which case the sequence is determined by the first species listed in the compound figure. Many species are illustrated on more than one plate to show morphological variations. Scale bars are given for some of the plates.

Names of recognized taxa are in boldface, and author names follow FOC. Each recognized taxon is followed by its Chinese name and the pinyin transliteration of that name. Important synonyms and misapplied names are cited before the Chinese names. Page numbers for the descriptions in FOC and for the figure number, volume number, and year of publication of the FRPS volume, as well as names of artists and sources of illustrations in the case of redrawings or reproductions, are listed in parentheses at the end of each caption.

Indexes to figure numbers are given for the Chinese names, their pinyin transliterations, and the scientific names.

Wu Zhengyi (吴征镒)

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We also thank the illustrators for their wonderful artwork; their names are listed on a previous page in sequence of the number of illustrations made and then alphabetically by pinyin or English name.

Rosemary Tanaka helped with the captions. Doug Holland and Randy Smith helped obtain some of the plates. Nicholas J. Turland is thanked for providing the image of Prof. Wu Sugong (武素功).

Allison M. Brock coordinated the publishing process. Cassadra L. Howard helped with proofreading the plates and captions. Several other individuals at Science Press and Missouri Botanical Garden are appreciated for their professional assistance to the project, namely, Han Xuezhe (韩学哲), Zeng Jianfei (曾建飞), Xing Xiaochen (邢晓晨), Huo Chunyan (霍春雁), Wang Chunxiang (王春香), Victoria C. Hollowell, Robert Magill, Tammy Charron, Cirri Moran, and Laura Slown.

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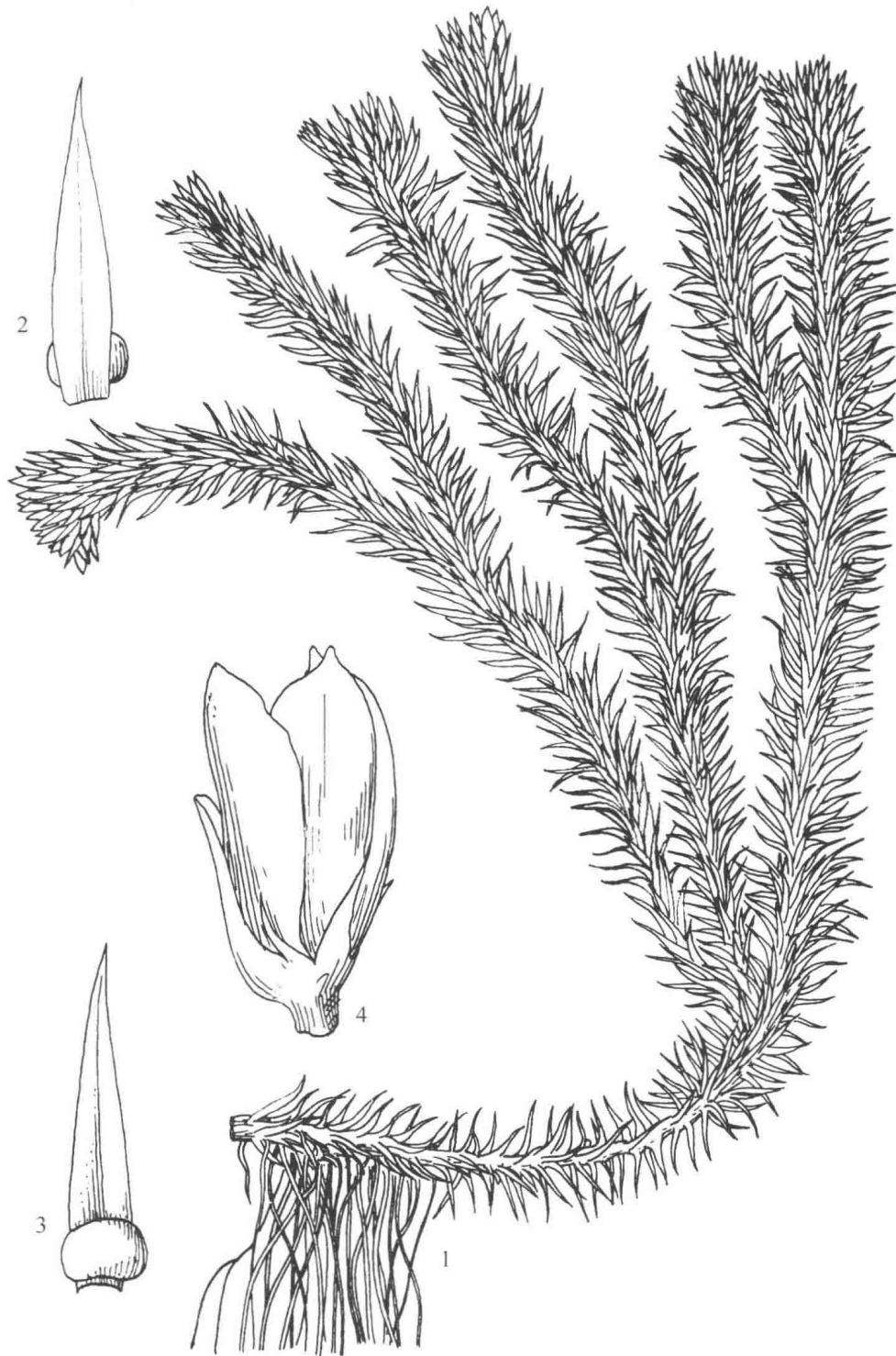


