第二届国际木兰科植物学术讨论会论文集

PROCEEDINGS

OF

THE SECOND INTERNATIONAL SYMPOSIUM

ON THE FAMILY MAGNOLIACEAE

夏念和 曾庆文 徐凤霞 吴七根 编

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图书在版编目（CIP）数据

第二届国际木兰科植物学术讨论会论文集
=Proceedings of the Second International Symposium on the Family Magnoliaceae / 夏念和等编 .
– 武汉 : 华中科技大学出版社 , 2011.9

ISBN 978-7-5609-7349-4

Ⅰ . ①第… Ⅱ . ①夏… Ⅲ . ①木兰科 – 国际学术会议 – 文集 Ⅳ . ① Q949.72-53

中国版本图书馆 CIP 数据核字（2011）第 182742 号

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出版发行：华中科技大学出版社（中国 · 武汉）
地　　址：武汉市武昌珞喻路1037号（邮编430074）
出 版 人：阮海洪

策划编辑：王　斌
责任编辑：黎若君
责任校对：段园园
责任监印：张贵君
装帧设计：百彤文化

印　　刷：利丰雅高印刷（深圳）有限公司
开　　本：889 mm × 1194 mm　1/16
印　　张：19
字　　数：240千字
版　　次：2012年3月第1版 第1次印刷
定　　价：88.00元

投稿热线：（020）66638820　　1275336759@qq.com
本书若有印装质量问题，请向出版社营销中心调换
全国免费服务热线：400-6679-118 竭诚为您服务

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出 版 人：阮海洪

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THE SECOND INTERNATIONAL SYMPOSIUM ON THE FAMILY MAGNOLIACEAE

5 – 8 May 2009
Guangzhou, China

ORGANIZED BY:

1. South China Botanical Garden **(SCBG)**, Chinese Academy of Sciences **(CAS)**
2. Botanic Gardens Conservation International **(BGCI)**
3. Magnolia Society International **(MSI)**
4. Guangdong Botanical Society
5. Magnolia Branch, Guangdong Botanical Society

CO-ORGANIZED BY:

1. Shenzhen Fairylake Botanical Garden
2. Shenzhou Magnolia Garden and Breeding Center, Xuwen
3. Kunming Institute of Botany, CAS
4. Nankunshan Nature Reserve of Guangdong Province
5. Forestry Bureau of Wenshan Prefecture, Yunnan Province
6. People's Government of Xichou County, Yunnan Province

SPONSORED BY:

1. Bureau of International Cooperation, CAS
2. National Nature Science Foundation of China
3. Guangdong Palm Landscape Architecture Co., Ltd.

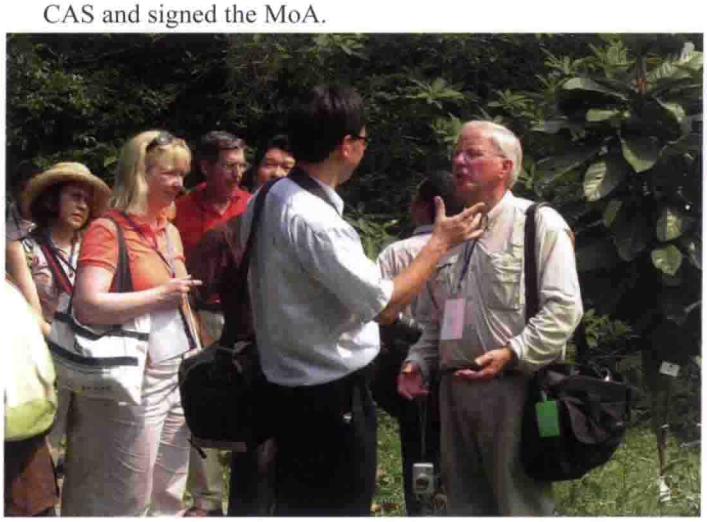
The 2nd International Symposi

ım on the Family Magnoliaceae

Guangzhou, China 5-8 May, 2009

▲ South China Botanical Garden (SCBG), Botanic Gardens Conservation International (BGCI) and Magnolia Society International (MSI) unanimously agreed to establish a "World Magnolia Center" based at South China Botanical Garden, CAS and signed the MoA.

▲ The plaque of "World Magnolia Center" based at SCBG, CAS.



▲ During the symposium, the participants visited the Magnolia Garden, SCBG, CAS.

▲ During the symposium, the participants had an excursion to Nankunshan Provincial Natural Reserve, Longmen County, Guangdong Province, China.

