

By the perforation method it is possible over a period of years to bring about an improvement in the soil around large trees to a considerable depth and with a minimum of disturbance either to the roots or to the lawn.

### Food and Air Introduced

Present practice is to form numerous holes from within a safe distance of the trunk throughout the entire spread of the roots. These holes are 10 to 18 ins. deep or even deeper. Chemical fertilizers alone may be used and the holes refilled with the loosened soil. Usually the hole is filled with a mixture of chemical fertilizer and some humus forming material to within a few inches of the top. The hole is then filled to the top with soil to re-establish an immediate growing medium for the grass roots. In either case we have introduced fertilizers at a depth of several inches and at the same time formed a partial air pocket and channel which for some time will offer less resistance to the entrance of air than was the case before the soil was loosened up.

One other point may be made in connection with this method. Soil chemists are fairly well agreed that phosphorus and, to a lesser extent, potash, are fixed in the soil within a short distance of the point

where they are applied. If you feel that trees need high phosphorus fertilizers, then it is certainly more advisable to place them deep in the soil where the roots can actually come in contact with the phosphorus than to scatter them over the surface where the phosphorus may never go below the shallowest grass roots.

Extremes of temperature, both winter and summer, can be controlled to a certain extent. Fortunately, a heavy sod is a fairly good protection to the tree roots. Nevertheless, these organs do not possess great resistance to low temperatures and as a result trees do often die of winter injury to the roots. Soil or litter should never be removed from the base of the trunk or large roots just before cold weather. In exposed locations or where winter injury is feared, a mulch of leaves or other material may be used over winter. It should be removed in spring to allow the tissues to regain their resistance by exposure to the air during summer and fall. For trees which as a species have persistently shallow roots, ground cover planting will give the necessary protection. Such covers, made of *Vinca minor* or *Pachysandra terminalis*, being evergreen, are less objectionable than ordinary mulches and are quite permanent.

## The Greenkeeper's Schedule

By C. A. TREGILLUS

Supt., Mill Road Farm Golf Course

**WE** ARE deluged with figures indicating the total investment in golf real estate, construction in buildings and layouts, and a little quiet pondering on the relationship of the greenkeeper to all this might well occupy some of his more serious moments. Not with the idea of the glorification of his own importance, but to a fuller realization of his responsibilities and liabilities.

While this office is commonly known as "Greenkeeper" in reality the scope of the work has widened considerably and we find many other duties attached to this position. What we actually find is that in addition to the maintenance of the course, he is "clerk of works," having within his care much of the belongings of the club.

The development in recent years in the golf club organization shows a tendency towards managerial administration. It is not within the purpose of this talk to discuss the pros and cons of this, but I will remark in passing that where the club is run by a general manager, who is responsible to the directorate for all the maintenance, service, and development, the greenkeeper generally becomes the general superintendent in charge of the outside main-

tenance of buildings, grounds, etc. At times when the administrative offices may be moved to the city or elsewhere, the greenkeeper automatically assumes charge at the club property. At such times, he assumes authority over the physical plant, though not over the service staff where the clubhouse is kept open for winter parties. That, of course, usually comes within the steward's office.

### Director and Buyer

The agencies by which the greenkeeper discharges his trust falls into two general classes, labor and materials. In managing the former, he must exercise his best talent as director of operations and in the acquiring of the second, he must possess all the shrewdness and keenness of a first-class purchasing agent. To faithfully combine these is not an easy task, but in these days of keen competition, reduced budgets, etc., the success of the club relies very much upon these shining virtues.

The hiring of labor and its management is the oldest duty in this field of calling, in fact the whole business of greenkeeping in the beginning was a matter of labor supplemented with the simplest of tools.

The first observation is that no two men will assume authority over others in the same way. While two men may achieve the same results, it is certain they will go about it by entirely different routes. Temperament and personality are things we cannot closely standardize and for that reason every foreman and officer has to work out for himself his own course of action, his own method of approach. The same thing applies to the workers, but one must look at it in a more collective manner as we have to deal with racial temperament as well as individual temperament.

The closer one's contact to the individual workers, of course, the more helpful it is to give attention to this relationship. While it is idle to say many words on discipline, since any man who has had to direct the labor of others learns the necessity of maintaining a distinct authority over the workers, still it is well to remember that we may increase individual efficiency, which means general efficiency, by allowing a worker some latitude in how he goes about his job. If he can achieve the result we want, in a way all his own, with no more cost of time and materials than if he went about it our way, we are quite satisfied. It is the result that counts and the cost of achievement. This fact is particularly noticeable in this country where national habits of workers are so

divergent. A simple illustration is the manner in which many German mechanics use a hacksaw, drawing it towards them on the working stroke as against the usual American practice of pushing it away.

### Buying and Selling Labor

I sometimes look at the labor relationship as that of buyer and seller. I like to feel a regard towards the other fellow, whether he is selling me a carlot of sand or the labor of his hands to put it into the bunkers.

