Magnolia x gotoburgensis

Magnolia x *gotoburgensis* T. G. Nitzelius, an intersectional hybrid between *M. wilsonii* (Finet & Gagnep. Rehd.)/(subgenus Magnolia, section Oyama Nakai) and *M. hypoleuca* Sieb. & Zucc./(subgenus Magnolia, section Rytidosperum Spach)

by TOR G. NITZELIUS

In June 1972 two specimens of *Magnolia viz. M. wilsonii* and *M. hypoleuca* were flowering simultaneously in the Botanical Garden of Gothenburg. This gave me the idea to try a cross-pollination between them. The hybridization was performed tentatively with a single flower only of *M. wilsonii* as pollen receiver on a shrubby tree 3-4m high and about 25 years old of English nursery origin and growing in a protected corner of the garden. This specimen was subsequently killed in the hard winter 1986-1987. The pollen was taken from a 20 year old tree of *M. hypoleuca* belonging to a group of this species growing in the Asiatic section of our arboretum and originating from Tokyo University Forest, Yamabe, central Hokkaido, northern Japan.

In September the same year *M. wilsonii* produced a rich crop of purplish pink fruits including the hand-pollinated one. All of them contained a fair number of seemingly ripe seeds. As this specimen of *M. wilsonii*, like other members of the Oyama section, was self-fertile and yearly had a good harvest of fruits and seeds, I did not expect a positive result of my cross-pollination and thought that the flower after all might have been self-pollinated.

Anyhow, a number of seeds from the hand-pollinated fruit (about 7) were stored during the winter in a refrigerator (about 4°C) for sowing the following season.

Three plants came up in the course of July 1973 but were left without any particular attention in a frame for the coming winter. As they, in the beginning, habitually much resembled young seedlings of *M. wilsonii*, I did not expect them to be alive in the spring of 1974 taking into consideration the tenderness of this species in our climate, particularly in the seedling stage.

Quite surprisingly all three plants survived the winter unprotected except for a thin covering of snow. Immediately they became more interesting, especially as they, during the next summer of growth, gradually changed their leaf size and form to the *M. hypoleuca* type. Apparently the cross had been successful.

Out of this threefold grex one plant (clone 1) received a favored place in my garden, situated at 125m altitude in the hills rather close to the gulfstream-influenced west coast of Sweden (Lat. 56°22'N, Long. 13°8'E). The climate and edaphic conditions here are on the whole favorable to more hardy species and hybrids of magnolias

Flower of Magnolia x gotoburgensis *'Fragrance,' June 1990.*

(*viz. M. hypoleuca, M. kobus, M. stellata, M. salicifolia*—central Japanese strain, *M.* x 'Charles Coates'). In some ways these conditions remind one of parts of the montane region of central Japan (*e. g.* Nagano prefecture, which also appears to be the distribution center of *M. hypoleuca*). The precipitation, however, in my part of Sweden very rarely exceeds 900 mm/y (26 inches/year) and has therefore, particularly in spring, to be compensated for by watering and careful mulching. See K. Flinck 1973 on climate and cultivation of magnolias in Sweden.

One specimen (clone 2) was subsequently planted in the public formal garden "Norrviken" close to the small city of Båstad, About 30 km from my garden and bordering the sea of Kattegatt. This coastal strip has one of the mildest climates in Sweden and so facilitates the cultivation of a wider spectrum of magnolia species and hybrids, provided, of course, that they are of the late flushing types. Flowering of this clone is expected in two or three years.

The third specimen (clone 3) was sent in 1980 to Mr. C. Ferris Miller at Chollipo Arboretum in western Korea. Chollipo Arboretum lies close the the Yellow Sea and, as I understand, has almost perfect conditions for magnolia cultivation. This clone is, according to a kind letter from Mr. Miller dated October 1991, developing well, now being 4.5m high. It has not yet flowered.

