

# 中國荷花 品種圖志

續志

王其超 张行言 编著 包满珠 英译  
中国建筑工业出版社

CHINESE LOTUS FLOWER  
CULTIVARS-CONTINUED

王其超 张行言 编著 包满珠 英译

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趙傑初



中国建筑工业出版社



值此澳门回归祖国大庆之  
喜，谨以此书为献礼。衷心祝愿

莲花宝地繁荣昌盛，  
莲花福地人寿年康。

On the auspicious occasion of the re-  
turn of Macao to China, the author wishes  
to dedicate this book as a gift of celebration.

The precious land of the lotus brings  
us prosperity;

With the blessing of the flowers, we are  
enjoy good health and longevity.



湖北省政协办公室  
存念

贈

一九九·十二

王真題  
張外言

荷花媚

荷花

蘇軾

霞苞霓幄碧荷天

芳心別是風流標格

重重青蓋下千嬌

照水紅紅白白好

堪望明月清風夜

甚依違不語妖邪去

力終須放船兒去

清香深處住看伊

顏色

蘇軾

王其超

王其超

蘇軾



一九九九年元月



艱苦奋斗數十載  
掌握科學新技術  
双双實踐出成果  
荷花世界遠名揚  
中國荷花品種誌出版

程緒珂敬賀

一九九九年五月





## 作者简介

王其超、张行言伉俪分别在1928年、1927年出生。于湖北省浠水县和江陵县。1950年同期毕业于湖北农学院园艺系。双方在武汉市从事园林花卉科技工作40余年，退休前均是中国荷花研究中心教授级高级工程师。王其超先生曾担任武汉市园林科学研究所所长、中国荷花研究中心副主任，武汉大学客座教授。现兼任中国风景园林学会名誉理事、中国花卉协会常务理事、中国花卉协会荷花分会副会长、梅花蜡梅分会常务理事、《中国园林》编委；张行言女士兼任中国花卉协会荷花分会理事、梅花蜡梅分会理事。

二人的主要著作有《荷花》(1982)、《盆荷拾趣》(1987)、《中国荷花品种图志》(1989)、《荷花》(1998)、《梅花》(1998)等。参与编著的有《中国花经》、《中国十大名花》、《中国作物遗传资源》、《中国梅花》等，共发表荷、梅论文40余篇。

由他们主持的荷花研究课题，曾获湖北省科技进步一、二等奖、建设部科技进步三等奖、武汉市科技进步一、二等奖多项。由于他俩在荷花科技上作出的贡献突出，双获政府特殊津贴。

## About the authors

The couple Qichao Wang and Xinyan Zhang born in 1928 in Xishui County and 1927 in Jianglin County of Hubei Province respectively. Graduated from the department of horticulture of Hubei Agricultural College (Huazhong Agricultural University since 1952) together in 1950. They engaged in floricultural related work in Wuhan for more than 40 years, and all were research professors in China Lotus Flower Research Center before they retired. Qichao Wang was director of Wuhan Landscape Architecture Science Research Institute, vice director of China Lotus Flower Research Center, guest Professor of Wuhan University. And he is the honored committee member of Chinese Society of Landscape Architecture, member of standing committee of China Florists Association, Vice president of Lotus Flower Branchlet of China Florists Association, member of standing committee of Mei and Chimonanthus Flowers Branchlet of China Florists Association, member of editor board of 《China Landscape Architecture Journal》. Xinyan Zhang is the member of committee of Lotus Flower Branchlet and Mei and Chimonanthus Flower Branchlet of China Florists Association.

The main publications of theirs are:《Lotus flower (1982)》《Funs of Potted Lotus》(1987),《Chinese Lotus Flower Cultivars》(1989),《Lotus flower》(1998)《Mei flower》(1998). They also participated in the editing of following books:《Chinese Encyclopedia of Flowers》,《Ten Famous Chinese Flowers》,《The genetic resources of Chinese crops》 and 《Chinese Mei Flower》. More than 40 academic papers were published by them.

The research projects that in charged by them won first and second grade Awards of Progress of Science and Technology of Hubei Province, third award of China Ministry of Construction, several times first and second awards of Wuhan City. They all get governmental special subsidies because of their contribution to lotus flower science and technology.

