
THE RE-OAKING OF AMERICA

by George Ware

The word "re-oaking" implies that there is a need to plant oaks on American landscapes that contain progressively fewer and fewer oak trees. Oaks are sometimes called "legacy" trees because, in so many cases, they came upon the landscape naturally over long periods of time and have been inherited as a part of the environment for those who have built homes among them. Oaks are known to have great longevity, but old age, senescence, and decline have begun to overtake seemingly venerable old-timers. In most cases, there seem to be few replacement oaks being planted. At best replacement oaks will be in a situation where great age gaps exist between the large established oaks and the young trees. Nevertheless, the planting of young oaks is a start. It has sometimes been said that oaks are hard to transplant and that oaks grow too slowly. The rapid growth and success of the International Oak Society attests to confidence and interest in growing and promoting oaks for richer and more diverse landscapes.

A Tribute to Oaks

Oaks are often given great respect or even reverential regard because of their great size and age. Veneration of oaks has produced an oak mystique. Ernest H. Wilson, noted plant explorer and horticulturist at the Arnold Arboretum, in his book "Aristocrats of the Trees" (1930), included a chapter called "Kingly Oak." Wilson's admiration for oaks is expressed in the paean:

Monarch of the woodland is the oak, of all trees most dear to us who live in northern lands. It is celebrated in literature from the earliest times, indeed, of no tree has more been written than of the oak.....Many of these are unsurpassed in beauty, size and stateliness among the trees of the whole world. Notwithstanding our admiration, indeed reverence, we have paid very little attention to the oak in ornamental planting. Possible because of the dignity and majesty of old giants scattered through this country and the parks of the Old World, where age and strength stand forth so prominently, the tree lover has assumed that oaks grow too slowly for practical ornamental purposes. Whatever its origin this fallacy is deeply rooted, yet it is a fallacy nonetheless.

Wilson continues in stating that over a period of several decades, oaks can be the most rapidly growing of deciduous-leaved trees. At the Arnold Arboretum in Boston, 54-year old oaks were found to be over 60 feet in height, surpassing the height of hickory, walnut, elm and maple, all planted at the same time.

Woodland legacy oaks are at home with soil situations that the trees over a long period of time have had a part in creating. There is yearly recycling of leaves into porous org-

anic soil rich in nutrients contributed by the recycled leaves. Acidity of these soils is maintained by the yearly contributions of decomposing leaves. Converting of woodlands to home sites and manicured lawns terminates recycling because the leaves are raked and discarded each autumn. Slow alkalization of the soil begins and may be reflected in a few decades by yellowing of foliage and decline of oak trees. The ecological lesson is that one who lives with oak trees should try to work with them on their own terms, or as stated in another way: create or re-create the woodland soil conditions associated with oak woodlands. A generous application of leaf compost or wood- or bark-chip mulch around an oak initiates the restoration of conditions conducive to oak health.

Large mature trees are also vulnerable to abrupt changes in their environment, especially the soil environment. Environmental episodes, such as excessive soil wetness or prolonged drought, may have a debilitating effect, but human disturbances, such as soil compaction, grade changes and trenching, may bring about decline or death of an oak tree in a short time. Longer term detriments are turf competition and soil alkalization.

Historical Significance

There is a rich association of historical events with oaks, owing to their great longevity, their grandeur, and their conspicuous and appealing contributions to the landscape. For example, a few ancient oaks that hosted long-past ceremonies such as treaty signing still remain as living monuments. Oaks that were planted by famous persons are honored often. Oaks used as land survey markers (witness trees) may still be encountered occasionally. The largest trees of each species of oak thus far found are recorded and updated by the American Forests organization.

Oaks make ideal trees for anniversary and ceremonial plantings because of their longevity, sturdiness and arboricultural merits. Some examples are planting ceremonies for Arbor Day, VIP visits, memorial observances, birthdays, dedications of parks and arboreta, and other special events. At each annual meeting of the International Society of Arboriculture, a tree-planting ceremony is conducted. Current interest in trees and tree-planting bodes well for increasing the planting of oaks.

