

## Magnolias in Ontario

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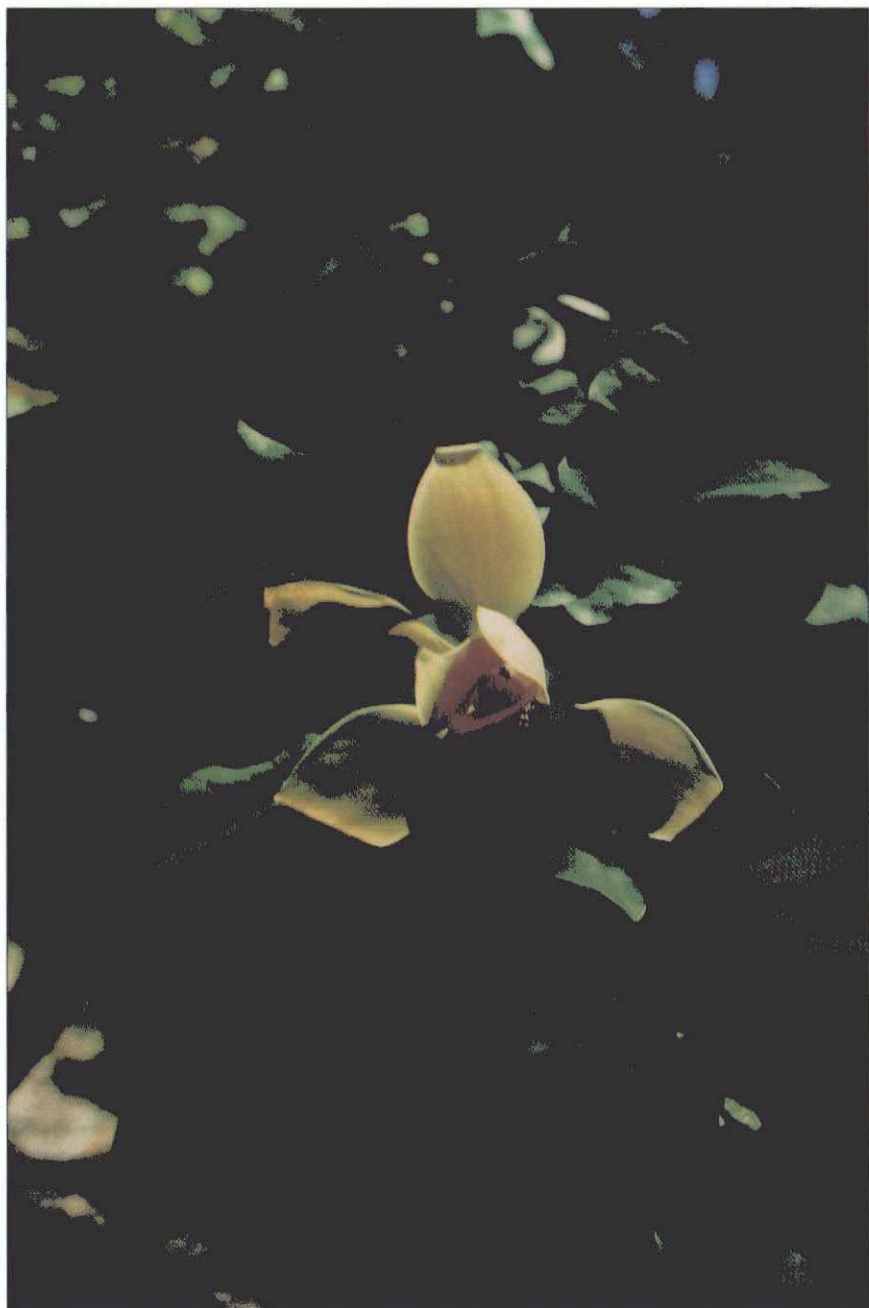
The province of Ontario, Canada represents a huge geographical area of 1,068,858 square kilometers (412,582 square miles) which is larger than France, the United Kingdom, Belgium and the Netherlands combined. From north to south it extends from Hudson Bay to the Great Lakes, and there is a wide range of climates and forest types. In the extreme north is a sub-arctic climate, tundra and Polar Bears, and moving south you travel through boreal forests north of Lake Superior, then mixed maple and pine forests and finally to a deciduous forest just to the north of Lake Erie in an area whose climate is significantly moderated by the Great Lakes. This final region has a forest which has similar characteristics to areas considerably further south in the United States and there are many species which can be found nowhere else in Canada. This is also the location of the only native Canadian magnolia, *Magnolia acuminata*, which can be found in only a few localities and is considered an endangered species. The habitat of this species is also under constant threat because it only exists in an area which is densely populated or under intensive agricultural use.

