HAVE WE BEEN PREACHING THE SAME SERMON FOR 60 YEARS?

by Michael J. Walterscheidt

Urban Forestry had its start in the northeastern United States and more recently, the Midwest, West and Southeast have initiated programs. Many ideas have been put forth about the value of trees, the management of trees and species selection, but have we really changed much in the past half-century or have we long known many of the things we presently know, but have been unable to get the message across to the public?

Texas, as many other areas, has been relatively slow to accept the concept of urban forestry and the need to manage trees. Development of coordinated programs has been difficult. Education of the public and city commissioners has been a great stumbling block in the development of "genuine" urban forestry programs; however, much of the information always has been there. This article will examine a 40-page bulletin written by Lenthall Wyman, assistant state forester, and published by the Texas Forest Service in 1920 (1). The message Wyman puts forth will be compared with the message urban foresters and arborists are currently touting. Many of his ideas are similar to those of today; however, we can laugh at some of them. But remember, they were the best recommendations at the time.

In his introduction Mr. Wyman states that many communities are trying to instill a local sense of pride through women's clubs and chambers of commerce. I submit that this kind of effort is still going on and has changed little. It just seems to be taking a long time to instill this sense of pride. Apparently, only a small percentage of our communities have come to their senses over a 60-year period. I believe the major problem with these programs is a lack of the kind of dedication needed to establish continuity. Programs come and go and, therefore, trees come and go. Planting without maintenance and replacement plans does little over the long term.

The article further mentions that there is no more inexpensive, easy or satisfactory way to secure the comfort and attractiveness of a town than by extensive plantings of trees and shrubs. Trees are needed to purify the air and to ameliorate the environment. Trees are a form of city improvement that increases in value from the moment they are planted, whereas sidewalks, electric lights and drinking fountains begin to deteriorate as soon as they are installed. How long have we been trying to convince City Fathers of this?

Discussing tree selection, Mr. Wyman has both good and not-so-good ideas. Perhaps we have improved on this a great deal, for we certainly have more and better selections than were available 60 years ago. He states, "the natural form should be such as not to necessitate constant pruning. Trees for narrow streets should have narrow, columnar form. Trees should be chosen which do not sprout from the roots or have disagreeable odors. In general, long-lived trees should be used." His tree list doesn't always conform to his suggestions. It is as follows:

Trees adapted to narrow streets

Lombardy poplar	Hackberry
Silver maple	Carolina poplar
Tree of heaven	Box elder
Ginkgo	Mesquite
Black locust	Silver poplar

Trees adapted to wide avenues

Oaks	Ash
Elm	Cottonwood
Sycamore	Eucalyptus
Sweet gum	Willow
Basswood	Walnut
Tulip tree	Camphor tree
Honey locust	Mulberry
Magnolia	Russian olive
Pecan	Bois d'arc

Trees for very severe city conditions — narrow parkings, oil, smoke, etc.

Tree of heaven	Sycamore
European plane tree	Ginkgo

Short-lived trees

Poplar	Box elder
Chinaberry	Hackberry
Silver maple	Black locust

Untidy trees

Eucalyptus	Ginkgo
Mulberry	Tree of heaven (female)
Black locust	Bois d'arc (female)
Chinaberry	Japanese varnish
Cottonwood	Willow

Trees sprouting badly from the roots

Tree of heaven	Willow
Poplar	Black locust
Cottonwood	

Undesirable street trees in regions where other varieties thrive

Cottonwood	Chinaberry
Carolina poplar	Box elder
Tree of heaven	Evergreens

I think we can all pick the list apart using knowledge that we presently have. But we are still recommending and using many of the same species, some quite successfully. The booklet contains an extensive listing of characteristics of these trees and points out the faults of many, such as Lombardy poplar being short-lived. He concludes the section on tree selection by saying, "a safe rule to follow is to plant what your neighbor had success with," but admits that this is a conservative approach.

When discussing location, Mr. Wyman begins by noting the tendency is to plant too close together; owner affection develops and with it the reluctance to thin out crowded trees. He also recommends that trees not be planted too close to intersections because "in such locations they are especially liable to injury by pedestrians or by teams and automobiles if there are no curbings."

In 1920, it was already recommended that trees should be placed so they will not interfere with wires, otherwise they will be "mutilated" by linemen.

For planting the tree, it was recommended that a hole four feet square and three feet deep be dug. The hole should be filled with good topsoil after planting and plans should be made for irrigating the tree, if necessary. A cone of earth should be placed in the middle of the hole and the tree planted the same depth as it was prior to transplanting. The roots should be spread in the natural position and all backfill should be packed. After the fill is completed, some loose hay should be placed around the tree as a mulch. A diagram of the planting is shown in Figure 1.

