



Better Turf for Better Golf

TURF MANAGEMENT

from the USGA Green Section

BEAUTIFICATION BY MEANS OF TREES AND SHRUBS

By DR. MARVIN H. FERGUSON

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TREES and shrubs certainly contribute to the beauty and usefulness of a golf course, and landscaping is one of the sure ways for a superintendent to provide a lasting monument to himself and his efforts. However, along with the thoughts of beautification, a superintendent must take a number of other things into consideration. He must think about how trees and shrubs will affect maintenance on the golf course. Competition of roots and shade sometimes make it difficult to maintain turf. There must be some rather intensive maintenance in trimming around trees and shrubs and some plants of this type may be considered as "dirty" because of the fact that they shed leaves, pieces of bark and seed pods.

A superintendent must also consider the effect of trees and shrubs upon the architecture of the course. These features on the golf course certainly help to determine the line of play and some types of shrubs may cause very serious hazards. It is not unusual for a player to find his ball under a low-branched tree so that he has to get on his knees to play it. Golf can become a very frustrating game to the victim of such a circumstance.

On the other hand, the value of golf as a mental therapeutic diversion can be enhanced considerably by the use of trees and

shrubs that make the course more pleasing. Hugh McCrae, of the Mid-Atlantic golf course superintendents' Association, has expressed the thought on numerous occasions that a fence covered with honeysuckle, a flowering crabapple, a dogwood, or an azalea planting can make a golfer forget his poor shots. He has an enjoyable day on the course, regardless of the state of his game.

Long Term Plan

The tree and shrub program on a golf course should be based on a long range plan. The first step in outlining such a plan is to make an inventory of existing trees and shrubs, together with an estimate of their remaining useful life. Replacements must be planned for suitably long in advance to grow them to the proper size by the time the existing plants are likely to die. Replacement trees and shrubs should be of the type that afford easy maintenance and of the type that will do the job that you expect of them.

We might discuss tree planting briefly. The steps to be considered are preparation of the site (it has been said that it is better to place a 10¢ tree in a \$10 hole than to place a \$10 tree in a 10¢ hole); proper anchorage, to make sure the tree is not loosened by winter winds; protection of

COMING EVENTS

- August 6**
Beltsville Field Day
Plant Industry Station, Beltsville, Md.
Dr. Felix Juska
- August 8**
Rutgers University Turf Field Day
Rutgers University
New Brunswick, N. J. Dr. Ralph E. Engel
- August 14**
Texas Turfgrass Association Field Day
Texas A. & M. College
College Station, Texas Dr. Ethan Holt
- August 15-16**
26th Annual Golf Course Superintendents Field Day
University of Rhode Island
Kingston, R. I. Dr. J. A. DeFrance
- September 4-5**
Penn State Field Day
Pennsylvania State University
University Park, Pa. Prof. H. B. Musser
- September 16-17**
Midwest Regional Turf Foundation Field Days
Purdue University
Lafayette, Ind. Dr. Wm. H. Daniel
- October 3 and 4**
Northwest Turfgrass Conference
Washington State College
Pullman, Wash.
- October 7 and 8**
Utah Turfgrass Conference
Ogden Country Club
Ogden, Utah J. W. Richardson
- October 10 and 11**
Rocky Mountain Turfgrass Conference
Colorado State College
Fort Collins, Colo. Prof. G. A. Beach
- October 14 and 15**
New Mexico Turfgrass Conference
New Mexico College of Agriculture and
Mechanic Arts
State College, N. M. Prof. C. E. Watson
- October 17 and 18**
Arizona Turfgrass Conference
University of Arizona
Tucson, Ariz. Prof. J. S. Folkner
- October 16-17-18**
Kansas State Turfgrass Conference
Kansas State College
Manhattan, Kans. Dr. Ray A. Keen
- November 18-22**
American Society of Agronomy Annual Meeting
Atlanta Biltmore Hotel
Atlanta, Ga.

the trunk against sun scald; protection of the lower part of the trunk against gnawing animals and against damage by mowers and other maintenance machinery. Soil around tree roots should be firmed well so that there are no air pockets left and fer-

tilizers should be avoided at the time the tree is planted.