Given the vast territory of Ontario, this article will concentrate on my own area around Ottawa in Eastern Ontario, but I will make a few comments about the milder areas around Lake Ontario and Lake Erie as well which will re-emphasize the climatic differences which exist over relatively short distances. This is also a follow-up to the slide presentation which Gerald Taaffe and I made at the February, 1995 Magnolia Society meeting in Mobile, Alabama, on Magnolias in Zone 4.

Ottawa is the national capital of Canada and is located 160 kilometers (100 miles) northeast of Lake Ontario on the Ottawa River which is the boundary between the Province of Ontario and the Province of Québec. When Queen Victoria named Ottawa the capital of Canada in 1857 following years of squabbling between rival cities, the city was sarcastically referred to as a lumber village in the sub-arctic wasteland. To those who have lived through an



*Magnolia denudata* 'Purple Eye' at Chollipo Arboretum, South Korea.



*Magnolia fraseri* at *Dominion Arboretum, Ottawa, Ontario, Canada.*



Ottawa winter, there is some justification for this comment. Given the distance from the Great Lakes, the area receives little moderating influence and the winters are long and harsh. Winter temperatures normally reach  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ) and on rare occasions have reached nearly  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ). The city is considered to be in Zone 4b with the surrounding rural areas in Zone 4a. Snowcover is reliable from December through March but traveling only short distances to the south this is no longer the case. Statistically, this makes Ottawa slightly colder than Moscow and the second coldest capital city in the world. Only Ulan Bator, Mongolia is colder. On the other hand, summers are surprisingly warm with many days exceeding  $30^{\circ}\text{C}$  ( $86^{\circ}\text{F}$ ). With a continental climate and adequate rainfall, the area is favored with some of the best displays of fall color in the world. To those of you who attended the 1992 Magnolia Society meeting in Locarno, Switzerland where palms and *Magnolia grandiflora* flourished, you will be surprised that Ottawa is actually located further south.

The cultivation of magnolias here is quite a challenge. First, no magnolia is entirely hardy. Damage can be expected on all magnolias when temperatures approach  $-40^{\circ}\text{C}$ , but hopefully this will only occur once every 50 years. On those rare occasions, our reliable snowcover will often provide sufficient protection to the base of the trees and the roots to allow less hardy magnolias to eventually recover. Selection of only the hardiest species, hybrids and cultivars is critical to success as is the correct planting location. Magnolias exposed to excessive road salt or planted in windy or dry locations will inevitably fail. I have had to contend with all of these problems in my own garden which has added to the challenge.

Due to temperature fluctuations in spring, so many of us know that frost damage to open flowers is a common problem throughout most of eastern North America. In this northern location, however, the transition from winter to spring is much more abrupt allowing even the earliest magnolias to escape frost damage almost every year. One of the few benefits of this cold climate! Flowering season for magnolias begins in late April and extends through the month of May with a few exceptions.

*Magnolia*  $\times$  *soulangiana* is the most commonly available magnolia locally, but it is not the hardiest. This hybrid will flower most years but requires a protected location to establish and prosper. During particularly severe winters such as 1980/81 and 1993/94, most trees killed back to the snowline except in the most sheltered city gardens. Named cultivars such as 'Lennei,' 'Alba Superba,' 'Lilliputian,' and 'Brozzonii' appear to have similar

hardiness as the typical form available in the nursery trade. 'Rustica Rubra' is somewhat less hardy while one form of 'Alexandrina' appears hardier than average and survives colder winters. I have tried 'Picture' a few times, and it has not been hardy. In general, *Magnolia*  $\times$  *soulangiana* is fully hardy from Toronto and to the south around Lake Ontario and Lake Erie. Many large specimens can be found in those districts including the cultivars listed above and 'Verbanica' and 'Picture.'