Manzhu Bao, born in 1963 in Zhangxian County, Gansu Province. Studied in Department of Landscape Architecture, Beijing Forestry University in 1980-1984 and awarded Bachelor's Degree. And studied in the Speciality of Landscape Plants in Beijing Forestry University during 1986-1991 and granted PhD. During October 1994 to October 1995, conducted one year's post doctorate research in De Montfort University, Leicester, England. And had half year's visiting research in Vrije Universiteit of Amsterdam, The Netherlands from September 1998 to March 1999.

Since 1984, he has been working in Huazhong Agricultural University and promoted as Professor of Ornamental Horticulture in 1995. He is the committee member of Ornamental Horticulture Branchlet of Chinese Society for Horticultural Sciences, committee member of National Crop Cultivar Approval Committee, member of standing committee of Branchlet of Mei Flower and Chimonanthus, Chinese Florists Association; member of standing committee of Hubei Society of Horticultural Sciences, member of committee of Hubei Society of Landscape Architecture. Five books that he involved in editing have been published. More than 30 academic papers have been published in Chinese and International Journals.

# “并蒂莲”之歌\*

(代序)

栽培古老的荷花，  
色香味韵皆属上上；  
更何况又莲开并蒂，  
迎炎炎烈日而怒放！

啊！并蒂莲，  
你是美丽的化身，  
你是互助的榜样；  
相辅相成，相得益彰…  
互促互补，灿烂辉煌！  
你是水生花卉的瑰宝，  
你真成了炎夏名花之王。

\*\*\*\*

我国系世界荷花分布和生产的中心，  
却长期误认为那是邻国印度的芬芳。

是你引经据典，刮肚搜肠；  
调查研究，不厌其详。…

尤其向古植物学家徐仁教授虚心请教，  
才知荷花并非传自印度，  
佛祖讲经圣地沼泽中生长的多为睡莲，  
中华正是荷花土生土长的故乡！

炎黄子孙自古就育此奇葩…  
她才能茁壮成长，万里飘香！…


\*\*\*\*

你对荷花的自然分布，  
调查研究得不厌其详。  
近年还北达黑龙江多处，  
找到那号称“泡子”的荷花荡；  
又南至云南文山州邱北县，  
饱赏那普者黑五千亩名荷风光。  
……从野生原始类型直到  
高度发展的观赏奇品，



\* 本书编著王其超、张行言教授级高工，系终生研究荷花之贤伉俪，人称“并蒂莲”。





她们广泛分布并万里名扬，  
在我们辽阔的可爱故乡。

\*\*\*\*\*

对于荷花品种的分类，  
你钻研得最富特长。  
你热衷于花卉二元分类法的推广，  
经过反复修改和增删，  
终于把多达三百多品种的中华名品，  
使之各就各位，纲举目张。  
……这是海内外独树一帜的分类系统，  
祝愿它所向披靡，盛名远扬。

\*\*\*\*\*

从实生选种、倍性育种到远缘杂交……  
你的拿手好戏是品种改良……  
从1979起经过十年的不懈努力，  
你把我国荷花品种扩展到162个。  
从1989后再经十载，  
…从《缸荷谱》所记33品种，  
到《中国荷花品种续志》的332，  
约二百年间荷品种猛增至两百九十强！  
这主要得力于品种改良。  
你对中华荷花的巨大贡献，  
真是越干越勇，声名远扬！

\*\*\*\*\*

《续志》和《荷志》是一对姊妹花，  
十年间先后问世，次第飘香。  
“并蒂莲”辛勤培育了姊妹花，  
真是相敬相爱，相得益彰；  
同舟共济，互补短长！  
愿贤伉俪培育的姊妹花乃至荷花业，  
在改革开放中越开越漂亮，  
在市场经济中越走越辉煌！