▲ After the symposium, some participants hunted the wild magnolias in Xiaoqiaogou National Natural Reserve, Fadou Town, Xichou County, Yunnan Province, China.

▲ The famous magnolia expert Mr. Richard B. Figlar affectionately kissed the large tree of *Pachylarnax sinica* (*Manglietiastrum sinicum*).

MoA on the Co-Establishment of "World Magnolia Center" in South China Botanical Garden (SCBG)

1. The family Magnoliaceae is one of the most primitive taxa of angiosperms, with a high ornamental, economic and ecological value. It is also one of the highest proportion of the threatened plants. Therefore, it is important and necessary to establish a 'World Magnolia Center' which will contribute to Target 8 of the CBD's Global Strategy for Plant Conservation (GSPC) and help ensure good practice in relation to Access and Benefit Sharing in line with the requirements of the CBD.
2. South China Botanical Garden (SCBG), Botanic Gardens Conservation International (BGCI) and Magnolia Society International (MSI) unanimously agreed to establish a 'World Magnolia Center' based at South China Botanical Garden, CAS.
3. With the assistance of BGCI and MSI, SCBG will carry out the *ex situ* conservation research of the world Magnolia Germplasm on the basis of its present Magnolia Garden. Exchange with botanic gardens, farms and nurseries in Asia, America and Oceania will be facilitated for carrying out introduction and cultivation experiments, *ex situ* conservation and restoration studies. This center will become the living plant germplasm conservation center and the research base for Magnolia conservation and restoration worldwide, which will be open to the international and serves for the international. In so doing, BGCI and MSI will give full support.
4. BGCI and MSI will recommend higher level academic professionals or experienced amateurs carry out collaborative research in SCBG, hold seminars, train personnel and exchange experience.
5. SCBG, BGCI and MSI exchange information using their own websites as a platform.
6. SCBG welcomes members of BGCI and MSI to visit SCBG and its Magnolia garden. SCBG will also provide any convenience for them.
7. To well build the world Magnolia Center, SCBG will work to raise the necessary funds to carry out related work. BGCI and MSI can provide some support within their capabilities.

Signed by: Huang Date: 5/5/2009
Huang Hongwen, Director
On behalf of South China Botanical Garden (SCBG)

Signed by: S.F.Oldfield Date: 5.5.09
Sara Oldfield, Secretary General
On behalf of Botanic gardens Conservation International (BGCI)

Signed by: Susan P Treadway Date: 5 MAY. 2009
Susan Treadway, President
On behalf of the Magnolia Society International (MSI)

Foreword

The family Magnoliaceae is one of the most primitive taxa of angiosperms (flowering plants). Knowledge of this family is essential for the researches on the origin, evolution, floristic geography and systematics of angiosperms.

Most of magnolias are widely enjoyed for their beautiful tree-shape, large colorful fragrant flowers, and their elegance. Many species provide high quality timber, are grown as ornamentals, or are used for medicine and perfume. Furthermore, many species are dominant constituents of tropical and subtropical forests. Due to degradation of natural habitats, and decline of their natural reproductive abilities, many magnoliaceous plants have become endangered or extinct in the wild. For these reasons it is important to engage in multi-disciplinary studies of magnolias, to conserve the germplasm of magnoliaceous plants, and to rescue the rare and endangered species.

The region of South and southwest China along with neighbouring areas, is the center of origin and diversity of the family Magnoliaceae. China has more magnoliaceous species than any other countries. Since the 1950's, South China Botanical Garden (SCBG), Chinese Academy of Sciences (CAS), has carried out significant multi-disciplinary researches on the Magnoliaceae, including introduction, propagation, and conservation of rare species, work has also been done on the systematics, morphology, cytology, embryology, palynology, phytochemistry, and floral biology of Magnoliaceae. A magnolia garden, which contains 11 genera and about 150 species of Magnoliaceae, has been established and has become one of the world's largest conservation centers for magnoliaceous germplasm. In May 1998 SCBG successfully organized and held "The First International Symposium on the Family Magnoliaceae". This symposium greatly stimulated cooperative research on Magnoliaceae worldwide.