Figure 1. 1–4. *Huperzia chinensis* (Herter ex Nessel) Ching, 中华石杉 *zhong hua shi shan*. —1. Habit. —2. Abaxial view of sporophyll. —3. Adaxial view of sporophyll. —4. Bulbil. (FOC 14; FRPS 6(3): 3, pl. 1. 2004. —张桂芝, 许芝源 & 毛云霞 Zhang Guizhi, Xu Zhiyuan & Mao Yunxia; redrawn by 孙英宝 Sun Yingbao).



Figure 2. 1, 2. **Huperzia nanchuanensis** (Ching & H. S. Kung) Ching & H. S. Kung, 南川石杉 nan chuan shi shan. —1. Habit. —2. Adaxial view of sporophyll. (FOC 15; FRPS 6(3): 6, pl. 2. 2004. —李健 Li Jian; redrawn by 孙英宝 Sun Yingbao).

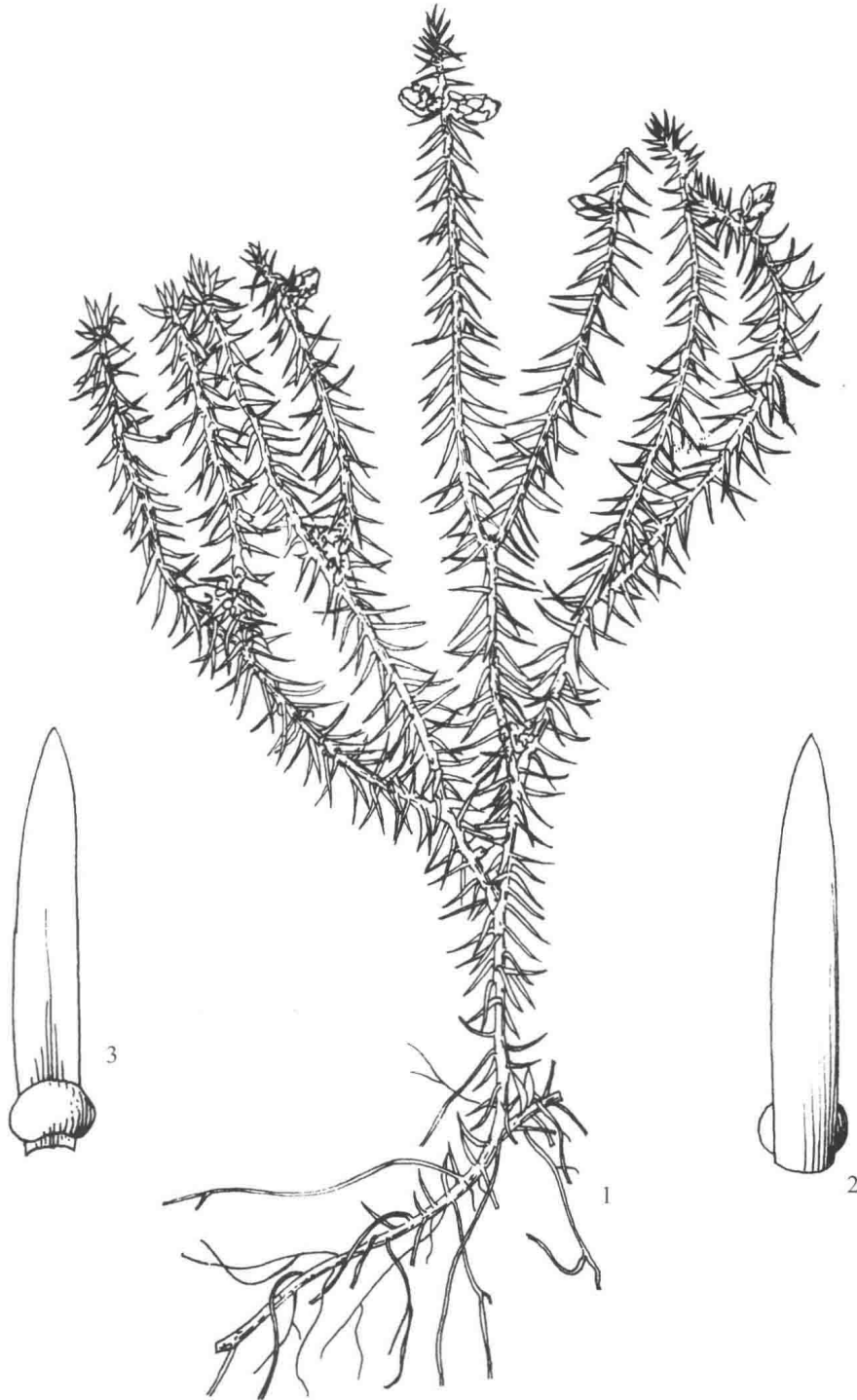


Figure 3. 1–3. **Huperzia emeiensis** (Ching & H. S. Kung) Ching & H. S. Kung, 峨眉石杉 e mei shi shan. —1. Habit. —2. Abaxial view of sporophyll. —3. Adaxial view of sporophyll. (FOC 16; FRPS 6(3): 10, pl. 3. 2004. —李健 Li Jian; redrawn by 孙英宝 Sun Yingbao).