陈俊愉



于北京林业大学梅菊斋 1999.7.2



## THE SONG OF “BI-FLOWERED LOTUS”

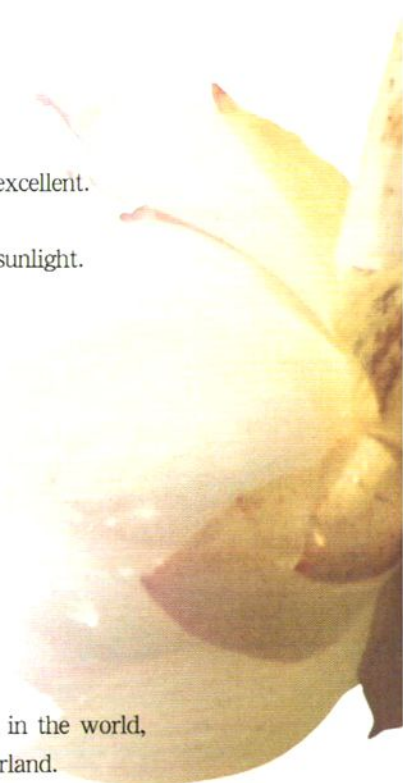
The long cultivated Chinese lotus,  
Her colour, fragrance, taste and lingering charm—all excellent.  
Now even her bi-flowered elite cultivar  
is just blooming floriferously under the hot summer's sunlight.  
Oh, our “bi-flowered lotus”,  
You are the symbol of beauty,  
You are the model of mutual-aid,  
Mutually supported and completed,  
Mutually obtained and succeeded  
Reciprocally complementary and promoted  
All results in success—splendid and brilliant!  
You are becoming the jewel of water plants,  
You are the king of flowers during the season hot.

\* \* \* \*


China, the centre of distribution and production of lotus in the world,  
Yet long misunderstood that India is her centre motherland.  
It is your valuable contribution that:  
By finding literature and references, thinking and searching, and by  
making investigations and deep study,  
Especially the late old professor Xu Ren you asked  
Who knew India very much as a famous palaeo-botanist.  
At the sacred place where Buddha gave lessons,  
There was along a swampland,  
Wild plants grown were nearly water-lilies almost.  
China indeed is the centre of origin of the lotus  
This charming flower has been cultivated by our ancestors for a very  
long time past.  
She thus grown vigourously and spread widely,  
Nearly all over our whole motherland!

\* \* \* \*

For the natural distribution of the lotus,  
You have very thoroughly investigated and studied.  
From many places of Heilongjiang in the Northern-East,  
You found wild lotus in many swamps called “Pao Zi”;  
And to Qiu Bei County of Yunnan Province in the southern-west,  
Where you’ visited and very much appreciated,







Five thousand mows lakes at Pu Zhe He  
From wild forms to ornamental cultivars highly developed,  
All widely distributed and with fame spread,  
Around over our vast and lovely motherland!

\* \* \* \*

As to the classification of lotus cultivars,  
You have kept your accomplishments constantly improved.  
You are anxious to extension of "dual classification system".  
It has been applied for lotus cultivars and many times revised.  
Your efforts have resulted in some three hundred odd cultivars.  
Be systematically classified and well arranged  
As outstanding and characteristic system for lotus classification,  
Wishing it to have final success and with fame widespread!

\* \* \* \*

By means of seedling selection, polyploid breeding to cross-  
breeding (distant),  
Your best technique and skill is cultivar improvement.  
From-1979, through ten years' efforts,  
162 Chinese lotus (ornamental) cultivars were obtained.  
And as a result of further ten years' hard work,  
You have cultivars summing up to 300 odd,  
Oh, from the 33 cultivars described on a lotus book in 1808,  
Within 200 years increased enormously to two hundred and ninety odd,  
Mostly by means of recent years' cultivar improvement.  
You bi-flowered lotus are making huge contributions,  
You are fighting bravely and your fame meanwhile becoming vast!

\* \* \* \*

"The Continued Treatise on Chinese Lotus" and  
"The Treatise on Chinese Lotus" are sister books,  
In ten years been successively published.  
You have organized and cultivated the sister books enthusiastically,  
You really mutually beloved and respected,  
Then mutually obtained and succeeded,  
Helping each other in a same boat,  
Reciprocally completed and remedied,  
To become more and more charming,  
And to be more and more flourishing indeed!

Chen Junyu  
(Professor of Ornamental Plants,  
Beijing Forestry University, 1999.7.12)



# 前言

从1989年我们主编《中国荷花品种图志》(以下简称《荷志》)出版至今,整整10年过去了。《荷志》是我们从事荷花研究25年的总结。90年代继续工作,收获甚丰,将有关实用性方面的荷花科技成果,以科普形式编写成《荷花》一书,1998年由余树勋研究员主编的中国名花丛书之一,在上海科技出版社出版了。大部分成果则编撰成《中国荷花品种续志》(以下简称《续志》)。这本书其所以名曰《续志》,因其内容很大程度上是前《荷志》的继续与延伸,可谓《荷志》的姊妹篇。