In order to exchange recent research progress, enhance the conservation and sustainable utilization of magnoliaceous plants, and promote the cooperative research worldwide, SCBG together with Botanic Gardens Conservation International (BGCI), Magnolia Society International (MSI), and Guangdong Botanical Society, jointly organized "The 2nd International Symposium on the Family Magnoliaceae" on 5–8 May 2009 in Guangzhou (Canton), China. The symposium was co-organized by Shenzhen Fairylake Botanical Garden, Shenzhou Magnolia Garden and Breeding Center, Xuwen, Kunming Institute of Botany of CAS, Nankunshan Nature Reserve of Guangdong Province, Forestry Bureau of Wenshan Prefecture, Yunnan Province, and People's Government of Xichou County, Yunnan Province. The symposium was sponsored by the Bureau of International Cooperation of the Chinese Academy of Sciences, the National Natural Science Foundation of China, and Guangdong Palm Landscape Architecture Co., Ltd. The co-organization with BGCI and MSI strengthened greatly the appeal of this symposium. The financial support from the Bureau of International Cooperation of CAS and the National Natural Science Foundation of China made the scholars from the main magnoliaceous distribution area and the third-world countries could attend this symposium. It created a good chance to improve the third-world countries' research level on the family Magnoliaceae and promote the extensive exchange and cooperation among the colleagues worldwide. We would like to express our deep appreciation to Prof. Wu Zhen-yi (China) and

Dr. Peter H. Raven (USA), Honorary Chairmen of the Scientific Committee of this symposium, for their strong support and congratulations, though they could not attend this symposium because of busy work.

This symposium presented and exchanged updated research progress of Magnoliaceae worldwide in systematics, phytogeography, cytology, anatomy, molecular biology, phytochemistry, germplasm conservation, conservation biology, physiology, ecology, cultivation, propagation and cultivar breeding, etc. Totally 151 participants from 19 countries and regions attended this symposium, among them, 42 from abroad, 109 from China. The program of this symposium included keynote addresses, oral presentations, poster sessions, general discussions and symposium excursion. Totally 11 participants from 6 countries made keynote addresses, 21 participants from 15 countries made oral presentations, and 8 participants from 4 countries displayed their posters. Many participants brought their papers, books and magnolia experimental materials for exchange. This symposium had achieved great success under the effort of every respect, had set up a good platform for exchange and cooperation among the magnolia colleagues worldwide.

This Proceedings included 29 papers from the participants, and presented the updated research progress of Magnoliaceae worldwide in systematics, phytogeography, cytology, anatomy, molecular biology, phytochemistry, germplasm conservation, conservation biology, physiology, ecology, cultivation, propagation and cultivar breeding, etc. We are sure that it will greatly enhance the extensive communication and cooperation among the colleagues worldwide, and will serve as a valuable reference for those who are interested in magnoliaceous plants.

Editors

Guangzhou, China

May 2011

Contents

A New Classification System of the Famliy Magnoliaceae

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Abstract: Magnoliaceae is one of the most primitive family of angiosperms. It is widely distributed in tropical and subtropical regions of the world. There is no widely accepted generic concepts in the family. The genera number of the family varies from 2 to 17. Based on the revision of literature and herbarium specimens, a new classification system is proposed. The family Magnoliaceae is divided into two subfamilies with 17 genera. Within the subfamily Magnolioideae, two tribes and 16 genera are recognized. In the tribe Magnolieae, the genus *Magnolia sensu* Dandy, which is proved to be polyphyletic by different molecular analysis, is cut into smaller genera. The genus *Magnolia* is defined to include Dandy's *Magnolia* sect. *Magnolia*, sect. *Theohordon*, and Sect. *Splendents* Vazquez. Sect. *Rytidospermum* and Sect. *Oyama* are to be upgrade to generic level; Sect. *Gwillimia* and Sect. *Lirianthe* are united to be accommodated in the revived genus *Lirianthe*. The genus *Manglietiastrum* Law is reduced to a synonym of *Pachylarnax* Dandy, while the genus *Woonyongia* Law is recognized as a distinct genus from *Kmeria* Dandy. In the tribe Michelieae, five genera are recognized. The genera *Paramichelia* and *Tsoongiodendron* are reduced to synonymy of *Michelia*. Consequently the infrageneric systems for the large genus *Manglietia*, *Yulania* and *Michelia* are also established. The systematical arrangement of the new classification system of Magnoliaceae are as follows:

Subfam. I. **Magnolioideae**

Tribe 1. **Magnolieae**

1. **Manglietia** Blume
2. **Magnolia** L.
3. **Lirianthe** Spach
4. **Houpoëa** N. H. Xia & C. Y. Wu
5. **Dugandiodendron** Lozano
6. **Talauma** Juss.
7. **Oyama** (Nakai) N. H. Xia & C. Y. Wu
8. **Kmeria** Dandy
9. **Woonyongia** Law
10. **Pachylarnax** Dandy
11. **Parakmeria** Hu