Regionality

The natural geographic range of oak species determines in great measure the regions in which planted oaks may be grown successfully. For example, the ambience of the towns and cities of the southeastern States is often heavily influenced by the extensive prevalence of huge oaks bordering the streets. Three species comprise a large part of the inventory of street trees for most Southern municipalities: willow oak (*Quercus phellos*), water oak (*Q. nigra*), and live oak (*Q. virginiana*). Indeed, willow oak approaches monoculture levels in parts of some towns and cities. The same can be said of live oak in certain coastal urban situations. Thus, oaks constitute a large part of the urban tree populations of the southeastern States.

In contrast, oaks are a small part of the urban tree populations in the northeastern, midwestern, and Plains States. It is in this vast region that the challenge for re-oaking may be the greatest in the whole U.S. Pin oaks (*Q. palustris*) already are planted widely in this region. Pin oaks have been popular because of their rapid growth, good transplant-

ability, and aesthetic appeal, including red fall color. But leaf yellowing (chlorosis) is a serious problem owing to the widespread prevalence of alkaline soils in urban areas. Often soil alkalinity is not only associated with limey glacial substratum, but it is also produced by the dominating concrete environment of towns and cities. Soil acidification is difficult. Pin oak has its origins in swamps, floodplains, and low flat areas where soil acidity is the rule. Encouragingly, broader understanding of the poor suitability of pin oak for urban soils is slowly reducing its use.

In this northerly region, there are several native oaks suitable for urban planting. Ecological harmony between oak tree and planting site generally is favorable for the following: bur (*Q. macrocarpa*), swamp white (*Q. bicolor*), chinquapin (*Q. muhlenbergii*), shingle (*Q. imbricaria*), and red (*Q. rubra*). Oaks that naturally occur on sandy soil generally fare poorly in urban situations. Some examples are black (*Q. velutina*), and scarlet (*Q. coccinea*).

