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THE GREATEST NAME IN RUBBER

tery how any of the trees survived.

The attempted beautification project probably cost at least several thousand dollars. If the trees had been properly transplanted and given proper care until they became established, they would have been worth every cent they cost. In time they would have provided magnificent adornment for the golf course. But as it was, a large part of the expenditure was wasted.

This instance is not mentioned in any spirit of criticism; it is mentioned simply to bring out the point that in many cases golf course officials pay less careful attention to their trees than they do to greens and fairways. However, inasmuch as I am deeply interested in trees, it may not be amiss to mention briefly some fundamental points which, if followed, may help to eliminate costly mistakes made in tree planting.

Before any tree planting program is launched, it is usually necessary to make a detailed survey of the golf course, paying particular attention to the types of soil encountered and the degree of moisture in the ground. Some species of trees thrive best in a moderately moist sandy loam—if they were planted in a very rich, wet soil they would probably perish. The opposite of this is, of course, likewise true.

Attention should be given to the proper spacing of the trees. In altogether too many cases trees are planted too close together. The result is that their tops are prevented from developing normally—they become mis-shapen and sometimes the health of the tree is undermined. No trees, even the smaller species, should be planted closer than 35 feet apart; elms should be planted from 50 to 60 feet apart. In all cases, they should be planted so that when the tree becomes mature the branches can have a normal spread without touching the branches of a neighbor tree.

In determining the kind of trees which should be planted, it is generally best to select trees which are native to that particular locality. Exotic species often do well when planted outside of their native environment. However, native trees can be planted with a greater degree of assurance that they will live and they always have the additional advantage of being representative of the locality.

It is next to impossible to give a list of trees which are most suitable for golf course planting in all parts of the country. There are a number of old favorites, however, which are popular in all parts of the United States except in the extreme south, the arid and mountainous regions of the west, and the warmer parts of California.

Names Favorite Trees

Of these old favorites, those which grow satisfactorily in almost all soil except extremely dry sandy soil or extremely wet soils, are: American elm, Norway maple, European or Oriental plane, sugar maple, red maple, pin oak, white oak, horse chestnut, white ash, and basswood. Scarlet oaks should have a well drained, gravelly soil, white oaks should have a well drained loam, and sweet gum, American linden and tulip trees should have a deep rich soil. For soils which are swampy, native willows and native poplars are usually best adapted. If the soil is not too wet, pin oaks often do quite well.

Numerous splendid species have not been mentioned in the above list. No tap-rooted trees are included, for instance, simply because they usually are hard to transplant with good results. Birches are not mentioned because they cannot resist the attack of bronze birch borers. However, if a certain tree is thriving in a certain locality and it has desirable characteristics, it can of course be used. But in case of doubt, it is always well to consult either a tree expert or the state or national agricultural department.

There is often a temptation because they can be obtained cheaply to use trees which have sprung up in the open fields or in the brush. In many cases, however, they often prove to be very expensive trees. Usually it is difficult to dig them up economically and gather them together for transporting to the point desired. They also have another drawback — their roots usually roam far and wide, and it is often extremely difficult to obtain enough of the root system to sustain the tree after it has been transplanted.

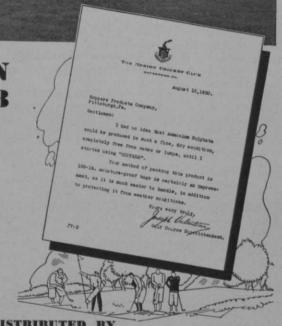
Nursery grown trees, on the other hand, usually have a quite compact and fibrous root system, due to the fact that they ordinarily are root pruned and replanted several times at various stages of their growth. Moreover, the soil in which they are grown is usually well cultivated and the growth of many fine root hairs encouraged. Because of their better root systems, nursery grown trees usually have a good chance to live when transplanted, even though much of the soil around their root fibers is lost while the trees are in transit.

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Regardless of whe her trees are taken from the nursery or from the brush, great care should be taken in digging them up. It is safe to say that more transplanted trees die because they have been improperly dug than from any other cause. When they are simply half dug or torn from the ground, the trees are not given a fighting chance to survive. It is essential that as many of the root fibers as possible be kept intact and uninjured.

Care in Transplanting

When a sapling about three inches in diameter is dug up, it is usually necessary to spade in a circle about 18 inches from the trunk and then to carefully work under the root system until it is free. If possible, much of the earth around the roots should be retained, but even when this cannot be done, the proper method of digging assures an adequate root system, and when the tree is properly transplanted the numerous root fibers aid the tree immensely in its struggle to become established.