《续志》对中国野生荷花的分布、生态环境、性状特征、种质源流所作的科学考察结果,充实了荷花原产中国的论据。将中国荷花发展历程划分为初盛、渐盛、兴盛、衰落、发展等五个不同的历史时期,或有助于人们对荷花发展史的深入探讨。《续志》运用观赏植物“二元分类”的理论,在荷花品种分类中创造性地提出荷花品种分类新系统,是前荷花品种分类系统的一大进步。在育种、应用方面,《续志》侧重介绍最新研究成就和动态,如中国荷花研究中心的荷花品种资源圃建设、江西广昌白莲研究所的太空育种、广东三水“荷花世界”专类园的规划设计等等。中国荷文化浩如烟海,缺它似不成其为荷书,且不少内容与品种有关联。故我们用较大篇幅写了一章“灿烂的荷文化”,明知挂一漏万,旨在抛砖引玉,期盼得到对荷文化感兴趣的共鸣。“品种简介”是《续志》的重点,这里介绍了170个荷花品种,除少数是后来收集的传统品种外,绝大多数是90年代全国各地荷花工作者培育的新品种,它们较之10年前《荷志》所载的162个品种,品质大有改进,观赏性显著提高。这样一来,中国荷花品种资源载入二“志”者共达332个。前《荷志》详细阐述过的荷花形态结构、生态习性等内容,《续志》不再赘述。

为了便于国际文化交流,《续志》采用中、英对照本面世。全书中、英文共34万余字,随文配彩图80幅,每个品种各有一彩图,总共250幅。力图做到图文并茂,雅俗共赏,融科学性、知识性、实用性、可读性于一体。这只是著者的初衷,有待读者评判。

《续志》优选的品种记录,绝大部分源于中国荷花研究中心品种资源圃。为《续志》无偿提供新品种种质的单位有湖北荆州技工学校、杭州曲院风荷公园、中国科学院北京植物园、中国科学院武汉植物园、南京市江浦艺莲苑等;提供新品种照片、资料的单位有湖南省农业科学院蔬菜研究所、江西广昌白莲研究所、上海市植物园、上海市大观园、河南许昌市人民公园等,从而充实了《续志》的品种内容。我们对以上单位和莲友们的无私支援、热情相助、谨致衷心的感谢。

90年代初,武汉市王杰副市长拨专款建荷花品种资源圃,为我们改善育种条件。武汉市东湖风景区管理局惠书枝局长、张元祥副局长,武汉市园林局王昌藩书记、詹林局长、陈昌总工程师,中国花卉协会王甘杭顾问等现任领导,以及前武汉市园林局老局长孟庆春、吕清克、副总工程师毕庶昌等,曾以不同方式给予支持、关心和鼓励,本书在付梓之时,著者由衷地感谢他们。

本书编撰期间,中国科学院北京植物园余树勋研究员、徐

民生研究员,北京市园林局总工程师李嘉乐教授级高级工程师,北京林业大学园林学院院长张启翔教授,上海市园林局局长吴振千教授级高级工程师,天津市园林局总工程师陈威教授级高级工程师,杭州市园林局副局长冯祥珍高级工程师,苏州市园林局李衍德高级工程师,深圳市洪湖公园李尚志高级工程师,美籍园艺家沈荫椿先生,北京花卉园艺家薛守纪先生,北京华艺园插花学校副校长高葆楨先生,湖北电视台台长纪卓如先生,新华社主任记者花崑先生,摄影大师马元浩先生,摄影新秀张敏先生,工艺美术大师王士杰先生,还有我们的学长鲁涤非教授、夏铭鼎教授、夏振坤研究员、熊助功研究员、童德中研究员,孔庆东研究员,学姊万云先教授等,他(她)们或是提供资料、照片、数据、信息,或是指点迷津,事事处处给予热情帮助。我们考察所到之处,当地园林部门均热情接待,介绍情况,提供种种方便。著者谨此一併表示诚挚的谢忱。

建设部城市建设研究院风景园林所陈明松高级工程师对佛学有研究,他撰写的《荷花与佛教》万字文,内容丰富翔实,由于《续志》篇幅所限,我们把它压缩成短文,陈工毫不介意。古人云:“感人深者莫先乎情”,我们领谢陈工的情谊。王东来工程师利用业余时间研究用计算机对荷花品种系列资料进行管理,《续志》中的“荷花品种数据库及服务系统”一节由他撰写。在荷花深入研究的10年中,支持我们工作的前武汉市东湖花卉盆景研究所所长黄正华工程师、冯熹高级工程师,与我们合作的中国荷花研究中心的鲁永富技师和潘宜平、杨雄、高长胜等同志,都为《续志》付出了辛劳,著者向他们致谢。

