

草坪地被与人类环境

——草坪地被建植原理与实用技术

周寿荣 主编



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**TURF AND GROUND COVER
WITH HUMAN ENVIRONMENT**

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世界
优秀
草坪
地被
示例

周寿荣 摄影



图1 1993年本书主编周寿荣教授在新西兰北帕米尔屯公园留影。背景是该公园景色绮丽的草坪与地被。



图2 湖滨地被
(1993年摄于新
西兰)



图3 草林结合,绿化山村(1989年摄于德国南部)



图4 农村住宅绿化(1995年摄于日本)

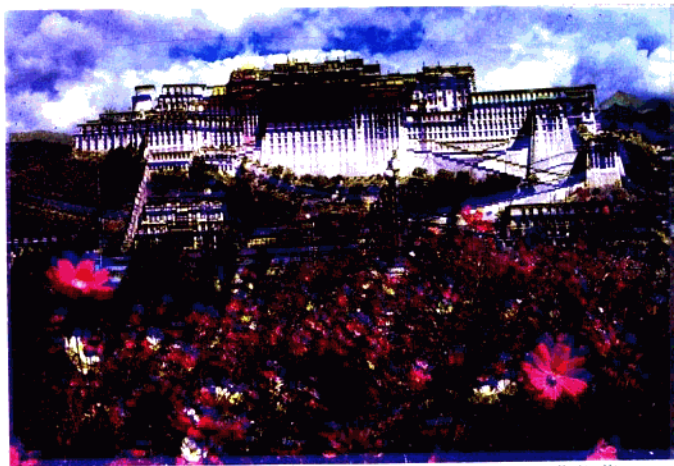


图 5 布达拉宫前的观花地被(1987 年摄于我国西藏拉萨)



图 6 植物园草坪与地被(1993 年摄于澳大利亚)



图 7 文化娱乐区草坪与地被(1989 年摄于法国南部)

图 8 研究站的草坪与地被(1984 年摄于德国)



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序

人类在漫长的历史发展过程中,曾经走过许多弯路也犯过不少错误,从自然科学的角度讲,最为突出的可能要算人类在日常生活、发展生产和经济建设等过程中对环境的污染和自然资源的破坏。从历史上许多沉痛的教训中,可以总结出一条经验,就是“在发展生产和经济的同时,必须注意环境的保护和建设”。为了人类社会的持续发展,这应成为今后世界经济发展的特色和总趋势。

编写本书的目的在于适应中国当前发展经济和改善环境的需要,推动中国草坪、地被建设事业的发展,为中国和世界人民创造良好的生存环境贡献一份力量。

“草坪地被与人类环境”这一命题在于强调草坪、地被在改善和建设人类环境中的重要意义和作用。

草坪、地被来源于自然,本系自然植被的组成部分,今天的草坪和地被是人类对自然植被的改良和加工。在人类的自然环境中,有许许多多的植物,它们形成各种各样的植被,保护和稳定着人类的自然环境,并形成许多美丽的自然景观,包括天然草地、灌丛、森林和其他植被。从土地保护和绿化的角度讲,人工种植的牧草和某些作物,也可说是“人工地被”。

本书主要作者较长期从事天然植物和植被资源的调查和人工植被的生态学研究,编写本书的第一手资料主要来源于这些

研究。

近十余年来,在国际草坪地被科学技术的影响下,通过中国草坪、地被和园林工作者的努力,草坪、地被科学技术有了较大的发展,有关的论文资料散见于多种杂志和专业书籍。本书的部分作者曾去亚、欧、美、大洋等洲的有关国家和地区访问、学术交流和合作研究,直接或间接收集了国外有关资料。以上两方面是本书第二手资料的重要来源。

欧洲是草坪、地被发展较早且较发达的地区之一,介绍欧洲的草坪和地被是为了“洋为中用”。德国慕尼黑科技大学 U. 西蒙教授及其同事与我们的学术交流和合作研究长逾 10 年之久,本书的出版体现了中德两国科学工作者为发展科学技术和改善人类环境所作的共同努力。

对于人类的未来,改善环境是一项伟大的事业,要作好此事非常艰难。首先,每个人都应懂得自然环境与自然资源是联系在一起的,保护自然环境也就是保护自然资源。

人类环境的改善以至于世界的持续发展都有赖于人们(包括个人、土地拥有者、土地经营者、政府官员、研究家、学术界、政策制定者)谐和人与自然的关系的知识和能力。因此,学习谐和人与自然关系的知识对任何人都是必要的。人类可获得美好的环境,也可持续发展,那就是当他们能够谐和人与自然的的关系的时候。

在本书谋篇过程中,我们既注重理论阐述,更重视总结和指导思想实践。由于理论是解决草坪、地被建植中发现问题和创建高水平环境的基础,所以本书对有关的理论给与了应有的强调。