It is a good idea, I believe, to hire the "all year" men by the month; they are closer to the organization and one feels more reliance towards them. The seasonal labor is a different proposition and must be handled accordingly. It is turned away in the fall with the hope that the same phases will show up in the spring. In some instances, the men have winter work to go to. Those who stay at home we try to help out by dividing up any work that may come along during the winter months. Last winter we made changes in the water system and alternated the men week about. It gave them a little help. This year, owing to the very mild fall, we kept the gang together on alterations until December. We do work on our trees during the winter and that gives some employment. My experience is that it pays to

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**A. N. PECKHAM, Kingston, Rhode Island**

keep a skeleton labor gang together where any appreciable number are employed during the golfing season.

I have seen superintendents who seem to be on the run from morning to night, and others who generally have time to sit down and chat the afternoon away; and strange as it may seem, the latter are invariably the efficient superintendents. It is a mistake, I think, to become immersed in a set of "chores" that become an all-day routine. One should be free to turn in any direction for any emergency without the worry of something being left undone.

Two things I would reserve, however; one is time-keeping and the other is cup-changing. I like to see the greenkeeper keeping the time as that brings him in closer touch with the individual workers. To change the cups or to accompany the man doing this work should be his ritual of office. In this instance, I liken him to the doctor making his daily round to take his patients' pulse and temperature. He is sure then to be familiar with the condition of his greens, both above and below ground.

### Greenkeeper's Buying

The authority to purchase supplies and equipment is a privilege every greenkeeper would like to have but few possess. The

usual procedure of lining up the green-committee and the lobbying for new implements with considerable apprehension as to whether they are forthcoming causes no little worry in the minds of many superintendents. It rests with the greenkeeper to bring to the committee's realization that his requirements are conservative, and that he is just as interested in and sensitive to the budget limitations as any of the membership. I think the day of excessive sales pressure on credulous greenkeepers is over. These are enlightened times.

Purchases in quantity can sometimes be made to the advantage of the club and where storage facilities are available is good economy. Buying is business that calls for constant vigilance whatever line of goods are involved, and quantities to carry on hand and when to be in the market are matters that alter with the individual circumstances. I endeavor to keep in touch with prices at all times and continually explore the channels of trade to uncover new sources of supply. The golf industry is well supplied with business houses catering to its requirements and they perform a very valuable service, but the wide-awake greenkeeper should nevertheless endeavor to keep himself informed that prices are properly in line, and see to it that he is getting a dollars worth of

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actual value for every dollar of club's money he spends.

I am not in favor of carrying a large inventory of spare parts for the mechanical equipment. I have seen stores carried by some clubs that would do credit to a supply house, but I cannot see where this is an economical practice. I would much rather see some of the investment in an extra truck, tractor, and cutting units.

### Record Keeping Vital

There is one more point I wish to mention, and that is the keeping of records. These are days of reduced budgets so we have to be more careful than ever before. I firmly believe the greenkeeper should keep all the books that his time will allow him to without becoming a burden. Our own records are very simple. We do not break down our golf course labor, except to separate the mechanic's time. We keep the cost of labor and materials and a diary showing weather conditions, appearance of disease, pests, etc., and any other work done out of the ordinary routine. Each month end we prepare a statement showing the money spent during that month and the preceding months of the calendar year, and compared with the same period the preceding year. It is done this way: In the left-hand column is the list of the accounts we keep, such as labor, seed, fertilizer, chemicals, etc. In the next column is set down the January expenditure, in the next February, etc. As each month's statement is prepared, we add up the total spent to date in the calendar year and beside it to the right the amount spent for the same period last year. There is a comparison of the gross expenditures in each account. Each column is added up and the amount for the month shown. Below that is entered the amount for the same month the previous year. Any unusual expenditures are explained in marginal notes. This statement is a good deal of work to prepare, but it gives a wonderfully clear picture that anyone can understand without close study.

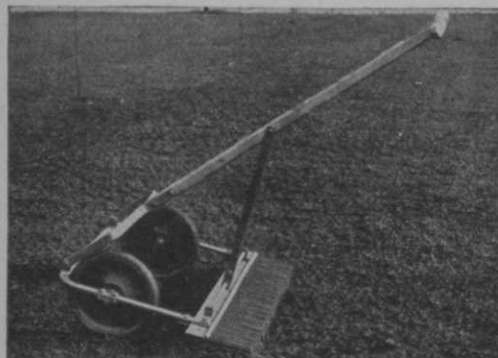
### Our Job

By L. J. FESER

Woodhill C. C., Wayzata, Minn.

**M**R. FESER advised confident, clear thinking in economics as part of the greenkeeper's job, saying the work today not only called for solving problem of budget allotment but thinking about how money for club could be obtained.

He refused to be submerged in too-popular gloom of business thinking today and pointed out that losses of the war in men, money and physique were much more serious than today's troubles. He aptly reminded fellows who were in the war about



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