After the trees are dug, it is imperative that their roots be protected from drying out. If they are exposed even for a few minutes on a hot, windy day, they will suffer greatly. When the trees are shipped from a nursery in large lots, they should be heeled singly in trenches immediately upon receipt. They should be taken from this temporary home as needed and while they are being transplanted the same care as before should be taken to prevent the roots from drying out. Too much emphasis cannot be placed on this point-innumerable trees are killed every year because their roots are dried out and killed through carelessness.

The hole for the tree should be wider than the roots and 18 inches or more deep so that the roots will have ample room to be spread out naturally. If the soil is heavy and soggy, provision should be made so that it will not fill with water and drown the roots. In some cases it is necessary to run drain tile from the bottom of the hole to a suitable drainage point. this is not practical, good results often can be obtained by blasting out the hole instead of digging it. After the hole is prepared it should be filled with a mixture of three-fourths top soil and one-fourth wellrotted manure up to where the bottom roots will come.

Before the tree is transplanted, all broken or injured roots should be cut off smoothly with a sharp knife. The tree should then be set in the hole and raised or lowered enough so that when the planting is completed it will be a trifle lower than its natural depth before transplanting—in no case, however, should it be more than two inches deeper than it was originally.

When the tree is set in the hole, earth should be worked under the crown and firmly packed down. As more earth is added, the tree should be rocked so that the soil will settle firmly around the roots, leaving no air pockets. When the hole is three-fourths filled with earth. should be poured in up to the top. When the water settles the fill-in can be completed. The top-soil should be left loose to prevent rapid evaporation of the water. In no case should the earth be mounded up around the trunk.

In every tree there is a definite balance between the top and the root system. If this balance be disturbed by the loss of part of the root system, it is essential that the balance be restored through proper pruning.

This work should never be done by anyone who has not had proper training and experience. If the work is done improperly the tree can be greatly injured. Inasmuch as almost every tree presents different problems, it is extremely difficult to lay down any general rules which fit all cases. However, there are a few points which should always be remembered. When it is necessary to remove limbs, they should be cut off flush with the trunk in order to permit rapid healing. If any projecting stubs are left, they often rot back quickly and endanger the life of the entire tree. All wounds should be covered with a protective dressing which keeps out the air and moisture, wards off insects, and prevents bacterial and fungous diseases. The leader or central stem of the tree should be retained as well as branches necessary for forming a well balanced, symmetrical crown.

Stake to Avoid Root Injury

After the trees are planted they should be staked. If this is not done they are very likely to sway back and forth in the wind and the root systems will be disturbed and seriously injured; likewise, prevailing winds often cause the trees to grow in a slanting position unless they are staked to hold them upright. The tree should be fastened to the stake in such a manner that the bark will not be injured.

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Guide-Posts for the Newcomer in Course Maintenance Field

By G. A. FARLEY

This is from Mrs. Farley's forthcoming book on greenkeeping, a work in which she has enlisted the co-operation of many of the prominent and practical authorities. As a versatile and competent business woman, and one who has been in close contact with greenkeeping due to the Cleveland correspondence course and the National Association of Greenkeepers, Mrs. Farley has figured actively in course maintenance progress.

E NTERING the greenkeeping profession are many young men who have been gathering practical experience in general golf course maintenance under the supervision of expert greenkeepers.

It has been said, and truly, that green-keeping cannot be taught. The statement may be qualified to the extent of adding "except in the school of practical golf course work." There are agricultural colleges which have established as a part of their curriculum special courses in green-keeping theory and practice, and the progress of such departments is notably good. Perhaps their greatest value to the future of green-keeping in America is the fact that such activities have created in the minds of students an interest in green-keeping never before felt.

The fact remains that regardless of previous education and training, from three to five year's experience on a golf course is necessary to prepare a greenkeeper for the responsibility of taking charge of a golf course under construction or in play.

Agricultural college students are encouraging prospects, and those attracted to golf course maintenance spend the summer months as greensmen, mechanics and general helpers, thus supplementing their school work with practical experience under the direction of the greenkeeper in charge. Fresh from the classroom, and filled with interest in all things that grow, the young agricultural college man fre-

quently finds the problem of golf course management sufficiently facinating to make of it his life work.

Following each year of school with a summer of practical course maintenance should equip the average student with qualifications as an assistant greenkeeper, from which point he is only limited by his natural ability and continued study as to what he makes of himself as a greenkeeper.

Young men who have had no opportunity to attend college, but whom circumstances have placed as helpers on a golf course, often develop into exceptionally fine greenkeepers through their interest and concentration under the instruction of practical greenkeepers.

Develope Study Habit

The expert greenkeeper finds it to his benefit to note and instruct the men under him who show evidence of being good greenkeeping "timber." The habit of study in which the college man has been trained can be developed by any young man of average education who has the ambition to get ahead in the greenkeeping field.

