

Magnolia Mystery in Seattle

by Brian O. Mulligan

In October, 1948, the University of Washington Arboretum in Seattle received from Mr. F. G. Meyer, then at the Missouri Botanical Garden, St. Louis (now Dr. F. G. Meyer, supervisory botanist at the U.S. National Arboretum, Washington), seeds of several species of trees and shrubs which he and D. J. Rogers had collected in the Sierra Madre Oriental near Ciudad Victoria in the province of Tamaulipas, northeastern Mexico.

Amongst them was a species of *Magnolia*, Meyer and Rogers #2793, tentatively identified then as *M. schiedeana* Schlecht., collected at an elevation of 1,500 meters about 40 km. northwest of Ciudad Victoria. The seeds were stratified in cheesecloth in damp peat and placed in a closed container in a refrigerator at approximately 41° F. until May 15, 1949, when they were sown in the greenhouse. By June 20 three seedlings had germinated and were potted.

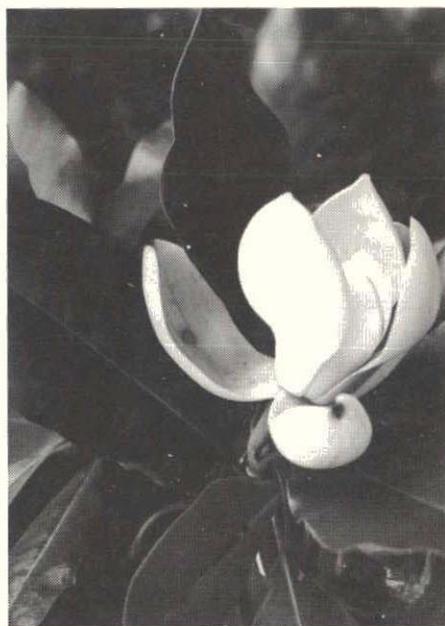
The three seedlings of #2793 were subsequently grown on in cold frames, the lath house and nursery until one was planted out in May 1953 in the *Magnolia* collection in the Arboretum. By August 1959 this plant was five feet in height but it did not thrive and died a few years later. The cause was primarily a knotted root system which had not been disentangled when the plant was originally set out. The site also was probably too shaded by native Douglas firs for a Mexican native, and competition from their root systems may have been a contributing factor.

In April 1954, a second plant was placed on a steep slope facing southwest above the grounds' Azalea Way, sheltered from north or northeast winds; the soil here was considerably heavier than at the first site, with more clay and less sand. The plant grew steadily if not very rapidly, despite the presence of a large tree of *Prunus* × *yedoensis* immediately to the north of it, but showed no signs of flowering until the summer of 1971 when it was 22 years old.

By the end of June that year the conical flower buds, on silky, inch long pedicels were well developed, but it was another month before

sufficient flowers were open to photograph (below, p. 15). They are well supported by the stout pedicels, but because of the long and often curving branches, flowers can be hidden by the foliage. In size they are intermediate between *M. grandiflora* and *M. virginiana*, being approximately five inches across the three median tepals when fully expanded. The texture of these ivory white segments is remarkably solid and leathery, and because of this fact and also for their shape and poise, the flowers have definite ornamental value, enhanced by the distinct scent of lemon, although by no means approaching *M. grandiflora* in any of these characters or in its form, which in Seattle at least is a large, bushy shrub and not a tree, nor in its foliage, which lacks the substance and gloss of *grandiflora*.

At the time of flowering several flowers were



Flower of *Magnolia* species in Seattle. Inner tepals 2¼ inches long, ivory white. Photo by author Aug. 2, 1971.

pollinated with several clones of *M. grandiflora*, obtained through the courtesy of the Saratoga Horticultural Foundation, Saratoga, California, but no fruits resulted and neither did any set on unpollinated flowers.

The third seedling was sent to the Missouri Botanical Garden in October 1951 but no trace of this could be found in September 1971. Plants subsequently propagated from cuttings were distributed to the following institutions or individuals:

Strybing Arboretum, San Francisco (April 1964).

No subsequent information received regarding this plant.

Prof. J. C. McDaniel, Urbana, Illinois, (May 1966).

Plant survived in green house until at least Nov. 1970; understood to have died later.

U.S. National Arboretum, Washington (Nov. 1966).

Plant alive in pot in greenhouse, June 1970, but died later.

