

The propagation of *M. amoena* Cheng: A rare Chinese endemic

by Rob Nicholson

In the autumn of 1982 the taxonomists of the Arnold Arboretum were excited to see, in the Index Seminum of the Hangzhou Botanic Garden, a listing of the rare and untested magnolia species, *Magnolia amoena*. We eagerly requested seed and by late February of the following year it arrived and was immediately cold stratified. Subsequent sowing three months later produced 12 seedlings which, to the dismay of all, died due to damping off.

Attempts to secure more seed from Hangzhou were unsuccessful, and in the back of my mind I have always wished to atone for this disaster, even to go to China and collect seed myself. A proposal was put forth to the Chinese Academy of Sciences but was denied because the area in which the plant is native "is not open for visitors, even for Chinese."

It wasn't until 1985 that we received a second chance, when the Shanghai Botanic Garden included the species in its Index Seminum. The seed had been wild-collected in western Zhejiang Province from Chang-Hua Prefecture. This was the area from which the species was originally collected and described by the Chinese botanist, W. C. Cheng, in 1933. He found the tree in the Tienmu Mountains, a range that is about 50 miles from the coast and reaches as high as 1545 meters.

Zhejiang is a small province, about the size of Kentucky. However, in this limited area grow as many as 650 different taxa of woody plants.

In the fine book, *The Forests of China*, Chi-wu Wang describes the flora of the Tienmu Mountains as a mixed mesophytic forest, composed

of a large number of species. It is a complex mix of plants with no species or group of species dominating the forest composition and it shows a high number of endemics and monotypic plants. T. P. Chang enumerated the vascular flora of the Tienmu Mountains in 1936 and counted a mind-boggling 424 woody species.

Of the 180 that are trees, 67 species form the canopy layer. *Magnolia amoena* is found in this uppermost strata of the forest at an altitude of 700 to 1000 meters. This zone is dominated by broad-leaved deciduous species, although a number of conifers do appear. A list of *Magnolia amoena*'s companion species might give us some indication of the plant's unknown hardiness although this may be a fool's game at best. Some of the plants, such as *Acer palmatum* and *Kalopanax pictus*, are rated to Zone 5 while others such as *Lithocarpus henryi* are rated to Zone 8. The other magnolias in this forest zone probably offer the best clue; *Magnolia cylindrica*, *Magnolia heptapeta* and *Magnolia officinalis*. Based on these three it is not unreasonable to guess that *M. amoena* will survive in Zone 7 and possibly even Zone 6.

W. C. Cheng first described the plant as a tree 8-12 meters high with leaves 10-15 cm. long and 3.5-5 cm. wide. Flowers are precocious, fragrant, cup-shaped, 6 cm. in diameter with 9 oblanceolate or subspatulate tepals. The petals are pink or pale pink with filaments purplish-red.

As for its placement within the genus, Cheng felt the new species was most similar to *M. stellata* of

Japan and *M. zenii* of Jiangsu Province of China.

Our second supply of *Magnolia amoena* seed was received from Shanghai Botanic Garden in early March of 1986 along with wild-collected seed of *M. cylindrica*, *M. diva* (I assume *M. sprengeri*), *M. officinalis*, *Michelia crassipes*, *Michelia martina*, and cultivated seed of *M. heptapeta*.

The 10 seed of *Magnolia amoena* were given the notorious float test and each of the 10 seed bobbed like balsa. I call it notorious as the float test usually produces a sinking feeling among magnolia growers. Despite the dire prediction, I stratified the seed and after 75 days it was removed from the refrigerator and sown in mid-May. Within a week swelling had occurred and by June 12 a radicle had plunged downward. Cotyledons were up and spread by June 20 with 6 of the 10 seed ultimately germinating.

In their first season of growth, the seedlings grew to 9 cm. Should they continue to grow successfully, we hope to eventually increase the species by cuttings and within a few years hope to offer these for sale to our fellow collectors.

Rob Nicholson, author of this article and of "Joseph Hers and *M. biondii*" on page 15, is an assistant propagator at Arnold Arboretum, Jamaica Plain, MA., 02130, and a previous contributor to this journal.

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- Cheng, W. C., 1934. Notes on Ligneous Plants of China. Contributions from The Biological Laboratory of The Science Society of China. VOL IX—#3 p.279-281.
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Woody species of Tienmu Mountains—700-1000 meters

Acanthopanax evodiaefolius, *Acer acutum*, *A. palmatum*, *A. sinopurpurascens*, *Alangium chinensis*, *A. platanifolium*, *Albizia kalkora*, *Carpinus cordata* var. *chinensis*, *Carpinus laxiflora* var. *macrostachys*, *Cercis chinensis*;

Cornus controversa, *C. kousa*, *Daphniphyllum macropodum*, *Emmenopterys henryi*, *Euscaphis japonica*, *Fagus longipetiolata*, *Fortunearia sinensis*, *Idesia polycarpa* var. *vestita*, *Ilex latifolia*, *Illicium henryi*;

Juglans cathayensis, *Kalopanax pictus*, *Lindera glauca*, *Liriodendron chinense*, *Lithocarpus henryi*, *Litsea auriculata*, *Maackia chinensis*, *Magnolia cylindrica*, *M. denudata*, *M. officinalis*;

Meliosma oldhamii, *Nyssa sinensis*, *Pteroceltis hupehensis*, *Pterocarya paliurus*, *Pteroceltis tartarnowii*, *Pterostyrax corymbosus*, *Prunus buergeriana*, *P. brachypoda* var. *pseudossiori*, *P. serrulata* var. *spontanea*, *P. spinulosa*;

Rhus semialata, *Sassafras tzumu*, *Sorbus alnifolia*, *Stewartia sinensis*, *Tapiscia sinensis*, *Tilia japonica*, *T. pavcicostata*, *T. tuan* var. *chinense*, *Zelkova schneideriana*;

Cephalotaxus fortunei, *Cryptomeria japonica*, *Cunninghamia lanceolata*, *Cupressus funebris*, *Juniperus formosa*, *Nothotaxus chienii*, *Pinus tabulaeformis*, *Taxus chinensis*, *Torreya grandis*.