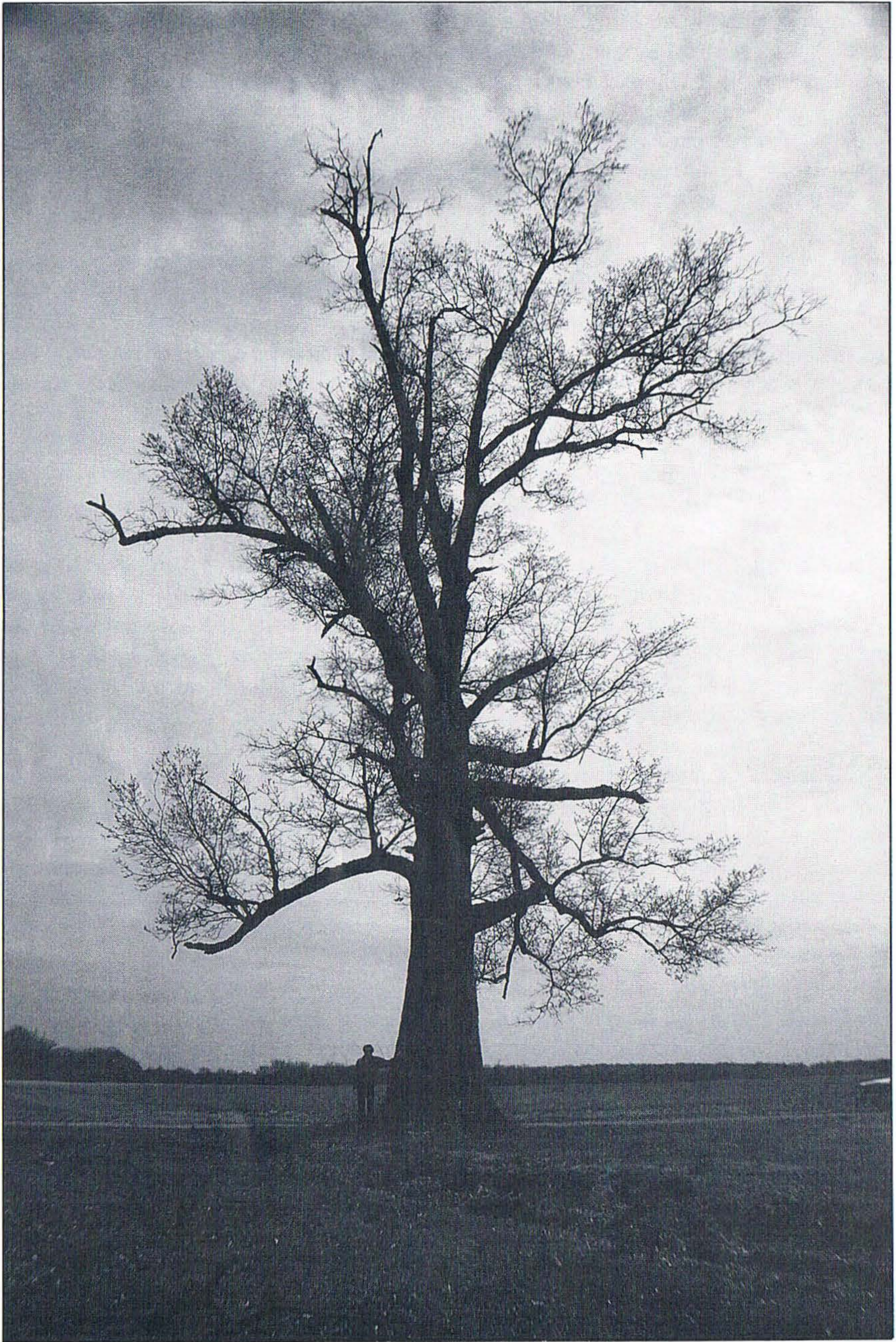
The increasing use of oaks in the southern Great Plains is evident. Townscapes of Kansas, Oklahoma, and Texas show the growing popularity of shumard oak (*Q. shumardii*) and Texas red oak (*Q. buckleyi*). Both of these show good red fall color. Chinquapin oak (*Q. muhlenbergii*) and bur oak (*Q. macrocarpa*) are less colorful in autumn, but are tough and reliable trees for landscape plantings. Texas live oak (*Q. fusiformis*) occurs naturally over a large area of Texas and is commonly seen as a planted tree in both Texas and Oklahoma. Unfortunately, oak wilt has killed tens of thousands of live oaks both in towns and cities and in natural stands. The future of Texas live oak is uncertain. Several oak species native to Texas and Oklahoma occur on sandy soils. Most of these do not transplant easily and also are not at home on the soils of town and city landscapes.

The mountainous natural landscapes of the West and the desert landscapes of the Southwest are home to many oak species, but because of great geographic and elevational differences, it is not possible to generalize on suitability or promise of oak species for townscape use. However, there are some excellent presentations of oaks on certain university campuses, including University of Arizona, University of Utah, and University of California at Davis. The oak arboretum at Davis is a splendid demonstration of what can be done with planted oaks.

The Pacific Northwest has very few species of native oaks, but Oregon white oak (*Q. garryana*) is notable in that it is a legacy tree with groups of large, mature old-timers in towns where homes were built among the trees several decades ago. Michael Reichenbach, in his presentation of this program, describes the great gap between the size and age of the old oaks and the oak saplings being planted in no more than minuscule numbers. This Oregon example is a compelling illustration of our challenging task to accelerate efforts to re-oak America.

Every region of the U.S. has oaks with suitable ecological credentials for successful use in places where people live, work and play -- streetscapes, parks, school campuses, golf courses, corporate campuses, and other open areas such as cemeteries. Recognition of the appropriateness and promise of oaks as planted trees has lagged. Re-oaking depends a great deal on oak education of the kind being presented at this first conference of the International Oak Society.

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Quercus texana (formerly *Q. nuttallii*), Horseshoe Lake, Alexander County, Illinois, USA. © Guy & Edith Sternberg.