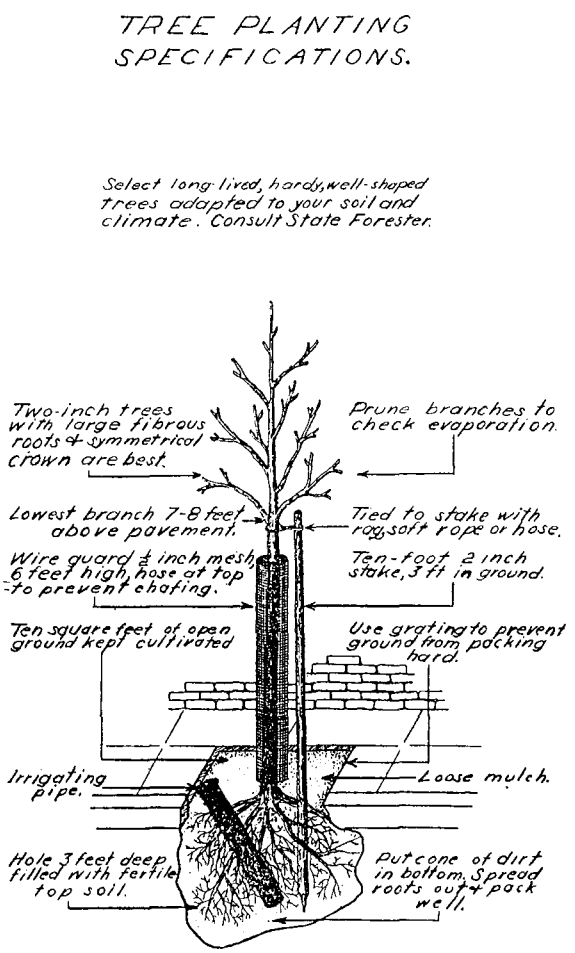

Fig. 1. Tree planting specifications.

It makes one wonder why so many trees fail to survive if we have been planting them properly for all this time.

"In subsequent care, all unpruned deciduous trees should be cut back in order to balance the shock caused by the failure to get the whole root system. Irrigation should be done every ten days

when the soil is dry. Surface irrigation tends to draw the roots to the surface, but sub-irrigating will allow for deep roots. Even more important than watering is cultivation. Frequent cultivation during the growing season is a great benefit to trees.

Only a few trees develop naturally into the desired form. Most trees become twiggy, bushy, or straggly. They need pruning or training in order to direct the growth into those branches which will give the trees a symmetrical appearance. Dead limbs may be removed at any time, but live limbs should be cut during the winter, if possible. They may be cut at other seasons, but during early spring, pruning will cause the tree to 'bleed' and will injure it somewhat, while late summer pruning may stimulate growth and make the new shoots liable to frost injury." He goes on to state that the safest way to prune large limbs is to use the three-cut method.

Perhaps our greatest advances in tree care have taken place in insect and disease treatment. Mr. Wyman talks about insects being especially bad in the city because of the lack of natural controls found in the forest.

Each of the major insect types is discussed and controls given.

Scales are well described with a brief life cycle. He discussed that winter control is most effective and recommends a lime-sulphur spray of 40 pounds unslaked lime and 30 pounds of flowers of sulphur per 100 gallons of water. Another good remedy listed is kerosene emulsion which is made by adding one-half pound whale oil soap and one gallon of water to two gallons of kerosene. This mixture is then diluted on a 1:15 basis with water for summertime spraying.

Mealy bugs can be sprayed with the kerosene emulsion or a carbolic acid emulsion made by adding 40 pounds of whale oil soap and five gallons of carbolic acid to 35 gallons of water. The stock solution thus prepared is diluted 1:20 with water.

Plant lice are sprayed with the carbolic acid emulsion or soap work, which is one pound of whale oil soap or hard laundry soap in five gallons of water.

Borers are deterred by use of whitewash which is three pounds of quicklime, two ounces of caustic potash and one ounce of carbolic acid per two gallons of water. Another deterrent is cement paint which is Portland cement mixed to the consistency of thick paint with milk. Painting either of these mixes up to 10 to 12 feet will keep borers from attacking trees.

Defoliating insects are sprayed with arsenate of lead. To keep insects from crawling up trees, a randing mixture of 16 pounds of resin and one gallon of castor oil is used. Ropes are dipped into the mixture and tied around the tree trunk. They need to be renewed every 10 days.

Mr. Wyman discusses rots. He states, "they gain access to a tree through branch stubs, through roots, or through deep scars and injuries. Rots often get a start in street trees through the drying bark of a stub in the top caused by poor pruning at the time of planting and subsequent neglect." He further states that, "heart and sap rots are prevented by careful pruning, followed by covering the wounds with tar, creosote or paint."