Small Trees Preferable

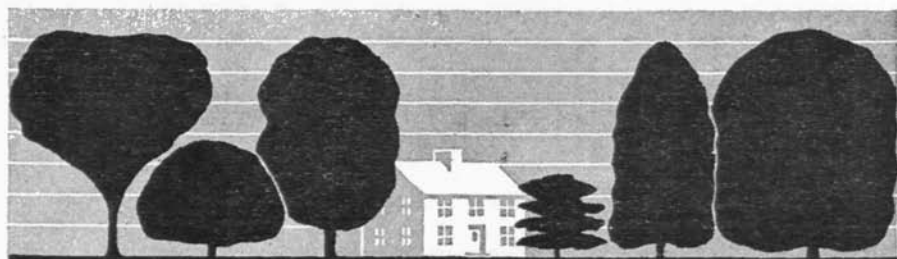
In the selection of trees, it is well to pick those that are nursery grown rather than those that are field grown. Nursery grown trees will have been root pruned to some extent and can be moved with less shock. In this connection, it is also wise to move smaller trees if you have time for them to grow rather than relatively large ones. Smaller trees suffer less severely upon moving and sometimes actually make recovery fast enough that they will overtake larger trees. If at all possible, trees should be chosen which do not produce numerous roots near the surface. The Chinese or Siberian elm and some of the maples are serious offenders in this respect.

Most golf course superintendents would probably be well-advised to choose a few species of trees and shrubs that are known to do well in their area, and to confine most of their propagation work to these species. On the other hand it would appear to be unwise to rely wholly upon one kind of tree. Oak wilt and Dutch elm disease furnish examples of the havoc that may be wrought upon any one particular species.

Transplant in Early Spring

There is a great deal of other information that is obtainable from most nurserymen. The time of planting will vary with location but it is generally thought that early spring is a good time to move most deciduous trees. This is particularly true if they are moved bare rooted. In spacing trees, one should consider the size of a given species when fully grown, and the amount of spread that may be expected of it. The accompanying charts show the mature size of some common shade trees.

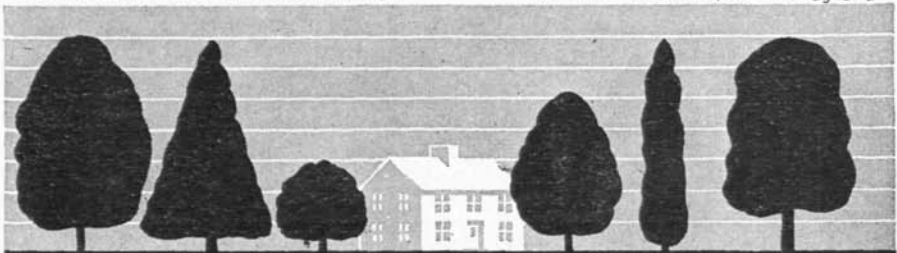
The size of the ball of earth that must be moved with evergreens will increase proportionately with the increase in the size of the trunk. For instance, a tree 1³/₄" to 2" in diameter, 1 foot above the ground, should have a ball of earth with a 22" diameter. A tree that is 4¹/₂" to 5" in diameter, 1 foot above the ground, should have a ball of earth 48" in diameter. (See Table 1)



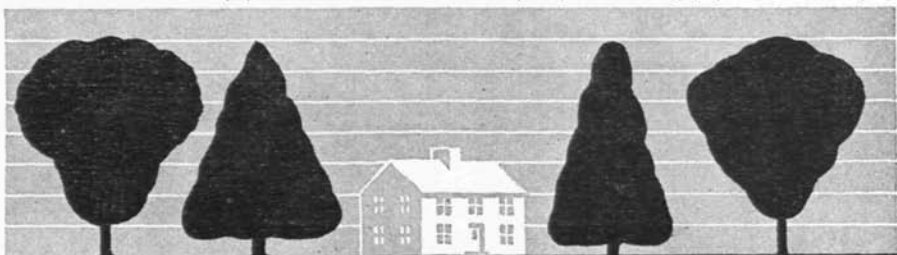
American elm Chinaberry Honeylocust Dogwood Pin oak Blackgum



