

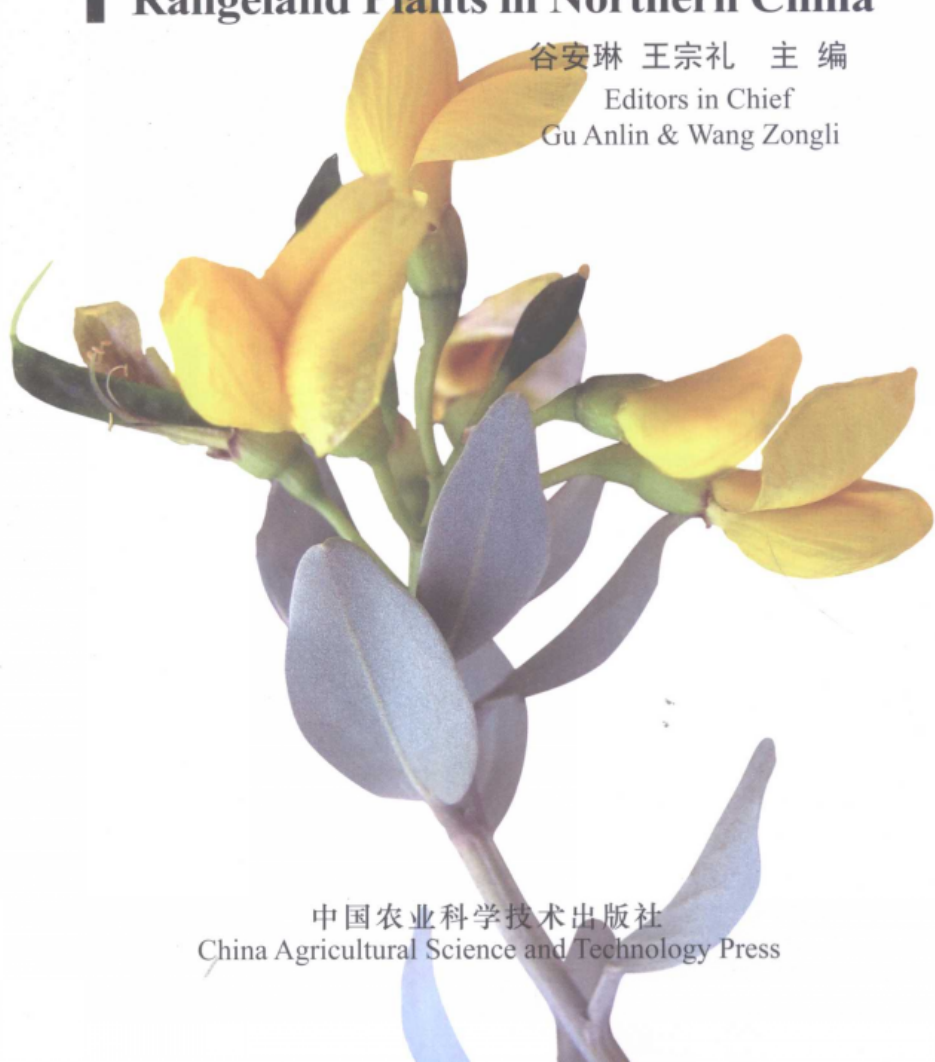
# 中国北方草地植物 彩色图谱

Atlas of  
Rangeland Plants in Northern China

谷安琳 王宗礼 主编

Editors in Chief

Gu Anlin & Wang Zongli



中国农业科学技术出版社  
China Agricultural Science and Technology Press

责任编辑 黄 卫

封面设计 孙宝林 大名文化



ISBN 978-7-5116-0042-4



9 787511 600424 >

定价：160.00元

# 中国北方草地植物 彩色图谱

**Atlas of Rangeland Plants in Northern China**

谷安琳 王宗礼 主 编

Editors in Chief Gu Anlin & Wang Zongli



中国农业科学技术出版社  
China Agricultural Science and Technology Press

## 图书在版编目 (CIP) 数据

中国北方草地植物彩色图谱/谷安琳, 王宗礼主编.-北京:  
中国农业科学技术出版社, 2009.10  
ISBN 978-7-5116-0042-4

I.中… II.①谷…②王… III.草地-植物-中国-图谱  
IV.Q948.52-64

中国版本图书馆CIP数据核字(2009)第167825号

责任编辑 黄 卫  
责任校对 贾晓红  
出版发行 中国农业科学技术出版社  
北京市中关村南大街12号 邮编: 100081  
电 话 (010) 82109704(发行部); (010) 82109711(总编室)  
网 址 <http://www.castp.cn>  
经 销 商 新华书店北京发行所  
印 刷 者 北京佳信达艺术印刷有限公司  
开 本 880mm × 1230mm 1/32  
印 张 16.75  
印 数 1~2200册  
字 数 500千字  
版 次 2009年10月第1版 2009年10月第1次印刷  
定 价 160元

版权所有 • 翻印必究

本书摄影作品版权归原作者所有, 未注明作者的图片均为谷安琳拍摄  
本书所有图片未经许可, 不得引用

# 《中国北方草地植物彩色图谱》

主 编 谷安琳 王宗礼  
副 主 编 吴新宏 王育青  
编 委 朱进忠 辛有俊 温刘君 余晓光 李卫军  
周青平 张洪江 董建芳 李 鹏  
英文编辑 谷安琳 温刘君 董建芳  
英文审校 Jack Carlson  
