THE ROLE OF LOCAL ARBORETA IN SELECTING TREES FOR THE MODERN LANDSCAPE[1]

by Oliver D. Diller

Soil and climatic conditions vary so much within relatively short distances that it is difficult to make general recommendations on the most desirable species and cultivars for planting over a wide geographic area. Local shade tree arboreta have been found to be useful in testing a wide range of species for their suitability for local conditions. A few cities have established demonstration plantings on public property where local citizens can go and see what particular kinds of trees are like and to help them select trees to plant on their home grounds.

In 1954 a plot of ground five acres in area, back of the Wooster, Ohio community hospital was dedicated by the Wooster Shade Tree Commission as a city shade tree arboretum. Two each of over 60 different kinds of deciduous trees were planted and spaced so there would be no crowding. This planting was made with the full knowledge that some day part of this area would be needed for parking. Sixteen years later when the parking lot was expanded it was possible to use most of the already established trees in the parking islands. A beautiful shaded parking area was the result.

The remaining two-thirds of the open space is developing into an interesting park-like area with a wide range of species and cultivars representing many different sizes, crown forms, flowers, iages. The trees were numbered and the list with the tree names has been published in the local newspaper several times.

This modest shade tree arboretum has cost the taxpayer nothing. Funds to buy the trees were donated by two public spirited citizens and the planting was done at no cost.

The Wooster Shade Tree Commission has obtained much useful information from this 22-year-old planting. For example, observations have shown that pyramidal American linden, Beauty flowering crabapple, Globe head locust, Globe Norway maple, Paul Scarlet hawthorn, Hollywood plum, Italian alder, and certain cultivars of Mountain ash are among the less desirable street trees for Wooster conditions for various reasons. On the other hand, some of the newer selections of Norway maple, red maple, sugar maple, and honey locust have performed well. Lavalle and Washington hawthorn, Callery pear, upright European hornbeam, Kwanzan cherry, and some of the crabapples are excellent small trees for our community. Among the larger trees Armstrong and Bowhall red maples have been used on several streets where narrow crowned trees were needed while Amur cork trees were planted in a few locations where more space was available. Shingle and pin oaks have also grown well in the arboretum but their size and pruning requirements indicate their use as yard trees instead of in the tree lawn.

In 1966 another more extensive shade tree collection was established in Wooster at the Secrest Arboretum of The Ohio Agricultural Research and Development Center. This shade tree evaluation plot contains more than 30 species and cultivars of maple, over a dozen hawthorns and lindens, and 16 other genera with 34 species and cultivars. While only 10 years old, many trees in this planting show excellent performance while others are disappointing.

One of the advantages of a local shade tree arboretum is that locally adapted trees not included in general lists can be used. One of the shortcomings of many lists of approved trees is that selections are made by a consensus of several tree experts covering wide areas. Too often valuable locally adapted trees fail to make the general lists. No approved list for any city should be frozen. New introductions and new selections of old trees should be tried in local plantings. The more trials, the more surprises. The local city shade tree arboretum provides this opportunity for improving our landscape.

1. Given at the 52nd International Society of Arboriculture Convention, St. Louis, Mo. August 9, 1976.

Representative examples of trees in local arboreta follow:

Professor Emeritus
The Ohio Agricultural Research and Development Center
Wooster, Ohio

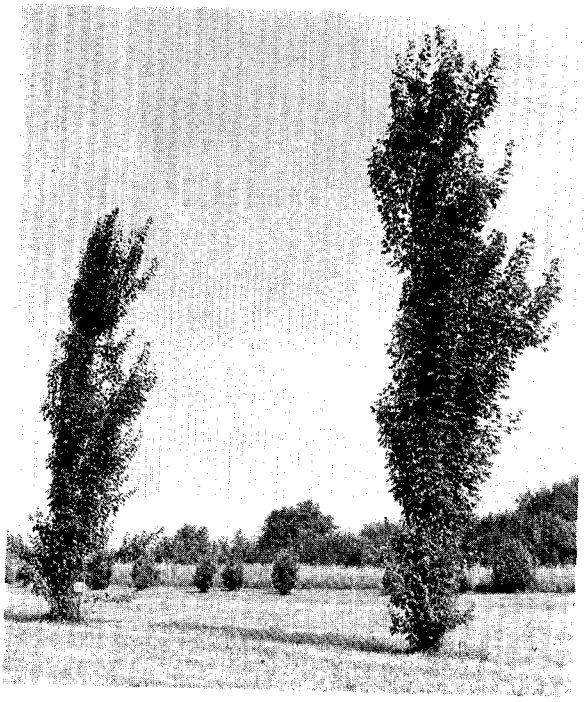


Figure 1. *Acer rubrum* 'Armstrong' has made excellent growth in the Wooster City Arboretum during the past 20 years.

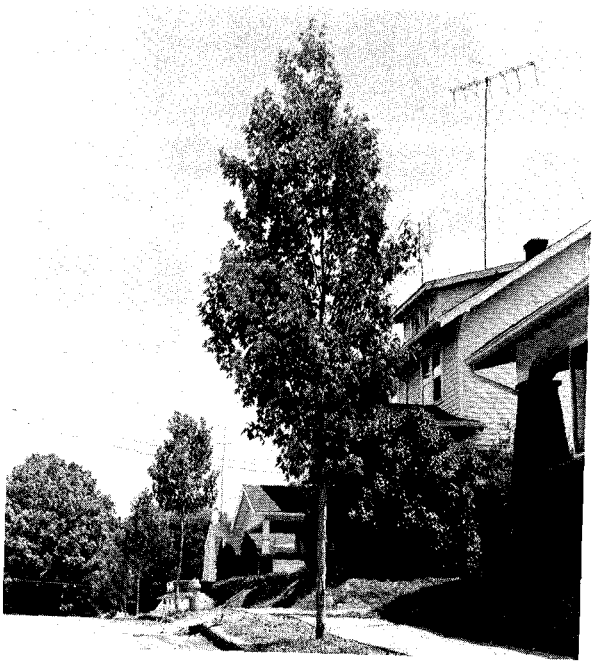


Figure 2. A number of Armstrong red maples have been planted in tree lawns where columnar trees were required.

