TREE SELECTION: A HORTICULTURIST'S VIEW[1]

by Leslie Laking

An inherent curiosity about plants, particularly plants not in general use in any given area, as well as those recently introduced through the efforts of plant breeders, provides horticulturists with an opportunity to approach the selection of plants, and in particular trees, from a relatively broad base. The horticulturist's special interest in 'new' trees arises from the expectation that through trial and observation, selected species and cultivars will eventually prove to be extremely valuable additions to the man-made landscape with which we are all concerned.

Such optimism is tempered by the disappointments we have all experienced in the performance of certain trees. Some have not proved sufficiently adaptable to conditions at hand or display too many faults for use by other than the collector. Furthermore, long association with a wide range of species and cultivars makes us more discriminating, often to the point that horticulturists sometimes feel that the ideal tree simply does not exist for a given purpose or situation.

What are horticulturists searching for in trees which can be recommended with confidence? To introduce this theme, let us turn to an occasion some 30 years ago when I was addressing a local chapter of The Men of the Trees. Here was an upstart horticulturist down-grading Norway maple which was in danger of being over planted in urban Ontario at the time. I was especially critical of its heavy canopy, its "blob" type form without interesting voids or other redeeming attributes once it comes into full leaf, and when in leaf, successfully inhibiting any plant growth beneath. The dean of Canadian landscape architects at that time retorted during the ensuing discussion, "if Norway maple is no good, what do we have left?"

Horticulturists concur with arborists, that first and foremost the tree selected must be hardy and culturally adaptable to the site, and if the tree concerned is to be 'permanent' it must be adapted physically at maturity. Beyond this, horticulturists consider the form of a tree as its enduring, all-season attribute. Next in importance, we look for trees with ornamental embellishments highlighting the changing seasons. Furthermore, we are not interested in the development of monocultures.

With our concern for variety, horticulturists recognize that compromises may have to be made. I have been accused of ignoring structural soundness in favor of seasonal interest and aesthetic appeal, and a specific reference to yellowwood serves to illustrate.

For a long time yellowwood, *Cladrastis lutea* has been a tree which I have considered worth promoting. Nurserymen rarely grow it; few are planted. Its weak branching system and its brittleness are emphasized as detractions in the literature. Until this summer, I have never experienced mechanical damage to a yellowwood though I recognize the possibility exists. Therefore I suggest that we assume it may suffer from weak crotches, and brace them while they are still intact. We should plant this species and proceed to enjoy its many attributes; silvery new growths in springtime, flower clusters terminating main and lateral branches in June gradually elongating to 15" branched chains of glistening white flowers with fragrance few have experienced, clean foliage, golden autumn color, and all winter long, smooth grey bark almost as good as a beech tree. And when it matures the interior of the tree can be looked into from below without small lateral branches to obstruct the sunlight filtering through the peripheral foliage.

If planted too close to an intimate garden area, spent blooms will have to be swept from the patio. At leaf-fall you may wish the whole compound leaf would drop instead of the leaflets dropping individually, leaving the rachis to fall later, requiring a second clean-up in autumn. Such annoyances are of little consequence in less intimate settings. This handsome mid-sized tree from Tennessee and neighboring states has proved reliable in Ottawa, and at the Arnold Arboretum, hence should be broadly adapted to the northeast. Is there any

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really good reason for not removing it from the neglected list?

In selecting trees for specific purposes in this day we are confronted with the idea that we should be using North American native species and their derivatives in preference to those from Europe and Asia. What should our attitude be? For at least a decade through the mid 1960's and early '70's, the earlier excessive emphasis on exotics was replaced by a movement in the other direction. Environmentalists, both the solid types whose wisdom we need and seek, and the Johnny-come-lately's, joined our naturalist friends in promoting the use of native species, often employing the same fervor used to promote the good organic life. Interest in the use of native species has undoubtedly increased and we are now finding a greater variety available from growers.

But horticulturists ask, what is the important point here? Are we being encouraged to use native species simply because they are indigenous? Native red oak is unquestionably one of the finest large trees for planting in much of the Northeast, but how do we view our native beech, *Fagus grandifolia,* now being propagated by some growers? This majestic species should be represented in arboreta and in conservation plantings where its characteristic profuse suckering from shallow or surface roots is something to be demonstrated. But, why would anyone promote this as a substitute for European beech, *Fagus sylvatica,* or its many interesting cultivars some of which have adapted so splendidly in the northeast?

Are native species really less susceptible to problems? We believe that they should be put to the same tests as any other trees being considered for planting.

The soundest argument for emphasizing native species in landscape plantings in my view is summed up in the notion that native species have a 'sense of place' promoting a certain harmony with the existing landscape. The recent interest in our roadside pagoda dogwood, *Cornus alternifolia,* as a small tree in cultivation serves to illustrate. It displays a good deal of charm, seasonal interest in flowers, fruits and autumn color, ample hardiness, as well as exhibiting a 'sense of place' in so much of the northeast.