这里,我们要特别感谢两位老前辈。一是前上海市园林局局长程绪珂教授级高级工程师。80年代初,她对我们从事荷花工作的尴尬处境鸣不平,至今令人难忘。1996年她主持我们的荷花品种资源圃建设鉴定会,充分肯定其研究成果,并大声疾呼应加强对中国荷花研究中心的支持力度,反映积极。最近我们恳请程老为《续志》题词,她欣然命笔。题词言真意切,给我们极大的鼓励和鞭策。二是北京林业大学教授、恩师陈俊俊院士。1963年当我们正处于研究选题的迷雾之中,是他指引我们选定荷花为研究目标。从此,注定了我们毕生结缘荷花的生活道路。几十年来我们在荷花工作上取得的每一进步,都与陈老的指导、帮助分不开。现陈老寿登耄耋,仍带病勤耕不懈,对我们关怀备至,每遇疑难,不辞教诲。80年代我们的几本荷书,陈老均一字一句批改,就连标点符号、有误的简笔字也不放过。这册《续志》稿成,我们恭请陈老为之作序。陈老兴致勃勃以诗代序,尽情抒发老一辈园艺家对莲之爱和对我们的加勉。陈老这种治学严谨、诲人不倦、助人为乐的精神,永远是我们学习的榜样。

我国著名的社会活动家、佛学家、诗人、全国政协副主席赵朴初先生两度为《荷志》题写书名,谨此向赵老表示衷心的感谢。

1997年11月13日《人民日报》刊载了我国著名的语言学家、史学家、北京大学教授季羡林老先生的《清塘荷韵》散文。他亲手播种几粒莲子,几年中,目睹它们发芽、长叶、开花、衍





生满塘产生的喜悦心情，赞美生活，讴歌万物生灵的顽强生命力，坦荡老人豁达乐观的胸怀。我们把这篇美文收录书后，以飨读者。季老一生竭力往每一个求教者吹送春风，我们是受其“香远溢清”者之一。谨此，衷心感谢季老为本书题词。

从《荷志》至《续志》，春秋十载弹指间。我们缅怀一些曾鼎助过我们，在此期间先后谢世的老前辈、同行友好，他们是陈封怀、汪菊渊、章文才、孙祥钟、方建初、袁格方、姚毓缪、刘师汉等诸位先生，老领导巴南冈局长和汪灏所长。

澳门的区旗、区徽选荷花为图案，《续志》问世之时，正值澳门回归祖国之日。著者谨奉献此书表示热烈的庆贺！

人生短暂，我们用了大半生精力做荷花工作，花甲之后，操心《续志》居多。今日书成，夙愿得偿，如释重负。然而，荷花该做的工作还很多很多。改革开放的春风吹遍大地，科学研究的环境越来越好。无奈黄昏日暮，我们毕竟老了，力难从心，愿后继者居上，谱写 21 世纪辉煌的荷花新篇章。

著者才疏识浅，书中谬误难免，诚请我们的师辈、学长以及海内外老友批评指正幸。

王其超

张行言

1998 年 4 月 28 日于武昌

## Foreword

The years have gone by since we edited the book 《Chinese Lotus Flower Cultivars》 in 1989. The book was a summary of our 25 years work. We continued the work in 1990's and obtained fruitful results. The practical technical achievements were compiled into a small book called 《Lotus flower》， published by Shanghai Science and Technology Publishing House in 1998 as a Volume of the series book of Chinese Traditional Flowers, edited by Professor Shuxiong Yu. Most of the results are compiled into this book, 《Chinese Lotus Flower Cultivars-Continued》 (we call it 《Continued》 for short), the name of this book is from the continuity of the previous book, it is a sister book of the previous one.