Around 1975 I wrote to Professor J. C. McDaniel asking whether he

knew about hybrids between *M. wilsonii* and *M. hypoleuca* and received before long a letter dated October 8, 1975, from which the following may be quoted:

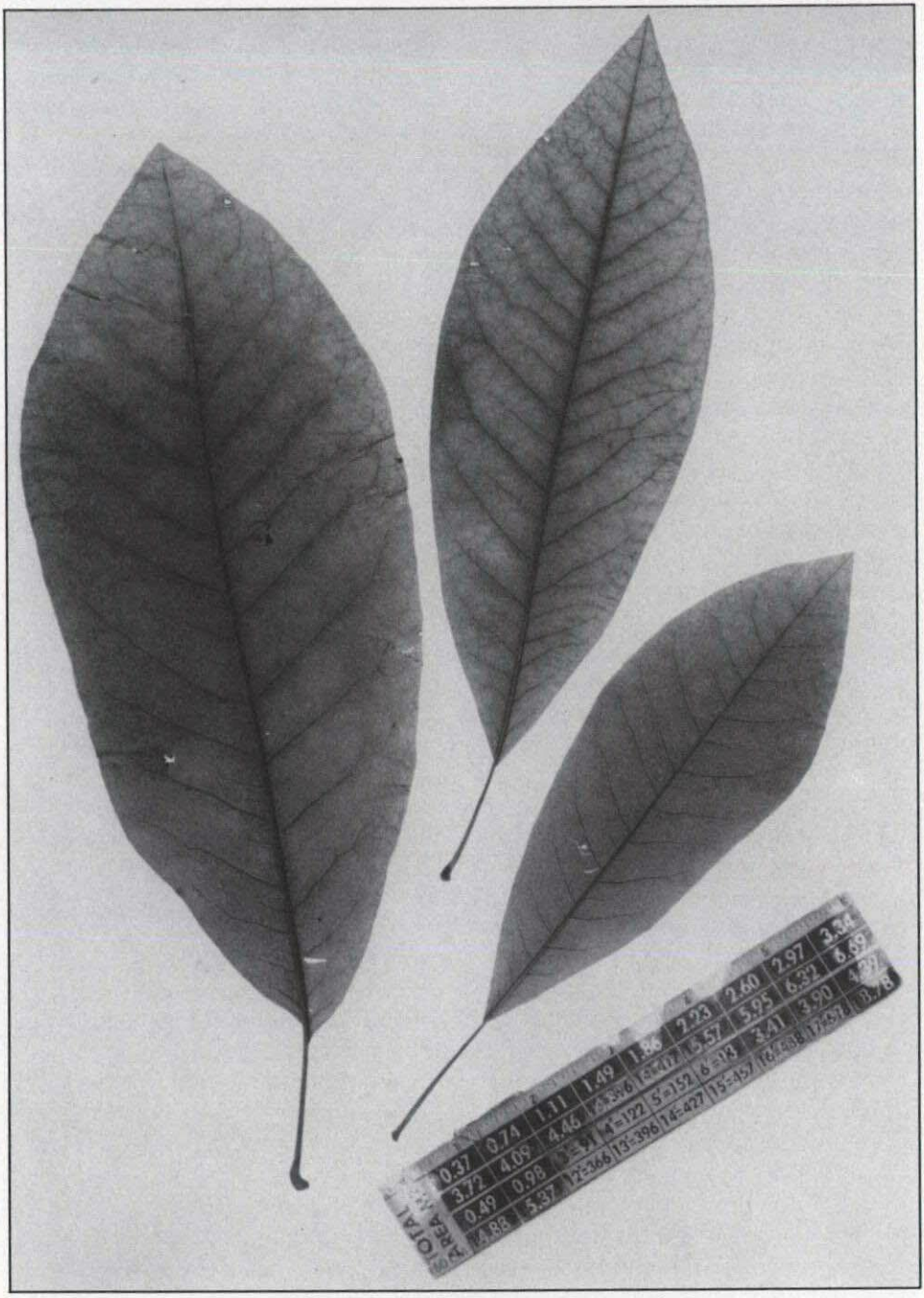
"...your hybrids of *M. wilsonii* x *M. hypoleuca* are not known elsewhere, to the best of my knowledge. We should be happy to try grafting a few twigs of the new hybrids here on older magnolias to get them to flower a little earlier...." He later commented on the hybrid (J. C. McDaniel 1979) in a note appearing in this journal. According to this note, he made several grafts from the scions I sent in 1976 but remarked, "...flowering is not expected before 1979 at the earliest...." Unfortunately, due to the death of Professor McDaniel, I do not know of the further development of the grafts and would be most obliged for information from any of the Magnolia Society members.