However, should we need something similar with twice the size, we need to turn to its oriental counterpart, the giant dogwood, *Cornus controversa,* which I first admired at Rochester and more recently flourishing and flowering at the Royal Botanical Gardens, Hamilton. Though not particularly well documented, its hardiness range is more restricted than that of our native eastern *Cornus alternifolia.* Though neither species produce the much beloved spectacle associated with native *Cornus florida* or its oriental counterpart *Cornus kousa,* other seasonal attributes are equally delightful. In each instance native and exotic species have their place. We need both.

To further illustrate the use of worthy native species, we might examine the Carolinian species *Gymnocladus dioicus,* Kentucky coffee tree. Though it can scarcely qualify as having a 'sense of place' through much of the northeast, its use at the Royal Botanical Gardens, Hamilton, has created a good deal of interest. This species develops into a medium sized tree with a stark, sparse branching system made unique in winter with its characteristic coarse scaly bark even on the ultimate stout branches. The stark winter effect is prolonged by late bud break. Spring foliage is delightful when it eventually unfolds and by mid-June, terminal clusters of chartreuse colored flowers make their presence felt as much by their fragrance as by visual aspects. Summer foliage is unique because of size. Its doubly compound leaves resemble great three-foot fronds, casting light checkered shade. Kentucky coffee tree is unusually free from problems, is remarkably hardy and might well be added to our recommended listing of recommended trees for the northeast.

An earlier reference to form prompts a further examination of this attribute which gives a tree so much of its character. Present day substitutes for the ailing Lombardy poplar have brought into prominence a broad selection of fastigiate trees including columnar forms of both *Acer saccharum* and *A. platanoides,* of *Ginkgo biloba* and *Fagus sylvatica.* These are architecturally striking forms and though slower to develop, are much better quality trees than Lombardy poplar.

The Katsura tree, *Cercidiphyllum japonicum,* belongs ot this fastigiate company when young. However, if the magnificent specimen in Highland Park, Rochester represents the ultimate form at maturity, much of the contemporary use of Katsura is destined to be short-lived because of the limited space so often assigned in its use.

In selecting flowering crabapples, we have not been sufficiently preoccupied with form. In my view there are few with as pleasing and graceful a form as that exhibited by *Malus arnoldiana.* The oriental shy-flowering *Malus tschonoskii,* should be in much greater use because of its spectacular autumn foliage color as well as its fine upright semi-fastigiate form. Horticulturists continue to search for superior flowering crabapples and currently we are watching the performance of several, including *Malus* 'Cameron' an introduction from Ottawa. Form of these trees as they mature will be important in the final assessment of these introductions.

Interest in the tree forms of native *Amelanchier* on the part of landscape architects and horticulturists has developed as much from an appreciation of their open outreaching branching habit as it has from seasonal highlights of bloom and autumn color.

Tree specialists and horticulturists alike are interested in any species or cultivar which appears to be relatively problem free. For example, at the Royal Botanical Gardens we are watching the development of *Eucommia ulmoides,* an unusual collector's item noted for the latex component in its leaves. Clean, handsome elm-like foliage displayed by these specimens is a worthy attribute. The beautiful foliage and the graceful form displayed by Mongolian linden, *Tilia mongolica* as well as its apparent freedom from pests and disease is drawing attention to this species which has been in the RBG Arboretum for fifteen years. Long term observation of such species in many different locations will eventually determine their real value for landscape purposes.

This horticulturist's view of trees for the northeast, or for any other region, emphasizes the importance of variety in plantings. The use of standard species and cultivars of lindens, oaks and locusts needs to be complemented with high profile trees from the viewpoint of form and seasonal attributes. Furthermore, in addition to heeding what we already know about problems with specific trees, we must continue to search for others which are truly adapted to the areas in which we as individuals work. It is pertinent to remember that we still have as much to learn about behavior and ecological considerations respecting individual species and cultivars as we have already discovered through years of practice.

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ABSTRACT

Van Arsdel, E.P. 1980. **Managing trees to reduce damage from low-level saline irrigation.** Weeds, Trees & Turf 19(6): 26-28, 61.

Accumulation of salts in shade trees from low-level saline irrigation water is common in areas where irrigation is used to supplement the natural rainfall. The damage to vegetation from low levels of salt is occurring with water usually considered safe for irrigation. An aid to diagnosis of saline irrigation is the order in which the trees and shrubs show injury or die. A table of relative susceptibility is appended. This list should aid in diagnosis and in suggesting substitute plants where saline irrigation cannot be avoided. Management of low-level salinity irrigation problems presented here involves changing the source of water, watering less, and making physical and chemical modifications to the soil.