摄 影 谷安琳 赵 凡 张洪江 拾 涛 赵利清  
武素功 牛晓荣

## 《Atlas of Rangeland Plants in Northern China》

### **Editors in Chief**

Gu Anlin Wang Zongli

### **Vice-Editors in Chief**

Wu Xinhong Wang Yuqing

### **Assistant Editors**

Zhu Jinzhong Xin Youjun Wen Liujun Yu Xiaoguang

Li Weijun Zhou Qingping Zhang Hongjiang

Dong Jianfang Li Peng

### **English Translation and Editing Contributors**

Gu Anlin Wen Liujun Dong Jianfang

### **English Reviser**

Jack Carlson

### **Photograph Contributors**

Gu Anlin Zhao Fan Zhang Hongjiang Shi Tao Zhao Liqing

Wu Sugong Niu Xiaorong



# 前言

中国拥有 $392.76 \times 10^6 \text{hm}^2$ 草地，占全国陆地面积的41.7%，占世界草地总面积的12.5%。草地广泛分布于全国，南北纵跨31个纬度，东西横跨61个经度，海拔高差5 000多米；跨东南季风区、西北干旱区和青藏高原区3个气候大区，热带、亚热带、暖温带、中温带、寒温带5个气候热量带；年降水量相差近2 000mm。

如此巨大的环境差异和复杂的气候条件形成了复杂多样的草地资源，同样也孕育了多样性极为丰富的草地植物资源。

据国家第一次草地资源调查初步统计，中国草地中分布的植物达15 000多种。在《中国草地饲用植物资源》（1994）一书中，收录的草地饲用植物资源达到6 704种。其他尚有药用、工业用等重要用途的经济植物也不下千种。

为了增进人们对我国草地植物种质资源的了解，并准确识别草地植物，编著者在多年草地资源调查研究的基础上，编辑了《中国北方草地植物彩色图谱》一书。书中收录了我国北方草地的植被主要植物组成、地区特有植物以及珍稀濒危植物共500种（含变种和亚种），隶属于49科231属。书中对每种植物的形态特征、花期、地理分布、生境及大多数植物的用途等，用中、英文进行了简要描述，并附有1~3张野外实地拍摄的照片。期望本书对从事草地工作及相关领域的专业人员，以及对我国草地感兴趣的国内外非专业人员有所帮助。