The summer of 1990, clone 1, now a 3-4m high, shrubby tree, flowered for the first time, at 17 years of age. The growth had, during the initial years, been delayed, owing to some exceedingly cool summers and harsh winters.

The following will give a broad description of available material of the grex, including the flowers of clone 1. Suggested name of the grex: *Magnolia* x *gotoburgensis* T. G. Nitz. in commemoration of the Botanical Garden, Gothenburg, SW Sweden, where the hybridization was first performed. Suggested name of clone 1: 'Fragrance,' owing to the pleasant scent of the flowers.

Shrubby, rather broad and irregularly branched (clone 1) or more or less narrowly upright tree (clones 2 and 3); bark greenish brown, smooth; branchlets purplish brown, pubescent and glabrescent; leaf-buds thinly pubescent; leaves narrowly to broadly obovate, 20-32 cm long and 6-12 cm broad, acute to acuminate, at base broadly cuneate; petioles 3-5 cm long; the leaves are grass-green above (young leaves pinkish green), glabrous, with slightly impressed nerves; whitish green beneath and in juvenile leaves tightly clad with whitish, straight or slightly curved hairs; adult leaves more sparsely hairy, except on the elevated nerves; flower-buds terminal on long shoots or on axillary short shoots, of the same type as in the other known members of the Oyama section; the buds shortly before anthesis attaining about 3/4 the size and the same morphological organization of a *M. hypoleuca* flower-bud; flower erect, reminiscent of the flower of this species, but smaller, being about 17 cm across; flower consisting of about 10 spoonshaped, 7.5-8.5 cm long and 3-4 cm board, white tepals; gynandrophore about 7 cm; gynoecium green, with straight, yellowish-pink stigmas; the surrounding stamens numerous, with crimson filaments; peduncle downy; the unripe syncarpium falling some time after anthesis. Whether this hybrid is completely sterile remains to be seen; cytologically it is diploid 2n=38. Type specimen (clone 1) kept in the herbarium (horticultural section) of the Botanical Garden, Gothenburg. Isotype in the Arnold Arboretum, Jamaica Plain, Massachusetts, USA.

Magnolia x *gotoburgensis* T. G.



Leaves of M. *'Fragrance.' Measure = 15 cm / 6 inches.*

Nitzelius, *hybridus novus. Hybridus intersectionalis, parentibus M. wilsonii et M. hypoleuca. Grex tribus plantis confectus est, clonibur I, II et III designatis, Magnolia hypoleucae similibus. Differunt tamen foliis minoribus, anguste vel late abovatis.*

A Magnolia wilsonii differunt foliis maiorbus floribusque erectis et apertis.

Magnolia x *gotoburgensis* appears to be a promising hybrid for South Scandinavian conditions, provided it is as floriferous as the mother plant, *M. wilsonii*, at least in an adult phase. From the pollenspending plant, *M. hypoleuca*, which is a representative of a northern population in central Hokkaido, northern Japan, it seems to have inherited a good hardiness. This advantage is fortunately linked together with an aptitude for late flushing (May-June), possibly inherited from the maternal plant.

It will not be possible for me to supply propagating material or plants to interested parties. As I consider the new hybrid a valuable addition to gardens, I have reached an agreement with Mr. Otto Eisenhut of Switzerland, whose nursery will distribute *M.* x *gotoburgensis*. It will probably take a couple of years before commercial stock will be available.

My thanks are due to Erland Ejder, who performed the chromosome counts on growing leaftips of *M.* x *gotoburgensis*, clone 1; to Erick Mikaelsson, who translated the latin description; and to Karl Flinck, who read the manuscript and gave me valuable comments.

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Tor Nitzelius, former dendrologist at the Botanical Garden, Gothenburg, has recently been awarded an honorary doctorate by the University of Gothenburg.