Saratoga Horticultural Foundation, Saratoga, Calif., (cuttings, March 1967).

Three plants in five-gallon containers, Sept. 1971. None alive, Aug. 1977.

Los Angeles State and County Arboretum, Arcadia, Calif. (April and Oct., 1969).

One plant alive, Sept. 1977.

Callaway Gardens, Pine Mountain, Georgia, (April 1969).

No subsequent information received.

Crown College, University of California, Santa Cruz, Calif., (July 1970).

No subsequent information received.

Department of Botany, Clemson University, Clemson, S. Carolina, (Oct. 1969).

Plant died in first winter; minimum temperature 12°F.

From all these trials only one plant appears to have survived, namely that at Los Angeles. It is very probable that they do not enjoy being confined to pots or other containers for several years.

It should be noted that there is no evidence in records at the Arboretum that the late Carl English, Jr. of Seattle supplied the arboretum any plants of this *Magnolia*, as stated by Prof. McDaniel in the *AMS Newsletter* of September 1970, although it was listed in Mr. English's catalogues for 1950 and 1951. A second plant now growing in the Arboretum's Woodland Garden was propagated by a cutting from the original specimen and was planted there April 1967. It, however, has not yet flowered and the original only bloomed again very sparingly in August 1976.

In comparing the Seattle plant with the original description of *M. schiedeana* by D. F. L. von Schlechtendahl in the *Botanische Zeitung*, vol. 22, no. 21, pp. 143-145, (May 1864), which is

in German with a Latin diagnosis, I have the benefit of a translation from the original text by Dr. B. J. D. Meeuse of the Department of Botany, University of Washington, for which I am most grateful. Following are the principal characteristics of (a) *M. schiedeana* Schlecht.; (b) the Seattle plant; and (c) another living specimen identified as *M. schiedeana* at the Huntington Botanical Gardens in California.

(a) *M. schiedeana* Schlecht. A tree, entirely glabrous. Young branches with whitish rings formed by the stipular scars, the internodes covered with small nodules, lenticels small, oval to lanceolate, lighter colored, raised above the surface.

Leaves broadly elliptic, acute or acutish at each end, about twice as long as wide or a little longer, the following being sample measurements, (ratio of width to length, translated to centimeters):— 3.20:9.1; 5.20:10.20; 7.20:14.25; 7.70:15.40 cm., upper side dull, underside weakly glossy, principal veins "in the number of the low twenties," set at 2/3 right angles with the midrib, branching towards the margin and forming a dense network composed of rather large angular meshes, connected with the strands which form the outer margin: petioles about 3 cm. long, grooved, tapering upwards, bordered by the decurrent leaf margins.

Flowers, peduncles glabrous, 2.6-3.2 cm. long, the apical bract enclosing the bud 4 cm. long, broadly ovate, projected into a short mucro, finely granulated on the outside. Tepals nine in three rows, above them the stamens, about 30. Pistils (ovaries) forming a rather thick cylindrical axis 2.0-2.2 cm. long, warty when young, styles about 20, curving outwards.

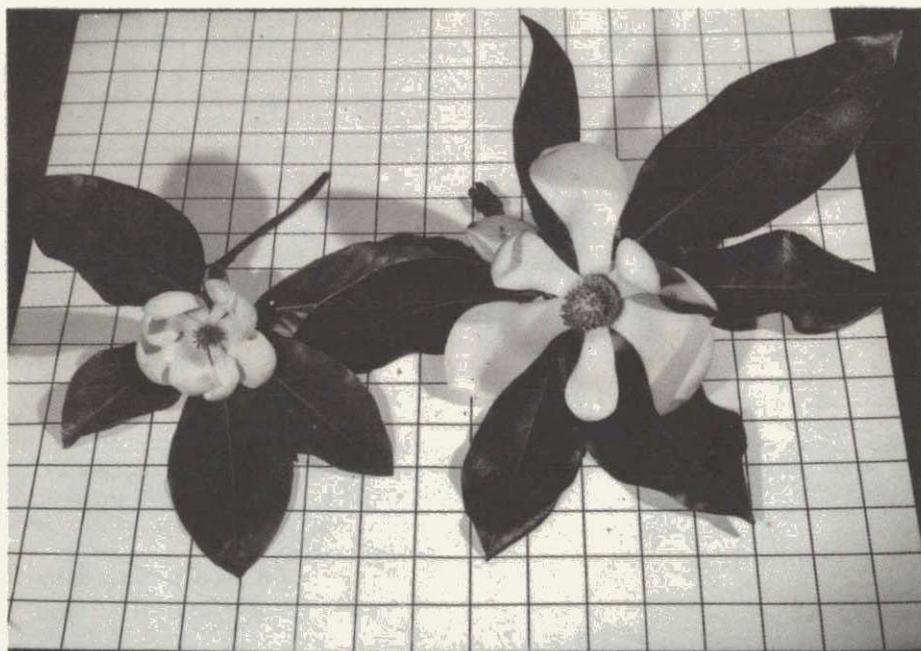
(b) Seattle plant. Grown from seeds of Meyer and Rogers #2793. Evergreen tree to 100 ft. tall. Grows on east to northeast facing valley in bottom of canyon, elevation 1500 meters, along mining road from Adelaida to Dulces Nombres, lat. 25° N, 100° 25' west, state of Tamaulipas, Mexico. July 16, 1948.