The treatment for rots or cavities is much the same as we used several years ago. All the rotted materials must be cleaned out by the use of a mallet, half-round gouge and chisels. Drainage should be provided at the bottom of the cavity. All openings made should be oval which will allow quicker healing. The inside of the cavity should be painted with creosote, tar or asphalt paint. This cavity should then be left open. If the cavity is large, a piece of sheet metal can be nailed across the opening to allow a surface for the cambium to grow on.

In cavities where little bending occurs, a mixture of one part of asphalt to six parts of sand or sawdust is placed behind the sheet metal cover. Concrete is used in small holes or at the base of the tree.

The only control listed for diseases is the use of Bordeaux mixture or lime-sulphur wash. Raking and burning of leaves will greatly assist in the control of diseases affecting the foliage.

"Street trees are very apt to be injured by horses. Where this danger exists, the tree should be protected by iron or wooden guards made large enough to avoid strangling the tree. Also, the use of grills or gratings are recommended in areas where there may be soil compaction." Escaping gas, ice cream salt; smoke, grade changing and many other causes are responsible for tree

sickness in cities.

The pamphlet is concluded by a section on urban forestry. "Every large Texas city should have a city forester to handle the selecting, procuring, planting, cultivating, spraying, trimming, and preserving or removing of all trees along the city streets. The city forester and the board under which he works should be free from all political influence." A suggested set of regulations for a city to use are as follows.

1. The board of (insert name) shall have full power and authority over all trees planted and to be planted in any of the streets or public places of the city, including the right to plant new trees and to care for the same, and to trim, spray and otherwise care for such trees, and to remove trees, living or dead.

2. The board of (insert name) is authorized to appoint a City Forester and such other employees and assistants as may be necessary, and to prescribe and define their respective duties and to fix the amount of their compensation. Such Forester shall be an expert, trained in the care and culture of trees.

3. The board of (insert name) shall recommend to the (insert name of civic legislative body) from time to time, ordinances to be enacted by the said (insert name of civic legislative body) for the planting, care and protection of trees in the streets and public places of the city; but no such ordinance not recommended by the said board shall be enacted by the (insert name of civic legislative body). Nor shall any ordinance enacted pursuant hereto be altered or repealed without the recommendation of said board.

4. The (insert name of civic legislative body) shall, every year, grant to the board of (insert name) such sum of money as it shall require and as to the said (insert name of civic legislative body) shall appear reasonable and just, for the planting, maintaining and caring for the trees of the city, for purchasing or raising new trees, and for other expenses contemplated by Sections 1, 2, 3 and 4 of this act.

5. No person shall, without the written permit of the board of (insert name) cut, remove, plant, break or injure any tree, plant or shrub in any of the streets or public places in the city of (insert name). Nor shall any person injure, misuse, or remove any device placed and intended to protect any tree, plant or shrub in any part of the streets or public places of the city of (insert name). Nor shall any person fasten a horse to any tree, plant or shrub, or to any device intended to protect the same, or place a post for the hitching of horses within five feet of any tree, plant or shrub in any of the streets or public places of the city of (insert name).

6. No building material or any other materials of any description shall be piled up against any street tree unless said tree is first sufficiently protected by a proper guard to prevent possible injury, and all instructions issued for that purpose by the board of (insert name) must be promptly complied with by the owner.

7. The board of (insert name) shall have power to remove any wire conduit or other thing that burns, cuts or chafes any part of any tree, whether trunk, root or branch, in any street or public place, in case the owner of the wire shall fail after three days' written notice to take adequate steps to prevent further injury.

8. No paving of any description shall be laid or maintained by anyone between the sidewalk and the curb which shall cut off the air and water from any tree.

Have we really changed much in our arboriculture and urban forestry in the past 60 years? You've read the article: you make the decision.

Literature Cited

1. Wyman, L. 1920. Tree planting in Texas towns and cities. Office of State Forester Bulletin No. 11. 40 p.

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ABSTRACT

GIBBONS, F.D., III. 1983. **The effects of mulches and antitranspirants on winter injury of evergreens.** Am. Nurseryman 157(4): 47-54.

Research was initiated in 1977 at Iowa State University, Ames, to identify mulching techniques and antitranspirants that could be used alone or in combination to reduce winter injury of container-grown evergreens overwintered in the field. In this study, the methods in which the entire plant was mulched were most effective in reducing winter burn. Mulching apparently maintains higher humidity levels and moderates temperature extremes around the foliage. Microfoam was found to be a more protective plant covering than straw.