The Little Girl hybrids also flower most years and have a more extended season than the Soulangiana hybrids. Following the winter of 1993/94, they generally showed less winter damage than the Soulangiana hybrids. They tend to be less vigorous, especially when young, which makes them a little more difficult to establish in cold climates

*Magnolia kobus* var. *loebneri* and var. *stellata* include some of the most satisfactory cultivars for the region. The loebner group includes 'Merrill,' 'Spring Snow,' 'Ballerina,' 'Leonard Messel,' 'Donna' and 'Willowwood.' The best performers include 'Merrill,' 'Spring Snow,' 'Donna' and 'Willowwood.' 'Leonard Messel' has a reputation for hardiness but has not performed well in my garden. Perhaps it's lack of vigor contributes to this. I have a 'Leonard Messel' seedling which originated from the seed exchange, and it has the same pink color, but more and larger tepals, good fragrance and more vigor. Possibly a good plant which needs further evaluation. The stellata group includes 'Royal Star,' 'Centennial,' 'Kikuzaki,' and 'King Rose.' With proper siting, all should do well most years but 'Royal Star' appears to be the hardiest and the most vigorous. It is also probably one of the best overall performers for the region. There are also several specimens of *Magnolia kobus* var. *kobus* (probably *borealis*) in the Dominion Arboretum, Ottawa. The oldest specimens flower magnificently every second year. They flower so heavily that they require two years to fully recover. The younger trees also flower well but not as profusely. Even these trees were damaged by the winter of 1980/81 with temperatures of close to -40°C.

The hybrid *Magnolia*  $\times$  *proctoriana* also grows in the Arboretum. It is the first to flower in the spring with small but very fragrant flowers. With this hybrid some buds do not open, probably because they can be damaged by freeze thaw cycles during winter. Similar hybrids include 'Slavin's Snowy' (*M. x proctoriana*) and 'Wada's Memory' (*M. x kewensis*). The former also flowers very early and does quite well while the latter has not been quite hardy. In Toronto, 'Wada's Memory' is hardy, and with it's large floppy



flowers, it resembles a tree laden with handkerchiefs.

The North American species also includes some of the best performers for cold climates. *Magnolia acuminata*, being native to Ontario, grows well here even though significantly north of its natural range. A large specimen exists at the Central Experimental Farm, Ottawa, and has withstood many cold winters including 1980/81 with relatively little damage. *Magnolia fraseri* is also equally hardy. This is a major surprise since its natural range does not extend nearly as far north as *Magnolia acuminata*. It appears to require good soil moisture to perform well and young seedlings are very attractive to slugs. *Magnolia tripetala* also performs well but is somewhat less hardy. A large tree was killed to the ground following the winter of 1980/81 but younger specimens were not as badly damaged. This species also requires good growing conditions. All three of the above species flower well except after the worst winters.

Other American species include *Magnolia macrophylla*, which grew for a number of years in one local garden and flowered following the cold winter of 1993/94 but has since died. I have failed to establish this species in my own garden so far, but I now have small seedlings which have overwintered outdoors. *Magnolia macrophylla* var. *ashei* also grew for a few years until it was severely damaged by the winter of 1993/94 and has since died. Flowering specimens, however, can be found near Niagara Falls, Ontario in Zone 6. *Magnolia fraseri* var. *pyramidata* survived one winter but was lost this year.

Hybrids of *Magnolia acuminata* offer considerable promise. 'Elizabeth,' 'Yellow Bird' and 'Hattie Carthan' have flowered, but 'Hattie Carthan' appears to be a little less hardy with some tip kill this year. Others being grown which have not reached blooming age include 'Woodsman,' 'Ivory Chalice,' 'Yellow Lantern,' 'Legend,' 'Sundance' and 'Gold Star.' One of the brightest yellows, 'Butterflies,' unfortunately has shown considerable injury every year since it was planted in 1992. In addition, a seedling of 'Miss Honeybee' is doing quite well with small but quite bright yellow flowers. Another plant originating from the seed exchange.

*Magnolia virginiana* flowered twice in my garden but failed to survive transplantation to a better location. I have since planted a number of other specimens from various sources in hope of finding another one which will flower here. My dry sandy soil does not offer ideal conditions for this species. *Magnolia grandiflora* has been tried in at least two gardens locally. On a few occasions 'Edith Bogue' has survived but only as a die back plant. This cultivar. and



Above: *Seedling of M. x loebneri 'Leonard Messel' from TMS seedcounter at Glenn Clark's garden, Gloucester, Ontario, Canada.*

Below: *Portion of the magnolia collection at the Royal Botanical Garden, Hamilton, Ontario, Canada.*





seedlings have reached flowering size near Niagara Falls, Ontario, and is quite a novelty for a northern area but will never perform as well as in its natural habitat in the southern United States.

In the Section Oyama, *Magnolia sieboldii* can be grown and will flower but requires special growing conditions. This year, flowering lasted for the entire month of June in my garden. To succeed here, this species requires good soil and a fair amount of shade. It will not survive in a dry location and intense sunlight can burn the leaves during hot weather.