In the 《Continued》， the research results of the natural distribution, habitat, characters and features, germplasm resources origin enriched the evidence of the theory that China is the origin place of lotus. The development history of lotus were divided into five stage, those are initial developing stage, developed stage, flourishing stage, decline stage, and fast developing stage. We hope this will be of use for further inquiry of lotus development history. In this book we use "Dual classification system" for ornamental plants, and create the new lotus flower classification system, which make a big pace forward for the lotus cultivar classification. As for the breeding and applications, the most advanced progresses in those areas were introduced. For example, the establishment of gene pool of lotus plant in China Lotus Flower Research Institute, the outer space breeding of white lotus in Guangchang of Jiangxi Province, the design and construction of "The world of lotus flowers" in Sanshui City, Guangdong Province and so on. There are tremendous contents

of lotus flower culture in China, the book will be valueless if there is no inclusion of this part, plus some of the contents are connected with cultivars. Therefore, we add a large chapter of "Gorgeous Lotus Culture", we believe that there must be a lot of omits, but we hope that the reader can get some preliminary picture and to increase understanding of the lotus flower culture. "Brief description of the cultivars" is the key part of the book, 170 cultivars were introduced. Among those cultivars, apart from several collected traditional ones, most of which are raised by lotus fans and researchers throughout the country in 1990's. Comparing with the previous 162 cultivars described in the first book ten years ago, the cultivars described in this book have higher quality, the ornamental value is increased apparently. The total cultivars included in the two books are up to 332. The morphological structure and ecological feature of the lotus flower described in detail in the first book will not be described here any more.

In order to communicate with outer world easily, the 《Continued》 is published in Chinese with English translation. There are about 340,000 words in total, plus 80 color pictures in the context and 170 cultivar portrait photographs. We try to make this book in good quality both in its text and picture and readable to all the readers. To combine scientific, knowledgeable, practical, and readable features together. This is only our hope, the outcome has to be commented by our readers.

The selected cultivars in 《Continued》 are mostly recorded from the plant growing in the gene pool of China Lotus flower Research Center. The following institutions provided their new cultivar resources for this book: Jinzhou Technical School of Hubei Province; Qu Yuan Fenghe Park of Hangzhou City; Beijing Botanical Garden, China Academy of Sciences; Wuhan Botanical Garden, China Academy of Sciences; Jiangpu Lotus Growing Farm of Nanjing City. Whereas the photographs and documents of new cultivars were provided by following Institutions: Vegetable Research Institute of Hunan Academy of Agricultural Sciences, Guangchang White Lotus Research Institute of Jiangxi Province, Shanghai Botanical Garden, Shanghai Daguan Park; People's Park of Xuchang. The materials mentioned above made this book more informative. We are grateful to all those institutions for their kind support and help.

At the beginning of 1990's. Mr. Jie Wang, the vice mayor of Wuhan city arranged special budget for the construction of gene pool of lotus flower, which improved our research condition greatly. We like to thank following friends and leaders for encouragements and concerning to us in various ways. Those are: Mr. Shuzhi Hui, the director of East Lake Scenic Spots Bureau, and vice director, Mr. Yuanxiang Zhang, The secretary general of Wuhan Landscape Architecture Bureau, Mr. Changfan Wang, and the director Mr. Lin Zhan, general engineer Chang Chen; The consultant of China Florists Association, Mr. Ganhang Wang, and former director of Wuhan Landscape Architecture Bureau, Mr. Qingchun Meng, Mr. Qingke Lu, and Vice general engineer Mr. Shuchang Bi.

During the period of compiling of this book, following friends offer the scientific guide in various way and we like to express our sincerely thanks to all of them. Those are: Professor Shuxiong Yu and Professor Minshen Xu of Beijing Botanical Garden of China Academy of Science, Professor Jiale Li of Beijing Landscape Architecture Bureau; Professor Qixiang Zhang of Beijing Forestry University; Professor Zhenqian Wu of Shanghai Landscape Architecture Bureau;



Professor Wei Chen of Tianjin Landscape Architecture Bureau; Senior engineer Xiangzhen Feng of Hangzhou Landscape Architecture Bureau; Senior engineer Yande Li of Suzhou Landscape Architecture Bureau; Senior engineer Guangliang Liu of White Lotus Research Institute of Guangchang; Senior engineer Shangzhi Li of Honghu Lake Park of Shenzhen; Chinese-American horticulturist Yingchun Shen, Horticulturist Shouji Xue of Beijing; Mr. Baozhen Gao, the vice director of Huayi Flower Arrangement School of Beijing, Mr. Cu Hua, the chief journalist of Xinhua News Agency, Famous Photographer, Mr. Yuanhao Ma; Photographer Ming Zhang; and our elder academic Brothers Professor Difei Lu, Professor Mingding Xia, Professor Zhengkun Xia, Professor Zhugong Xiong, Professor Dezhong Tong, Professor Qingdong Kong, and elder academic sister, Professor Yunxian Wan. Thanks are not only due to the academic guidance and help of the research, but also due to providing data and the hospitality they offered during our investigation.