Description of plant at Seattle:

Stems of the current year densely covered with coarse strigose appressed hairs, almost disappearing in the second year except at point of leaf insertion and around axillary buds; stems remaining green for several years, in the third year developing elongated, raised pale brown lenticels.

Terminal leaf buds 2.5-2.8 cm. long, including the outer protecting scale, also densely appressed, strigose, pubescent.

Leaves borne on a stout grooved petiole 2.5-3.0 cm. long, coarsely pubescent at least in the lower half when young but losing this with age, widest near base (3-4 mm.); lamina coriaceous, elliptic to elliptic-lanceolate, cuneate at base, acute in varying degrees at apex, 14-18 cm. long, 6.5-7.5 cm. wide, dark green on upper side and slightly glossy, glabrous, the midrib markedly paler than the blade, the underside distinctly paler green than the upper, the main veins raised, usually 12-13, anastomosing before reaching the margin, the entire lower surface covered with short



Against a background of one-inch squares are shown the Mexican magnolia species, at right, and *Magnolia virginiana*, at left. Photo taken August 3, 1971, by William Eng for University of Washington.

pale appressed hairs, when young forming a scurfy pubescence, margin hyaline but entire.

Flowers produced singly at the ends of short lateral branches, borne on a stout silky pubescent peduncle 2.5 cm. long, 1 cm. thick, subtended by several (up to three) leaves of various sizes. Flowers markedly scented of lemon; sepals three, reflexing, boat-shaped, 7.0–8.2 cm. long, 2.5–3.0 cm. wide, dirty white in color sometimes stained green outside, apex blunt to acutish, texture thin but tough; outer tepals larger than others and alternating with them, broadly spatulate, upturned at ends, 7.0–7.5 cm. long, 4.3–4.7 cm. wide, ivory white, of solid texture, the veins clearly visible; inner tepals shorter than others, opposite to sepals, narrowly spatulate, 5.0 cm. long, 2.5–2.8 cm. wide, blunt, white. Stamens very numerous, appressed to the base of the gynoecium, tinged crimson at base, 1.2–1.5 cm. long; gynoecium approximately 4 cm long, 2.2 cm. wide; ovaries numerous, in 7–8 rows, styles recurved; flowers protogynous. Description of flowers made Aug. 3, 1971, by author.

(c) *M. schiedeana* at the Huntington Botanical Gardens. Collected by F. C. Boutin #2661, on north slope of Cerro San Juan, Nayarit, Mexico, off highway 54 to Jalcoctan, Dec. 4, 1968. Two trees now at Huntington Botanical Gardens, San Marino, California. Specimen collected from one by Myron Kimmach, Feb. 8, 1977, and supplied to the author.

Young shoots olive brown (in dry state), about 5 mm. thick, with a thin whitish ring at first around the stem at each leaf insertion, becoming gray with age,

and conspicuous pale whitish lenticels 1–2 mm. long; axillary buds dark brown, oblong to lanceolate, 4–7 mm. long, pubescent at apex and sometimes on outer surface or part of it.

