

A new *Magnolia* blooms in Boston

by PETER DEL TREDICI and STEPHEN A. SPONGBERG

Magnolia zenii flowered for the first time outside its native China in 1988.

Without a doubt China is home to more species of hardy ornamental plants than any other country in the world, and many western botanical gardens have long histories of introducing them in cultivation. The Arnold Arboretum, principally through the efforts of E. H. Wilson, was a well-publicized leader in this area early in this century, when plant introduction from temperate Asia was at its peak. It is remarkable that even today new species of hardy woody plants continue to be discovered in China, presenting ongoing opportunities for plant introduction into the west.

One such "new" plant is *Magnolia zenii*, an extremely rare, endemic tree from Jiangsu Province, China. It was first collected on March 31, 1933, in flower, by W. C. Cheng in Chu-yun Hsien on Mt. Boa-hua (Paohua), at 250-300 meters in elevation and described by him in the same year. The tree was first brought into cultivation at the Jiangsu Institute of Botany and Botanical Garden, Memorial Sun Yat-sen, in Nanjing. In October 1980, the Director of this institution, Prof. He Shan-an, presented seeds collected from the only known wild population of *M. zenii* to Dr. Stephen Sponberg of the Arnold Arboretum and Dr. T. R. Dudley of the United States National Arboretum, who were visiting China at the time as

members of the first Sino-American Botanical Expedition.

Nine seeds were given to Dr. Sponberg, of which five were viable. These were given a three-month cold stratification treatment, after which they were sown in the Dana Greenhouses of the Arnold Arboretum on February 10, 1981. Four seedlings germinated within a month and grew vigorously enough to be set out in the nursery in spring 1982. In 1984 the largest individual was planted in front of the Hunnewell Visitor Center where it has continued its rapid growth. By the fall of 1987 this individual was approximately 3.5 meters tall and had set about a dozen flower buds, the first of which opened on March 30, 1988. It has flowered again this year, remarkably opening its first bud again on March 30, producing a total of 49 flowers. Its three siblings, planted in a much more exposed site along Goldsmith Brook, have not fared nearly as well, the largest being only about 2 meters tall. No doubt the shelter afforded by the Visitor Center has contributed to this difference in performance.

According to Dr. Frank Santamour, the U.S. National Arboretum has two plants of *M. zenii* raised from the seed presented to Dr. Dudley. Both are now growing in the Arboretum's Asian Valley garden, but neither of them bloomed in 1988

or 1989. This makes Arnold Arboretum #1545-80-B the first individual of its species to bloom in North America, and perhaps the first to bloom anywhere outside of China.

The flowers of *M. zenii* are extremely fragrant, and the tepals (the technical term used to describe the petal-like parts of the typical magnolia flower) are marked with rose-purple streaks on the lower half of their outer surfaces. Each tepal, when fully expanded, is 7 to 8 centimeters long and 2 to 3 centimeters wide. Cheng's original description states that the flowers have nine tepals, arranged in three whorls of three. Flowers produced by 1545-80-B in 1988 and 1989, however, had only six or seven tepals. This sub-normal number was due to the fact that on all of the flowers produced by the Arboretum's plant, either two or three of the innermost whorl of three tepals failed to expand beyond one centimeter in length. It will be interesting to see if this tendency to expand less than the full complement of nine tepals persists as the plant ages.

Magnolia zenii opens its flowers very early in Boston, about two weeks before *M. denudata* and about three weeks before either *M. kobus* or *M. stellata*. While such precociousness does not bode well for the wide horticultural use of the species in eastern North America (where destructive spring frosts are the rule rather than the exception), *M. zenii* may possess other traits, such as its pronounced upright habit of growth, that may turn out to be useful in future magnolia

hybridization.

As a juvenile plant, *M. zenii* roots readily from cuttings. During the six years it has been under propagation at the Dana Greenhouses, the best results were achieved with softwood cuttings, approximately 15 centimeters long, taken between June 15 and 30. The base of each cutting was dipped for five seconds in a solution of 5000 parts per million IBA dissolved in 50% ethyl alcohol and 50% water, and then the cuttings were placed in the greenhouse under intermittent mist. With this treatment, 7 out of 10 cuttings rooted in 1982, 21 out of 26 in 1985, and 7 out of 8 in 1986. These rooted cuttings of *M. zenii* have been distributed in a limited manner by the Arnold Arboretum since 1984.

References

- Cheng, W. C. 1933. Magnoliaceae, in Vascular plants of Nanjing II, by C. Pei. *Cont. Biol. Lab., Sci. Soc. China, Botany Series* 8(3): 291-293.
- Del Tredici, P. 1983. *Magnolia zenii*. *Magnolia* 19(1): 19.
- Dudley, T. R. 1983. *Magnolia zenii*: a rare magnolia recently introduced into cultivation. *Magnolia* 19(1): 20-22.
- Shan-an, H., Y. Zhi-Bing, W. Ming-Jun, A. Shi-xian, S. Jia-yu, and T. Jin-chuan. 1987. Investigation and introduction of some rare and endangered species in Nanjing Botanical Garden, Mem. Sun Yat-sen, pp. 255-260, in *Botanic Gardens and the World Conservation Strategy*. London: Academic Press.
- Spongberg, S. A. 1981. *Magnolia salicifolia*, an arboretum introduction. *Arnoldia* 41(2): 50-59.



Magnolia zenii at the Arnold Arboretum, specimen 1545-80-B, in flower and fruit, 1988. Note the six tepals. Drawing by Zsolt Debreczy and Nora Groh.

Peter Del Tredici is the editor of Arnoldia and Stephen A. Spongberg is a research taxonomist at the Arnold Arboretum and editor of the Journal of the Arnold Arboretum. This article was originally published in Arnoldia 49(2): 25-27 (Spring 1989) and is reprinted here with the kind permission of the editor.