Senior engineer Mingsong Chen of Urban Construction Research Institute of China Construction Ministry did research on Buddhism, the article he wrote, "lotus flower and Buddhism", have very rich content. But we can not include the whole article in this book because of the limit of the length of the book. We concentrate the article into a short one and Mr. Chen did not mind at all. Our ancestor said "To touch one deepest is the feeling". we thank Mr. Chen for his understanding. Engineer Donglai Wang, used his rest time to study computer and worked out the computer management system of lotus cultivars, the section of "the data base and service system of lotus cultivars" of this book was written by him. During the 10 years research of lotus flower, our work were supported by the former director and present director of East Lake Flowers and Miniature Art Research Institute of Wuhan, engineer Zhenhua Huang and senior engineer Xi Feng. Our partners Mr. Yongfu Lu, Mr. Yipin Pan, Xiong Gao, and Changshen Gao all contributed for this book, we like to thank them as well.

We like to give our special thanks to two senior scientists One is Professor Xuke Cheng, the former director of Shanghai Landscape Architecture Bureau. She expressed her sympathy to our research condition at the beginning of 1980' s, which still unforgettable up till now. In 1996, she chaired the identification meeting of the construction of gene pool of lotus flower and appraised our research achievements fully. She also promoted a motion for the increase of the research support of lotus flowers in the meeting. Recently we ask her to write a few words for our book and she wrote without any hesitation. Her words expressed her real idea and give us further

incentives for research. Another one is our teacher, Academician of Chine Academy of Engineering, Professor Junyu Chen of Beijing Forestry University. In 1963, when we were in the fogs of selecting subject, he showed us to deal with lotus flowers. From that time on, we started our life of loving lotus flowers. Any of our achievements in the research of lotus flowers in the past several decades is connected with his guidance and help. Nowadays, Professor is in the age of 80-90, and still working diligently and concerning our work very meticulously. Wherever there is difficulty, he gave us guidance. Our several books on lotus flowers in 1980' s, were corrected by him word by word, even the punctuation mark and single characters. He wrote a poem for the preface of this book to express his love of lotus and to encourage us. The serious academic attitude and always ready to help others spirit is always a good example for us to learn.

The famous socialist. Buddhist, poet, the Vice Chairman of National Consultative Congress Mr. Puchu Zhao offered his calligraphy to our book front cover twice. We like to express our truthful thanks to him.

Ten years have passed by just in a glimpse since the publication of first book. Some of those senior scientists and old friends who have helped us in our work have passed away. Those are Fenhui Chen, Juyuan Wang, Wencai Zhang, Xiangzhong Sun, Jianchu Fang, Gefang Yuan, Yuqiu Yao, Shuhan Liu, Nangang Ba and Hao Wang.

The flag and emblem of Macao all use the pattern of lotus flower. The time when our book is come to the world is the time of Macao' s return to its Motherland. The authors like to take this book as a gift to celebrate Macao' s returning.

How short is life. We used most of life to deal with lotus flower. We were much more concerning this book since we were 70 years old. The book is finished at last. what a relieve it is. However, there are still too much work have to be done on lotus. With the reform of China, the research condition is getting better. However, we are getting old and the force for scientific research is decreasing. We hope that there will be new comers to take over the project and write more beautiful episode in 21 century.

Because of the limitation of our knowledge, there must be mistakes hiding in the books. We sincerely appreciate all the critical opinion and corrections from our senior generation of scientists, academic peers and the fans of lotus flower.

Qichao Wang  
Xinyan Zhang

April 28th, 1998 in Wuchang, Wuhan, P. R. China



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# 1. 中国的野生荷花

荷花(*Nelumbo nicefera*)原产中国而非印度,20世纪80年代中国花卉科技工作者用大量无可辩驳的史料和考古学家的考古证据,予以澄清,对中国是荷花的世界分布中心和栽培中心在海外学术界基本取得共识。进一步了解中国各地野生荷花在不同纬度、不同海拔、不同生境下生长发育状况及其变异,对探索荷花在中国的起源中心和分布中心以及研究栽培种的演进规律、引导荷花育种、全面开发利用荷花资源为经济建设服务极为重要。