The most important angle to impress upon the mind of the man who has decided upon greenkeeping as the field of his endeavor is the paramount necessity of getting the work done. For much of the time the greenkeeper must stand upon his own feet. He must depend upon his own judgment. He must so handle his helpers on the course that the best they can do for him is done with pride and satisfaction in the job at hand. Getting things done in the management of any business demands executive ability. Greenkeeping is far from being any exception to the rule.

The greenkeeper may be a better mechanic than he is a carpenter, and a better theorist than he is either. He may know most of the fine points of raising turf and keeping good greens under trying conditions. However, if his executive ability is not greater than any single accomplishment he possesses, he will not be a success as a greenkeeper.

He may know how to handle any part of his work, but unless his perspective of the amount to be done is clear, and his assignments of labor to his crew well-planned in advance, he will very shortly find himself in a tangle from which no amount of turf-growing knowledge will extricate him. The old adage "If you would like a thing well done, do it yourself," if followed by the greenkeeper on the average eighteen-hole course, would soon prove him unfit for the job.

Most successful greenkeepers, which is only another way of describing those who receive the greatest co-operation from their club officials, are ever on the alert to discover or adopt efficient methods to reduce their cost of labor. Not only does this apply to the amount of time consumed in what is termed hand labor, but in these days of machine-equipped gelf courses the greenkeeper must keep a constant check upon the working condition of the machinery in use, that as little time as possible may be lost in making repairs during the playing season.

Instruct the Greensmen

With further reference to the subject of labor on the course, it is safe to say that

the greenkeeper will find some of his time well spent in properly instructing his greensmen. These men in the early stages of their work can do an inestimable amount of damage unless carefully watched until they understand in all its phases what is expected of them. On most courses the greenkeeper has an assistant who has had sufficient experience to oversee the instruction of new men, and to relieve the greenkeeper of other time-consuming details of the general work.

There is no hard and fast rule for laying out the labor schedule on any one course which will be found adequate and workable on another. Each greenkeeper must determine for himself, with the assistance of the club official in charge, and with close attention to the amount of money appropriated by the club for the maintenance of the course, how many men he may allow himself in his regular crew. Eighteen-hole courses employ anywhere from seven to 25 men besides the head greenkeeper, this great variation being due to conditions equally variable. The demands of playing members on some courses are far in advance of those found among a membership unable or unwilling to finance better turf maintenance.



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SCHEDULE OF TOURNAMENTS

Tournament	Date	Prize
San Francisco	. Dec. 4-5-6-7	\$ 7,500
Catalina	Dec. 11-14	7,500
Pasadena	. Dec. 19-21	4.000
Glendale	Dec. 27-28	2.500
Long Beach	. Jan. 2-3-4	3.500
Santa Monica	. Jan. 5-6	1,500
Los Angeles	. Jan. 9-10-11	10.000
Aqua Caliente	. Jan. 13-14-15-16	25.000

Horse Racing opens Christmas day

THE eyes of turfdom point to the new \$2,000,000 Agua Caliente Jockey Club where the annual Winter Meeting of 81 days opens on Christmas. Winter visitors to California will find the exotic air of these colorful racing days to their liking! The Meeting is featured by the \$140,000 Agua Caliente Handicap, classic of the turf, to be run on March 22, 1931.

CALIENTE

(Pronounced Ah-wah Cal-e-ente)

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Wherever a competent greenkeeper is in charge and poor playing conditions prevail, the solution of the problem is more often than not found in a too closely trimmed course maintenance appropriation. In many cases the amount of money allowed a greenkeeper to manage an 18 hole course is not much more than enough to maintain nine holes in fairly good shape. The way out cannot be taken by the greenkeeper alone, as like any other employee of the club, he is engaged to handle a specific job, and is expected to make a success of it.

The greenkeeper's immediate superior is usually the chairman of the green-committee for the club, although there are instances where some other official or executive employee is responsible to the membership for the playing conditions on the

The chairman of the green-committee is almost without exception, a man of accomplishment in his own field of endeavor, one who has been successful in either business of professional life, and who has taken up golf as a means of recreation. He is usually of mature judgment and popular among club members. Occasionally he has had some experience in turf maintenance, and in some cases he has made a hobby of it over a long period of time. The "long-term" chairman is one who serves his club in that capacity from year to year, and is conversant with each step that has been taken on the course since his term began. This describes the ideal chairman, and fortunate indeed is the greenkeeper who works under his direc-

To go to the other extreme, there is the chairman who serves one or two years, finds the supervision too confining or not of particular interest, and lo, another man is appointed to step into his shoes. Given a greenkeeper of high calibre, many such otherwise short-term chairmen, instead of following their natural inclination to give up what seems to be a thankless job, become through enjoyable association with an expert and intelligent man in charge of the course, just what every golf club needs,-a long-term chairman of the green.