本书只是草地植物彩色图谱的第一部。由于草地植物较多，本书收录并不全面，希望广大读者和学者不吝赐教，待下一本《中国北方草地植物彩色图谱续编》出版时补充完善。

本书的出版得到国家科技资源平台项目“牧草植物种质资源标准化整理、整合及共享试点”子项目的资助。在编辑过程中得到了许多人的帮助与支持。植物学前辈，中国科学院昆明植物研究所武素功研究员、内蒙古师范大学陈山教授、内蒙古教育学院刘书润教授和内蒙古农业大学王六英教授不仅提供了十分有帮助的建议，还参与了野外考察工作。中国农业大学戎郁萍副教授和研究生曹喆、内蒙古大学研究生温刘君以及中国农业科学院草原研究所的多名科研人员参与了野外考察工作。新疆和青海各级草原工作站的同志为野外工作提供了后勤保障。美国自然资源保护局植物材料专家Jack Carlson, Mark Majerus 和 Larry Holzworth对书中的植物英文名进行了审核。在此，谨向关心、支持本书出版的所有单位和个人表示衷心的感谢。

编者

2009年7月

# Preface

China contains 392.76 million hectares rangeland, which is 41.7% of the country's total land area and 12.5% of all rangeland in the world. The rangeland is distributed throughout the entire country, stretching 31 degrees latitude from north to south and 61 degrees longitude from east to west, with an elevation difference of 5 000 meters, across the monsoon region in the southeast, the arid region in the northwest, and the alpine region in the Qinghai-Tibet Plateau. The area contains tropical, subtropical, warm-temperate, temperate and cold-temperate zones; and an annual precipitation difference of 2 000 millimeters.

Under the substantially different environments and complex climate conditions, diverse rangeland resources have formed with an abundant and rich diversity of plant species. According to the statistical data from the first national investigation, China's rangelands support 15 000 plants species. The 1994 publication "Forage plant resources in the rangeland of China" lists 6 704 species. In addition, more than 1 000 species are economically important for medicinal, industrial, and other uses.

To facilitate a greater understanding of rangeland plant resources and ability to differentiate among species, the editors have compiled the book "Atlas of Rangeland Plants in Northern China", which is based on long-standing research and investigation in the field. The atlas describes and illustrates 500 wild plant species (including some subspecies and varieties) in 231 genera and 49 families. The plants include common components of the major plant communities across rangeland regions of Northern China, but certain endemic species, as well as rare and endangered species also are described. The description of each plant includes morphological characters, flowering time, geographical distribution, habitat and practical uses in both Chinese and English languages, with one to three color photos. The atlas is expected to be helpful to technical specialists studying and working on rangeland and other related scientific fields, as well as to those with a general non-technical interest in Chinese rangelands.

This is the first version of the "Atlas of Rangeland Plants in Northern China." With total rangeland species estimated in the many thousands, only a small number of species have been included. Comments and advice on how to improve the atlas is welcome and expected to guide modifications to subsequent versions.

The atlas was financially sponsored by the project Forage Germplasm Resources Standardization, Systematization, and Information Sharing. Compiling the atlas involved many contributing experts. Botanists of the elder generation, Professor Wu Sugong, Kunming Botany Institute of Chinese Academy of Sciences, Professor Chen Shan, Inner Mongolia Normal University, Professor Liu Shurun, Inner Mongolia Education University, and Professor Wang Liuying, Inner Mongolia Agricultural University offered very helpful suggestions, and assisted with field work as well. Professor Rong Yuping and graduate student Cao Zhe, China Agricultural University, graduate student Wen Liujun, Inner Mongolia University, and several scientists of Grassland Research Institute, Chinese Academy of Agricultural Sciences were involved in the field investigations. The regional and local Rangeland Stations of Xinjiang and Qinghai supported the field work. Jack Carlson, Mark Majerus, and Larry Holzworth, specialists with the Natural Resources Conservation Service of the United States Department of Agriculture, assisted with the review of the species common names. We are grateful to all institutes and persons who have supported the development and publishing of the atlas.