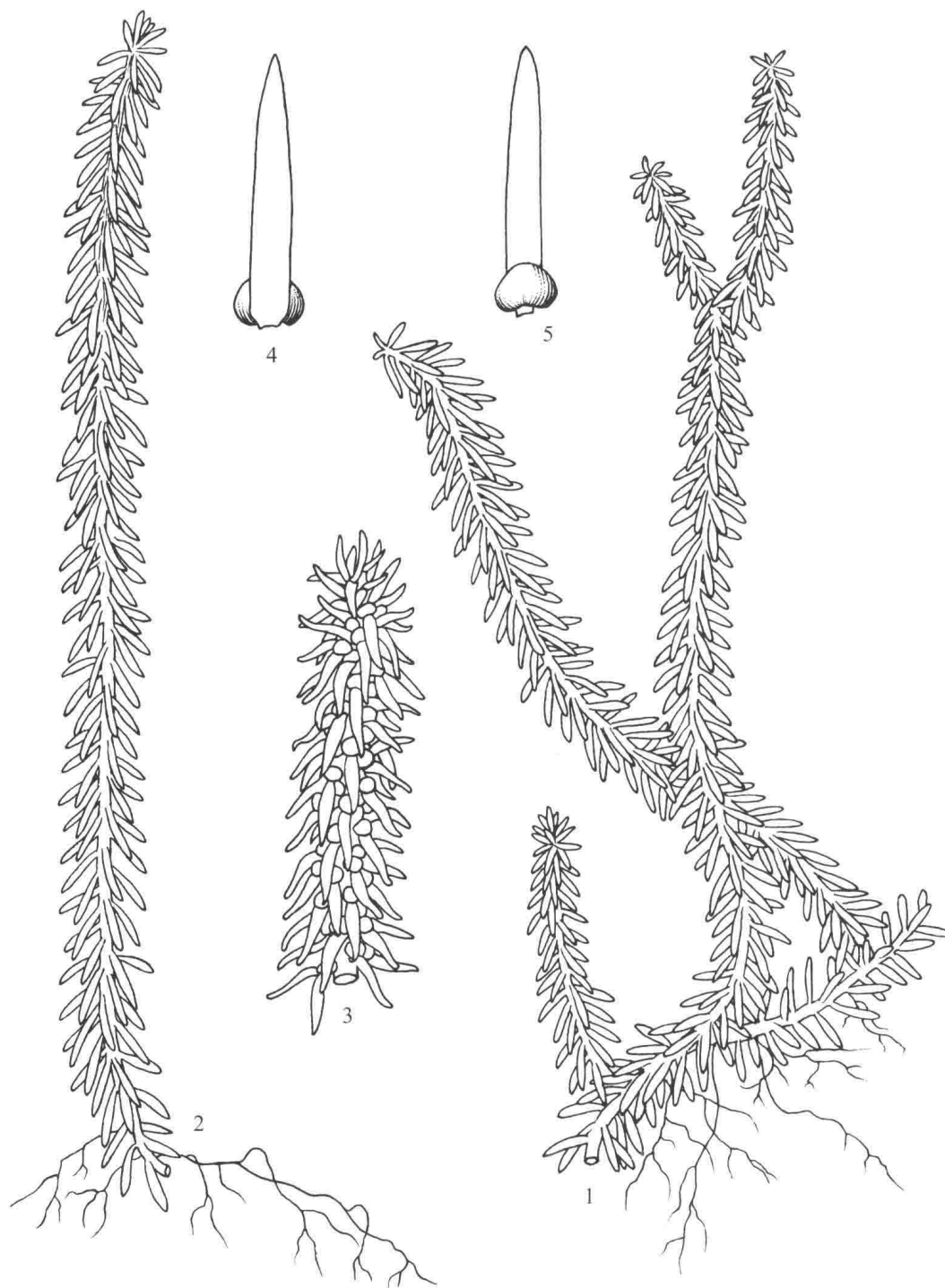


Figure 4. 1–5. *Huperzia rubicaulis* S. K. Wu & X. Cheng, 红茎石杉 hong jing shi shan. —1, 2. Habit. —3. Strobilus. —4. Abaxial view of sporophyll. —5. Adaxial view of sporophyll. (FOC 16. —杨建昆 Yang Jiankun; reproduced from 武素功 & 成晓 Wu Sugong & Cheng Xiao in *Acta Phytotax. Sin.* 23: 401, 1985).