Chairman Is Greenkeeper's Ally

Whatever may be the knowledge or lack of knowledge on the part of the chairman in matters of turf maintenance, he is without doubt the best friend the good greenkeeper can boast of. Not only that, but he is the best and most understanding medium through which the young greenkeeper may develop to his best effort and accomplishment. If the chairman has served his club for several years, his advice to the greenkeeper is invaluable, and his friendly understanding is as a rule only limited by the amount of interest the greenkeeper shows in his job. Through his chairman, be he "turf-nut" or utterly devoid of turf knowledge, the greenkeeper absorbs daily tips relating to the management of the course. As spokesman for his greenkeeper, he presents to the board of directors of the club all data relating to the cost of maintenance and possible re-construction and improvement on the course, with figures upon which are based the appropriations made from year to year, which amounts determine to a large extent the quality of the playing surfaces for which the greenkeeper is held responsible.

Some chairmen of green-committees are retired from business, and spend a great deal of time on the course, while others who are still active beyond the realms of the club have little time to devote to the greenkeeper's problems. Regardless of the time spent on the course by the chairman, one rule of conduct should be observed by the greenkeeper at all times. During a round of golf, he should not be disturbed, except in extreme emergency. Whatever the extent of his support and courtesy to the greenkeeper, his game of golf should be as inviolate to interruption as that of any other playing member. Regular appointments should be made between the busy chairman of a green-committee and the greenkeeper, at which time the greenkeeper should have reports in order covering any matter which may be up for discussion.

Make Pro a Partner

The club professional is in a position to materially assist the greenkeeper, particularly in times of stress, during tournament seasons, and whenever the course is in hard play. Imperfect work of greensmen comes to his attention at once, and his close touch with playing members gives him an opportunity to explain away any unusual circumstances which are the result of course maintenance work and which may for a time disturb the even tenor of play. A partnership of mutual respect and understanding between the professional and the greenkeeper is invaluable to both. A true partnership is one in which neither gains through what the other loses, and a relationship between

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them which can be described in such terms is one in which the best interests of the club are promoted and maintained.

The necessity for executive ability on the part of the greenkeeper cannot be over-emphasized. With this qualification, backed by the friendly co-operation of his chairman and the club professional, the greenkeeper need add but one other requisite in making a success of his job, the desire to be found equal to what is required of him.

Weekly reports showing a distribution of labor over each section of the course are required by the chairman of the green-committee, and for the most part these forms or blanks are individual in make-up with each club. Attempts have been made to standardize such report forms, but as they represent an integral part of the accounting system covering the business of the club as a whole, the most that can be said at the present time is that green-keepers' reports resemble each other to a certain extent, varying to accord to the demands of the particular system of accounting favored by the individual club.

Checking up weekly reports of the cost of maintenance enables the green-committee chairman and the greenkeeper to keep within the season's appropriation. From a summarization of the reports at the end of the year, and an estimate of the cost of any changes or improvements contemplated, a comprehensive program of operations for the following year may be intelligently laid out and presented by the chairman for the consideration of the club directors.

Make Course a Show-place

The days are already gone when a greenkeeper, however experienced, can do just a full day's work and let the rest of the world go by. Like every other profession, new days bring new ways in keeping a

golf course. The members at one course play over others in the neighborhood, and sometimes far afield. They expect on the home course conditions that equal those they find elsewhere. The chairman and members of a green-committee in charge of a particularly well-groomed golf course are justly proud of what they can show visiting golfers in the way of perfect playing fairways and greens. This natural pride has two beneficial effects upon greenkeepers as a whole. It creates a desire upon the part of the greenkeeper of a less perfect course to match the excellence of the fine course to the best of his ability: the approval of his chairman and its hearty expression to visitors is the best possible incentive to the man in charge of a notably good course to further perfect his work.

The golf club is the second home of members, who quickly note evidences of haphazard and untidy methods around the clubhouse grounds and over the course. The greenkeeper should pay particular attention to the appearance of all grounds surrounding his playing areas, with an eye to anything unsightly which may obtrude upon the vision of playing members. Rollers, mowers, carts, rakes and other equipment should be in evidence only when in use, and kept under cover at all other times. Trash should be taken care of promptly, especially where it is apt to gather, on and around the teeing grounds.

Falling tree limbs, whether or not in the line of play, are a source of danger to both players and workers on the course, as well as objectionable to the sight, and should be removed without delay. Trees should be regularly inspected and dying or broken limbs cut before they fall.

Painting and refurnishing shelter houses, benches, flag poles and other small equipment should be done during slack times

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