Editors  
July, 2009

# 使用说明

1. 书中给出了每种植物的中文名、拉丁名和所属科名。名称主要依据《中国植物志》中文版，部分依据地方植物志，禾本科小麦族植物名称依据中国植物志禾本科英文版《Flora of China》Vol. 22。

2. 为了方便国外读者，书中给出了植物的英文名或拉、汉（或其他语言）名称的英译。对在英语国家已有英文名的植物，其英文名引自英文原著和相关文献。有的植物有两个或多个英文名，本书仅选用其中最常用的名称；对没有英文名的植物，则根据其拉丁名、中文名或其他语言名称翻译为英文。

3. 植物以花色排序，同种植物可能有不同的花色，以最常见的花色为主。有的植物没有明显的花冠或典型的花被片，或花被片被遮掩，则以其花序中最明显的特征颜色排序。如，本书中收录的麻黄科、杨柳科、藜科和禾本科植物均放在了绿色部分中，灯心草科和莎草科植物放在了褐色部分中。有的藜科植物果期具有色彩艳丽的翅状附属物，为了便于查找，除了在绿色部分中有这些植物的描述内容外，根据其翅色也可以在不同的颜色部分中查到。

4. 同花色植物中，科以植物分类学恩格勒系统排序，属、种则按拉丁名字母顺序排列。

5. 本书在述及该种植物的分布地域时，凡属我国境内，均置于分号之前，分号之后属境外。

6. 植物在国内的分布使用省和自治区名称描述，分布范围比较广时，用地理区域描述，如“华中”、“西北”。书中的地理区域不同于行政大区，有的省区可能跨不同的地理区域（见附录1）。

7. 书末附有植物中文名索引和拉丁名索引；同时还附有以恩格勒系统排序的分科索引，同科中的属、种按拉丁名字母顺序排列。



# Guide to the use of this book

---

1. Each species in this book is listed by its Chinese name, Latin name and family name, which are mostly from the Chinese edition the Flora of China and partly from local floras. Names of species in Triteaceae are according to English edition of the Flora of China, Vol. 22. Poaceae.
2. For the convenience of foreign readers, the species common name or the English translation of the Latin or Chinese (or other language) name is listed. For species with a common name in English-speaking countries, the name is from English-written floras or related references. When there is more than one known common name, only one is listed, often the name that is known to be more commonly used. Species without an English common name are given a translation of the Latin scientific name or the Chinese name (or another language's name).
3. Species are arranged by flower color. Some species contain populations with different flower colors, but they are arranged under the color which is of the most common presentation. For species lacking a showy corolla or typical perianth, or has an included flower, they are arranged under the color which is of the character color of their inflorescences. As so, the species in families of Ephedra, Willow, Goosefoot and Grass included are found in the green section; and the species of Rush and Sedge in the brown section. Goosefoot family species with bright-colored wings when fruiting are found under more than one color section, sections of the color of the wings, as well as in green section.
4. Within the same flower color group, families are arranged according to the Engler system of plant taxonomy; genera and species within each family are arranged in alphabetical order.
5. In the description of species distribution, regions (areas) within the territory of China are arranged before semicolon; other countries and regions (areas) outside the territory of China are arranged after semicolon.
6. Country, province and autonomous region names are used for conveying distributions of the plants; larger distribution ranges are defined by geographical regions, such as "C China" (Central China), "NW China" (Northwest China), which are different than administration regions. Some provinces and autonomous regions are in different geographical regions (Appendix 1).
7. Index of Chinese names and index of Latin names are listed at the end of the atlas. Index of Latin and Chinese names in families which are arranged according to the Engler system also is listed, in alphabetical order by Latin names of genus, and species.

# 目录

## Contents

前言 Preface .....	I
使用说明 Guide to the use of this book .....	III
正文 Text of plant atlas .....	1~502
附录1: 中国地理区域示意图 Appendix 1: Geographical regions of China .....	503
附录2: 中国北方草地景观图 Appendix 2: Landscapes of rangeland in Northern China .....	504
参考文献 References .....	512
中文名索引 Index of Chinese Names .....	514
拉丁名索引 Index of Latin Names .....	516
拉丁名及中文名分科索引 Index of Latin and Chinese Names in Families .....	520



拍摄人: 张洪江 Photo by Zhang Hongjiang

## 蛇麻黄

### *Ephedra distachya* L.

麻黄科

Ephedraceae

【特征】矮灌木，高10~25cm；枝铺散状；枝末端呈螺旋状或“之”形弯曲；叶膜质鞘状；雌球花成熟时苞片肉质，红色至紫红色，边缘膜质；珠被管直或微弯。花期5~6月。

【分布】新疆；中亚、西伯利亚、欧洲、地中海南部。

【生境】荒漠地区的沙地、戈壁滩、石质山坡。

**Jointfir ephedra** (Great shrubby)

Ephedra family

Dwarf shrub 10~25 cm tall; branches diffuse, spiralfirm or zigzagged at terminal end; leaves membranous, sheath-like; ovulate cones with fleshy bracts at maturity, red to purple-red, edges membranous; integument tube erect or slightly curved. Flowering May to June.