我们深信本书在应用过程中,将证明不仅可以作为有关人员的参考手册,也可作为大专院校和专业培训机构的教师 and 学生的教学用书。

完成编写本书任务的作者是：周寿荣编写第一、二、四、五、六章，并通审全部书稿；毛凯编写第三、九章及第七章的第一、三、五、六、七节，第八章的第二、三、四、五节；干友民编写第七章的第二、八、九节，第八章的第六、七节，并翻译西蒙教授的特约稿；周勇编写第十章；余云高编写第七章的第四节；马海天才编写第八章的第一节；西蒙教授的《欧洲的草坪及土地绿化》一文，是为本书撰写的特约稿。

此外，现在杭州花圃和苗木公司科技开发中心工作的齐鸣，四川农业大学的谢光红、彭燕等参与部分资料的搜集和整理。在本书编写和出版过程中，四川农业大学等的有关教授专家王天益、丁衡君、张光柱、冯盛德等曾给与关心和帮助；特别是四川科学技术出版社农业编辑室在编辑任务特别饱和的情况下，仍将本书列入选题计划，使其得以顺利出版。在此谨表示作者诚挚的谢意！

周寿荣

1994年10月

于四川农业大学

注：本书主编周寿荣先生为中国草原学会名誉副理事长及草坪学术委员会顾问；四川草地研究会理事长；四川省生态学会副理事长；四川农业大学草学及环境绿化专业教授。——编者

PREFACE

In the long historical period of human development, man have already gone through many winding courses and made many mistakes, according to the viewpoint of natural science, nothing was almost more harm than the environmental pollution and natural resources destruction caused by people in the life, production and economic development of mankind. The conclusion obtained from much more historical bitter experience would be that the attention should be paid to the environmental protection and construction during the period of production and economic developing. Perhaps the viewpoint above will be the specificity and tendency of the economic developing of humankind for the future in order to obtain the sustainable development of the world.

The aim of this book is to fit in with the needs of economic development and environmental improvement at the present time, to promote the development of turf and ground cover in China and to contribute one's share for the practice of the construction of a fine environment for the people in China and the world.

The theme of "Turf and Ground Cover with Human Environment" was chosen to emphasize the importance and role of turf and ground cover in the improvement of human environment.

The original turf and ground cover occur in natural world and are the components of natural vegetation. Turf and ground cover of today were introduced from nature, were

improved and modified by people. In the natural environment of people, there are many plants which formed a lot of various vegetations protecting and stabilizing natural environment of humankind. They have also formed and embellished many natural landscapes including natural grasslands, shrublands, forests and other vegetations. In the eyes of land protection and greening scientists, cultivated grassland and some field crops may also be called "artificial ground cover".

The chief author of this book engaged in the investigation of natural resources of plants and vegetations and the study of artificial vegetation ecology for a long time, the primary materials of this book were collected from those research works.

In the recent more than ten years, under the influence of the development of international turf and ground cover science, through the efforts of Chinese people working at turf, ground cover and gardening, the turf and ground cover have already a general development, and the relative materials have a scattered distribution in the relative magazines and books. Some authors of this book have been to the relative countries and regions in Asia, Europe, Oceania and America and collected the relative materials including photos and publications. Both fields above were the sources of the secondary materials in this book.

Europe is one of the more early and advanced areas in turf and ground cover developing, the introduction on "Turf and ground cover in Europe" is for "to make foreign things serve

China", The academic exchange and scientific collaboration of Professor Dr. Uwe Simon and his colleagues of Munich Technique University of Germany with us were already more than ten years, the publication of this book means the efforts of both scientists of China and Germany in developing scientific technique and improving human environment.

Improvement of environment is a great undertaking and also a difficult work for the future of people. It is need for every one to know that the natural environments are combined with natural resources. Protecting of natural environment would be also the protecting of natural resources.

Actually, the improvement of human environment or even the sustainable development of the world are depend on the knowledge and ability of people including individuals, land owners, land managers, administrators, research scientists, academicians, and policy makers in the harmonization of relationship between humankind and nature around the world. Therefore, it is need for any people to learn how to harmonize the relationship between man and nature. A fine environment and sustainable development could be obtained by people during the period when the relationship between humankind and nature can be harmonized by them.

In developing this book, we have attempted to include both principles and practices. Principles have been emphasized since these are the basis of solving the varied problems found on turf and ground cover and of achieving high levels of environment.

This work should continue to prove useful not only as a reference manual for many relative people but also as a textbook for educators and students of universities, colleges and/or professional training organizations.

The contributions of each contributor are as follows:

S. R. Zhou; Chapters 1, 2, 4, 5, 6 and go over all manuscripts.

U. Simon; A special contribution.

K. Mao; Chapters 3, 9, Sections 1, 3, 5, 6, 7 of Chapter 7 and sections 2, 3, 4, 5 of Chapter 8.

Y. M. Gan; Sections 2, 8 of Chapter 7, Sections 6, 7 of chapter 8 and Chinese translation of the special contribution

Y. Zhou; Chapter 10.

Y. G. Yu; Section 4 of Chapter 7.

T. C. Mahai; Section 1 of Chapter 8.

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Shourong Zhou

October 1994

Note of editors:

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