中国最古老的诗歌总集《诗经·陈风》载有“隈有荷花”句,意指7~11世纪华夏中州大地,凡有沼泽的水域都有荷花的自然分布。3000年过去了,祖国大江南北、长城内外的大小湖泊、沼泽、均留有荷花的芳迹。就关内而言,像山东的微山湖、河北的白洋淀、安徽的巢湖、江苏的太湖、江西的鄱阳湖、湖北的洪湖,以及湘鄂之间的洞庭湖等大型湖泊都有“野莲”、“野藕”的存在。素有“千湖之省”之称的湖北省境内,如刁汊湖(汉川县)花马湖(鄂州市)、斧头湖(武昌县)等等小型湖泊的挺水植被中,莲群落均占有相当的比重。这些大、小湖泊里的“野莲”、“野藕”,其共同特点:①都是从未经过人工栽培的野生荷花自然繁衍的结果。1954年长江中下游遇特大洪水,吞噬了整个洪湖的荷花,水退后不几年,散落在淤泥中的莲实,又萌发新株,重现“接天莲叶无穷碧”,证明“无主荷花到处开”所反映的客观事实。②内陆湖区人口疏密不等,必然受到诸如航运、旅游、养殖、捕捞、猎禽、采莲、挖藕等社会经济活动的影响,荷花居群所处的自然生态环境均遭受不同程度的破坏,但未触动野生性使之改变。③“野莲”、“野藕”都是聚集在湖周浅水区成群丛式生长,并和其它的挺水植物群落、漂浮植物群落、沉水植物群落与生态环境构成一定相互关系的一些植物群体的联合。各湖区的地理环境不同,其优势种各有所在,荷花不可能处处形成优势种。李伟等《斧头湖挺水植物的群落学研究》(1992)表明,在斧头湖繁衍的莲群落的频度,远远小于菰群落。莲群落只依赖适合的小生境下生长,那里的菰群落才是优势种。冯灿等对《鄂东花马湖水生高等植物研究》(1992)指出,在面积27.5km<sup>2</sup>的湖水里,各处都有野莲的分布,一般水深1.1~2.6m,盖度以7~9月最大,可达70%~90%。莲群从结构为浮水、沉水两层,伴生种有菱、苦草、金鱼藻、狐尾藻、竹叶眼子菜等,而优势种则是菱、竹叶眼子菜等。④同属一个种的荷花,因地理位置的不同,纬度的高低,生态环境的差异,在悠悠岁月中而形成不尽相同的生态型。如‘尚志红莲’(黑龙江省)、“济宁红莲”(山东省)、“西湖红莲”(浙江省)、“玄武红莲”(江苏省)、“洪湖红莲”、“青菱红莲”(湖北省)等均是。以上说明“野莲”、“野藕”在我国黄河流域、长江流域沿线的大小湖泊里都有不同密度的分布。

20世纪70年代以来,报刊陆续报导了黑龙江省发现野生荷花资源。笔者随中国花卉协会荷花分会组织的科技考察组,于1996年8月赴黑龙江省对野生荷花资源进行一次考察。考察活动是沿黑龙江的主要支流及分支松花江、牡丹江、乌苏里江、穆稜河、挠力河、虎林河等大小7条河流而行,途经11市(不包括哈尔滨市、大庆市)和三江平原,深入到农村僻野,对各市县所辖的大小8个湖泊、泡子、3个人工塘堰和种植池进行了实地考察,足迹涉及半个黑龙江

省。内容包括该省野生荷花的分布范围、生态环境、生长状况、种或类型等。

## 1.1 分布

黑龙江野生荷花资源分布甚广,这次考察所到的8处湖泊,仅是其中的一小部分。在黑龙江省西部的许多市县,甚至在纬度更高的北部五大连池附近亦有野荷分布。

黑龙江野荷分布的地理位置为东经125°30′~134°17′,北纬43°30′~48°22′之间,覆盖了黑龙江省东南部。在这大片土地上,野荷分布在黑龙江、松花江、乌苏里江及其支流呼兰河、拉林河、蚂蚁河、牡丹江、穆稜河、虎林河、挠力河等河流两侧支叉旁的泡子里,或大型湖泊的边缘。这里属平原,地势较平坦,江河两岸附近多沼泽,凡有沼泽处,多有野荷或其它野生水生花卉繁衍[图1-1、1-2]。



图 1-1 黑龙江野生荷花景观



图 1-2 黑龙江野生荷花形态

## (一)属松花江水域

方正县德善乡莲花池,面积约106.7ha;桦川县江川林管站莲花池,面积约15ha。

## (二)属黑龙江水域