**Distribution:** Xinjiang; Central Asia, Siberia, Europe and S Mediterranean

**Habitat:** Sands, gobi and rocky slopes in desert areas



## 中麻黄

*Ephedra intermedia* Schrenk ex Mey.

麻黄科

Ephedraceae

【特征】 灌木，高20~40cm；多分枝，枝直立；主干枝灰色，粗糙，有细沟纹；叶膜质鞘状，2裂；雌球花成熟时苞片肉质，橘红色至红色；珠被管螺旋状多回弯曲。花期6月。

【分布】 东北至西北，西藏；中亚。

【生境】 草原至荒漠区的沙地、戈壁滩、石质山坡。

【用途】 固沙；药用。

### Intermediate ephedra

Ephedra family

Shrub 20~40 cm tall; numerous branches erect; main branches grey, scabrous, with thin grooves; leaves membranous, sheath-like with 2 lobes; ovulate cones with fleshy bracts at maturity, orange-red to red; integument tube spirally curved several times. Flowering June.

**Distribution:** NE to NW China and Tibet; Central Asia

**Habitat:** Sands, gobi and rocky slopes in steppe to desert zones

**Use:** Fixing sand dunes; medicine

拍摄人：张洪江 Photo by Zhang Hongjiang





上图拍摄人: 拾涛 Photo by Shi Tao

## 膜果麻黄

*Ephedra przewalskii* Stapf

麻黄科

Ephedraceae

【特征】超旱生灌木，高20~240cm；多分枝，小枝末端常呈“之”形弯曲或拳卷；叶膜质鞘状；雌球花苞片膜质，成熟时增大；珠被管直或微弯。花期5~6月。

【分布】内蒙古、宁夏，西北；蒙古、巴基斯坦、亚速海-里海。

【生境】荒漠地区的沙地、砾石质地。

【用途】固沙；药用。



### Membrane fruited ephedra

Ephedra family

Super-xerophytic shrub variable 20~240 cm tall; branches many, usually zigzagged or circinate at terminal end; leaves membranous, sheath-like; ovulate cones with membranous bracts, enlarged at maturity; integument tube erect or slightly curved. Flowering May to June.

**Distribution:** Inner Mongolia, Ningxia and NW China; Mongolia, Pakistan, Sea of Azov-the Caspian Sea

**Habitat:** Sands and gravelly ground in desert areas

**Use:** Fixing sand dunes; medicine





## 草麻黄

*Ephedra sinica* Stapf

麻黄科

Ephedraceae

【特征】草本状小半灌木，高20~40cm；小枝对生或轮生，直或微弯；叶膜质鞘状；雌球花单生，成熟时苞片肉质，红色。花期5~6月。

【分布】东北至西北及西南；蒙古、西伯利亚、中亚、欧洲。

【生境】草原或半荒漠带的石质丘陵或固定沙丘。

【用途】药用；提炼麻黄素。



### Chinese ephedra

Ephedra family

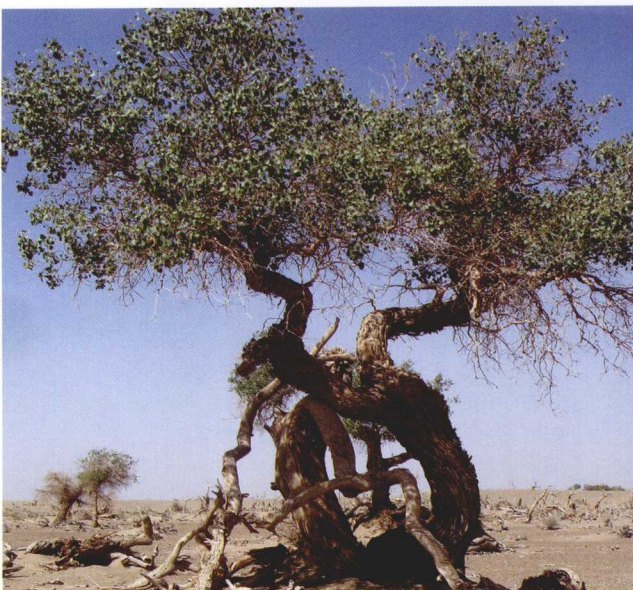
Herbaceous subshrub 20~40 cm tall; twigs opposite or whorled, erect or slightly curved; leaves membranous, sheath-like; ovulate cones solitary, bracts fleshy and red at maturity. Flowering May to June.