Sycamore maple White pine Ohio buckeye Redbud Austrian pine Magnolia



American ash Norway spruce Hornbeam Norway maple Lombardy poplar Black cherry

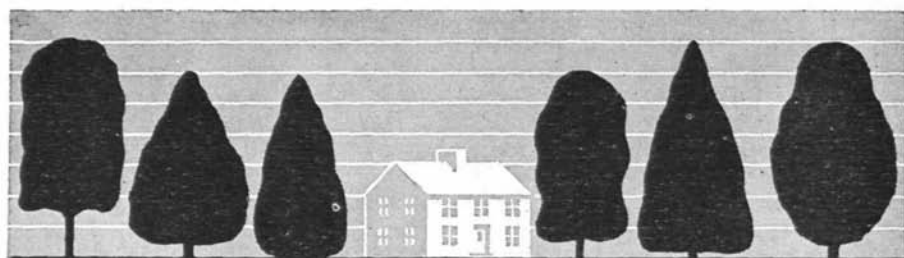


Eastern cottonwood Hemlock Red pine Red birch



Madrone American holly Arborvitae Live oak

Yearbook of Agriculture 1949



Tuliptree Ginkgo White spruce Catalpa Black larch Sugar maple



Red maple Paper birch Yellowwood Red mulberry White oak



Willow oak Horsechestnut Chestnut oak Sweetgum



American beech American linden Black oak Shellbark hickory



Sequoia Scarlet oak Redcedar Mimosa Hackberry Redwood

Yearbook of Agriculture 1949

It is sometimes wise to prune a tree at the time it is replanted. A good rule of thumb is to trim enough of the branches to balance the loss of roots resulting from the replanting.

There is an excellent discussion in the Year Book of Agriculture for 1949 entitled "Trees." The chapter title is "Keeping Shade Trees Healthy." The main points of the discussion are to select adapted trees, plant them in good soil and then follow this planting with a pro-

gram of soil maintenance, pruning, watering and treating as needed for insects and disease. This discussion also contains information concerning the amount of fertilizer needed and methods for applying it in tree and shrub maintenance.

This is a very brief discussion of a very important subject. There is much information that can be gained from professional nurserymen and horticulturists. Such a program is of very great importance in complete golf course maintenance.

TABLE 1: Recommended Minimum Ball Diameters for Different Sizes of Shrubs and Trees

Height of plant Feet	Diameter of ball Inches	Larger Trees	
		Tree diameter 1 foot above ground Inches	Diameter of ball Inches
1½ — 2	11	1¼ — 1½	18
2 — 3	12	1½ — 1¾	20
3 — 4	14	1¾ — 2	22
4 — 5	16	2 — 2½	24
5 — 6	18	2½ — 3	28
6 — 7	20	3 — 3½	33
7 — 8	22	3½ — 4	38
8 — 9	24	4 — 4½	43
9 — 10	26	4½ — 5	48
10 — 12	29	5 — 5½	53
12 — 14	32	5½ — 6	58
14 — 16	36	6 — 7	65

SAFETY WITH PESTICIDES

By HAROLD E. HELDRETH

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IT is now generally recognized that insect control is essential to profitable agriculture. There are hundreds of thousands of species of insects and several thousand of them are injurious to man, plants and other animals. In the war against insects, man has developed many new weapons in the form of pesticides. Some of these are hazardous to man as well as insects. However, there is no pesticide which cannot be used with safety when properly handled.

Among the hazards involved in the use of agricultural chemicals and pesticides are: The excessive exposure of workers who manufacture, formulate, or apply materials; accidental exposure of children; and the exposure of the general public in the event that residues on food should ever be allowed to approach the toxic level.

Much has been written about the toxicity

of pesticides and the hazards, real and imaginary, that may be associated with their use. However, entomologists and toxicologists seem to be in general agreement that where proper precautionary measures are observed, no pesticide in use today is so toxic as to make its safe use impractical. This problem is not a new one. But, with a greatly expanded use of pesticides, it has assumed greater significance.

In spite of the volumes of educational material telling how chemicals can be safely handled (warning labels and literature distributed by chemical manufacturers and packagers, and federal, state and local agencies); in spite of regulations by State Bureaus of Chemistry and State Division of Industrial Safety, some tragic accidents happen each year.

Before attempting to enumerate and