Figure 3. *Phellodendron amurense* has grown well in the Wooster City Arboretum.

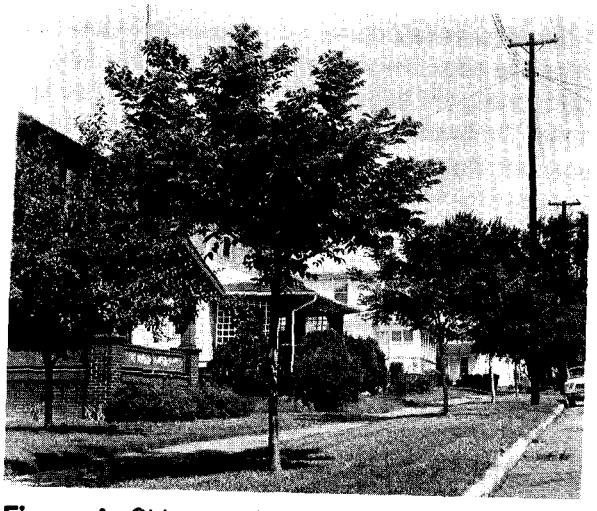
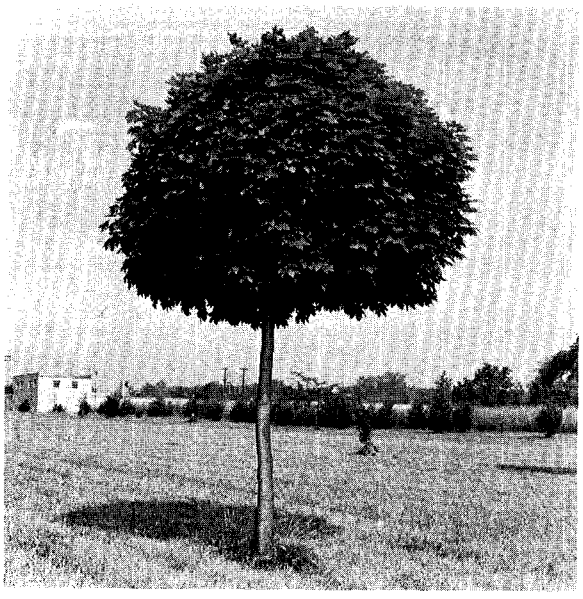


Figure 4. Chinese cork trees were planted in a wide tree lawn where spreading trees could be used effectively.



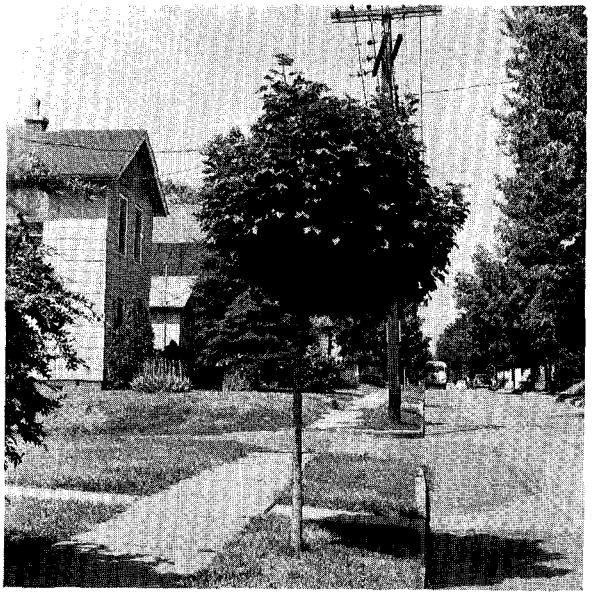


Figure 5. *Acer platanoides* 'Globosum' grew well in the arboretum (l) but its use along the streets of Wooster has been discontinued because of the difficulty in maintaining adequate clearance for pedestrian and vehicular traffic.

ABSTRACTS

Dix, M.E. 1976. **Protection of Great Plains shelterbelts from insects.** p. 169-171. *In* Shelterbelts on the Great Plains. Proc. Symp. [Denver, Colo., Apr. 1976]. Great Plains Agric. Council Publ. 78, 218 p.

Trees severely damaged by insects in the shelterbelts on the Great Plains are common, and they reduce the effectiveness of the entire shelterbelt. Currently the major pest species can be divided into two categories, the borers and the defoliators. Boring insects structurally weaken, deform, or kill their hosts trees. Defoliating insects decrease crown density and retard tree growth. Most surveys identify the problem but do not estimate its importance. Better methods of assessing and predicting insect populations are needed. Presently, insecticides are used to control all the major pest species. Few alternative immediate silvicultural or biological controls are available.

Rhoads, A.F. 1976. **Effects of air pollution stress on urban plantings in New Jersey.** American Nurseryman 144(11): 11, 48, 50-51, 54-55.

Trees for urban plantings must be able to survive in a hostile environment. On the other hand, trees can have an ameliorative effect on the harsh city environment. Trees are able to absorb gaseous pollutants, including ozone and sulfur dioxide, and to muffle noise. However, in most urban areas, the number of trees present is not sufficient to have a significant impact on air quality, temperature or noise levels. The major contributions of most urban plantings are visual and aesthetic. This article will cover some specific effects of air pollution, one of the urban stresses, on trees in New Jersey.