Leaves elliptic, acute, broadly cuneate and shortly decurrent at base, 15–20 cm. long, 6.5–8.5 cm. wide, sparingly appressed pubescent on midrib beneath and on the pale green lamina with short white hairs; petiole 11–20 mm. long, finely pubescent in groove on upper side and along upper edges, brown when dry; venation raised and more conspicuous on the underside, pale brown, with 15–18 pairs of principal veins set at an angle of 45 degrees with the midrib, branching at apex and not reaching the thin hyaline margin, forming a distinct network of veinlets. Details of the flowers are lacking.

So far as the stems and leaves are concerned this plant agrees fairly well with von Schlechtendahl's description of *M. schiedeana*, particularly in having the whitish rings and pale lenticels on the stems; the leaves are somewhat longer than those of the latter and have a pubescence beneath which was evidently lacking in the original gathering from Vera Cruz state on the eastern side of Mexico. But as the late J. E. Dandy stated in his letter to Prof. McDaniel of April 2, 1970 which was published



Tom Dodd Jr., Lola Koerting, and Karl Flinck, left to right, chat at AMS meeting in Washington last spring.

in the *Newsletter*, vol. VII, No. 2, (Sept. 1970). "This (*M. schiedeana*) is the most widely distributed of Mexican magnolias and also the most variable. The indumentum varies greatly...". So evidently later specimens have shown that it is not by any means always glabrous as von Schlechtendahl thought. The conspicuous network of small veins on the underside of the leaf is also in agreement.

On the other hand, the Meyer and Rogers plant differs from *M. schiedeana* in the following details:—

Young shoots densely covered with coarse hairs, lacking any whitish rings formed by stipular scars, and the lenticels not developing until the third year. The leaves are somewhat longer, 14–18 cm. instead of 10–15 cm., slightly glossy on the upper instead of the lower side, covered beneath with short appressed hairs, the lateral veins 12–13 instead of 20 or more, set at an angle of 40–50 degrees instead of about 60 degrees with the midrib, the petiole at first pubescent.

Flower borne on a silky pubescent peduncle; the gynophore about 4 cm. long, instead of 2.0–2.2 cm. Further data on the flower characteristics of *M. schiedeana* are needed for proper comparison. The original specimens of Meyer and Rogers were collected in fruit.

On these grounds one might be inclined to consider the Meyer and Rogers plant to be a pubescent variety of *M. schiedeana*, representing an extension northeastwards from the previously known range. On the other hand we have the

late Mr. Dandy's considered opinion in print (Sept. 1970) that the Meyer and Rogers collection represents a new undescribed species of *Magnolia*. It is most unfortunate that he did not elaborate further on this suggestion during his lifetime, unless he left manuscript notes on specimens at the British Museum (Natural History) in London. Dr. Meyer has informed me in a letter dated August 26, 1977 that he is not prepared to accept Mr. Dandy's opinion "without first myself digging into the problem. At the moment, I can't see my way clear to do this."

The only other presently described evergreen *Magnolia* in Mexico is *M. sharpii* Miranda (1955), but judging by the description and illustrations in the publication (*Anal. Inst. Biol. Univ. Mexico*, XXVI, (1), 79, (1955)) it is well separated botanically from the Meyer and Rogers plant by its much larger and especially broader leaves (15–23 cm. long, 9–18 cm. wide), rounded or abruptly acuminate at the apex, rounded truncate at the base, glossy on the upper side like *M. grandiflora* and having 15–20 lateral veins on each side of the midrib instead of only 12–13. The flowers of *M. sharpii* appear to be larger, the largest tepals measuring as much as 11.5 × 7.0 cm. when fresh; the gynophore is smaller, to 2.7 cm. long, and silky fulvous; no such pubescence was noted on the Seattle plant when flowering, but this point should be checked again when it next blooms. *M. sharpii* has also only been found in Chiapas, the extreme southernmost state of Mexico, so it is likewise well separated geographically. The author considers it to be most closely related to *M. sororum* of Panama.

Even though the Meyer and Rogers plant has flowered so irregularly and sparingly in Seattle it would seem to have considerable value as a bushy evergreen of about the same hardiness as *M. grandiflora*. When it does bear flowers, these are of considerable merit for the substance, fragrance and quality of the blooms, though not for their size. It should certainly be tried in somewhat warmer and drier climates, not only in the U.S.A. but also in western and southern Europe, Australia and New Zealand. I believe that the necessary propagation and distribution will be carried out by the University of Washington Arboretum, Seattle.

Brian Mulligan is director emeritus of the University of Washington Arboretum.