**Distribution:** NE to NW and SW China; Mongolia, Siberia, Central Asia, and Europe

**Habitat:** Rocky hills and fixed sand dunes in steppe and semi-desert zones

**Use:** Medicine; extracting ephedrine





拍摄人: 赵凡 Photo by Zhao Fan

## 胡杨

*Populus euphratica* Oliv.

杨柳科

Salicaceae

【特征】乔木，高达30m；树皮淡黄色，小枝淡灰褐色；叶形多变，幼树叶条状披针形，全缘或1~2齿裂，成年树叶卵形至肾形，具不规则齿裂；花盘膜质，早落；蒴果长椭圆状。花期5月。

【分布】内蒙古，西北；蒙古、中亚、巴基斯坦、阿富汗、伊朗、伊拉克、叙利亚、埃及。

【生境】荒漠区河流沿岸及盐碱湖盆。

【用途】家具和建筑材料；燃料；药用。



### Euphrates poplar

Willow family

Tree to 30 m tall; barks pale yellow, twigs greyish-brown; leaves varying shaped, linear-lanceolate and entire or 1~2-toothed from young trees, ovate to reniform from adults, with irregular tooth-lobes; disk membranous, caduceous; capsule long-ellipsoid. Flowering May.

**Distribution:** Inner Mongolia and NW China; Mongolia, Central Asia, Pakistan, Afghanistan, Iran, Iraq, Syria and Egypt

**Habitat:** Riverbanks and saline-alkaline lake basins in desert areas

**Use:** Buildings and furniture materials; fuel; medicine





## 黄柳

*Salix gordejewii*

Y. L. Chang et Skv.

杨柳科

Salicaceae

【特征】灌木，高1~2m；树皮黄白色，幼枝黄褐色，有光泽，无毛；叶狭条形，边缘具细密腺齿；柔荑花序先叶开放；子房疏被柔毛。花期4~5月。

【分布】内蒙古、辽宁。

【生境】森林草原至草原带的沙地、沙丘。

【用途】固沙；饲用。

### Yellow willow

Willow family

Shrub 1~2 m tall; barks yellow-white, young twigs yellow-brown, glossy and glabrous; leaves narrowly linear, with thin glandular teeth at margins; catkins emerging before leaves; ovary loosely pubescent. Flowering April to May.

**Distribution:** Inner Mongolia and Liaoning

**Habitat:** Sands and dunes in forest-steppe to steppe zone

**Use:** Fixing sand dunes; forage







## 小红柳

*Salix microstachya* Turcz. ex Trautv.  
var. *bordensis* (Nakai) C. F. Fang

杨柳科

Salicaceae

【特征】灌木，高1~2m；树皮黄褐色，小枝红褐色，有光泽；叶条形至条状披针形，全缘或有不明显疏齿，幼时密被绢毛；柔荑花序与叶同时开放；子房无毛。花期5月。

【分布】东北，内蒙古、宁夏、甘肃。

【生境】沙丘间低地、河谷。

【用途】固沙；饲用。

### Little red willow

Willow family

Shrub 1~2 m tall; barks yellow-brown, twigs red-brown, glossy; leaves linear to linear-lanceolate, entire or unclearly loose-toothed, densely sericeous when young; catkins emerging with leaves; ovary glabrous. Flowering May.

**Distribution:** NE China, Inner Mongolia, Ningxia and Gansu

**Habitat:** Lowlands between sand dunes and river valleys

**Use:** Fixing sand dunes; forage