In the Section Yulania, both *Magnolia denudata* and *M. sprengeri* 'Diva' have failed here but have done well near Detroit, Michigan. Both should be satisfactory in adjacent areas of Ontario probably as far north as Toronto. The *denudata* hybrid 'Purple Eye' has also done well in the Royal Botanical Gardens at the western tip of Lake Ontario, but after the cold winter of 1993/94 its buds were killed showing that it is slightly less hardy than the similar *Soulangiana* hybrids. *Magnolia zenii* is growing in my garden and appears to have similar hardiness as the *Soulangiana* hybrids but has not yet reached flowering size.

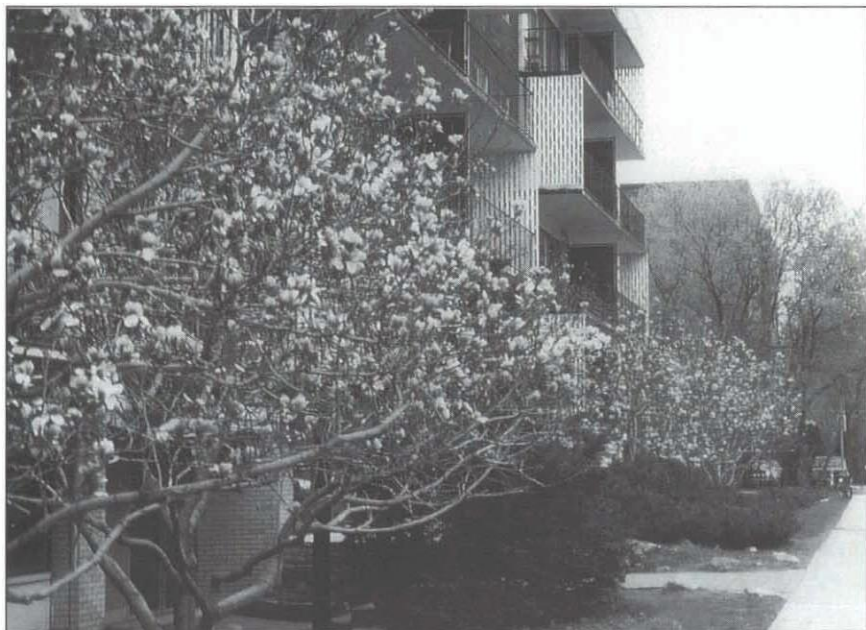
In the Section Buergeria, *Magnolia salicifolia* does well at the Royal Botanical Gardens, and my own plant, which lacks the anise scented foliage and is likely a hybrid, also does well. *Magnolia cylindrica* has failed to establish in two attempts despite its reputation for hardiness to at least  $-30^{\circ}\text{C}$ . An old tree in the Royal Botanical Gardens is labeled as *Magnolia biondii* and predates, by many years, the first known introduction of this species into the west. The true identity is therefore very questionable. Nevertheless, seed was collected, and young plants grew well in Ottawa for a few years, but the last few winters have severely damaged or killed them. I hope to collect more seed especially considering that the original tree is now showing some evidence of decline. This tree flowers very early in the season and the seed has a distinctive ridge.

*Magnolia liliiflora* has grown for many years in the Dominion Arboretum and has actually produced a few flowers but is totally unsuitable for the climate. It does succeed near Niagara Falls.

Another northern oriental species is *Magnolia hypoleuca*. My initial attempts have been dismal failures but seedlings from the seed exchange will hopefully do better.

Other cultivars under trial include 'Legacy,' 'Galaxy' and 'Marillyn.' All have shown injury so far but should do well near the Great Lakes. The Gresham hybrids, of which we saw so many fine examples in Switzerland and again at the Chollipo Arboretum in Korea, are hopelessly tender for Ottawa, but a few are being tried





*Magnolia x soulangiana in downtown Ottawa, Ontario, Canada.  
Survivors of the record cold of January, 1994.*

near the lakes. I have yet to see a flowering specimen in Ontario but that does not mean that it is impossible.

### Summary

Ottawa represents about the coldest climate where magnolias can succeed. This means that for most of the province of Ontario north of Lake Huron and Lake Superior in Zone 1 to Zone 3, the chance of successfully growing magnolias is slim. On the other hand, a surprising variety of magnolias flourish in the so called "Banana Belt" of Ontario near Lake Ontario and Lake Erie. In Ottawa, the range of species and cultivars is quite limited, and we must be prepared for damage following colder winters. We can enhance our chances of success by planting in good soil which retains some moisture and in wind protected locations. Despite the problems, a successful magnolia is a remarkable sight, considerably more exotic than any other tree or shrub grown in cold climates. Perhaps, if only briefly, we can pretend that we also live in the sunny south. 🍌