enough. They have for the most part considered practical experience all that is necessary. That time is all gone by, as greenkeeping is now recognized as a science, not a hit-or-miss job that any ordinary man can pick up in a short time. No matter how long you have been a greenkeeper, there is always something for you to learn.

Many persons all over the country have remarked upon the wonderful condition of the greens at the Merion Cricket Club, but the methods I follow may not be suitable for greenkeepers in other localities to use. Therefore I am not going into details as to solving difficulties which always appear during the summer months, nor what methods to use in keeping putting greens in velvety condition. You as individual greenkeepers should know how this is done,—if not you should not be called greenkeepers. We all have different methods in handling labor, how and how often to apply fertilizers, top dressing, etc., and by studying cause and effect you can work out methods that will be sure to get results.

Let This Magazine Speak for You

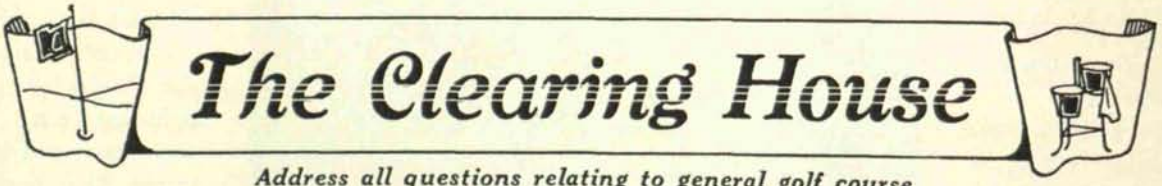
We have this wonderful organization, the National Association of Greenkeepers of America, and too much praise cannot be given those who labored so faithfully to make a dream of years come true. Their dreams were ours, and now they are a reality in the form of this association. This organization and magazine will put the greenkeeper in the place where he rightfully belongs, at the top of his art. Let everyone fall into line and let this magazine speak for you, for what you know and for what you deserve.

In conclusion let me urge you to keep on striving to make your course in every way better. Make your club members feel proud to bring their guests out to play, so that they will approach the chairman of the Green committee and say, "Our greenkeeper certainly knows his profession."

Use More Bent

Improve the bunkers, so that the outlook will be pleasing to everyone's eyes. Have first class turf all over, and especially bent grass for the putting greens, approaches, fairways and tees. Let the other greenkeepers come to see how well you are keeping your course. By setting such an example, any greenkeeper less well qualified than yourself, will go away determined to put forth his best efforts to improve his own course.

If you happen to have a first class course, keep it so. If not, wake up and make it so. Don't go to sleep on your job. Stay awake at least in the daytime, that no important duty be left undone. Success comes to him who goes to meet it.



Address all questions relating to general golf course maintenance to this department. Every question answered free of charge by a committee of experts.

Mowing Greens

The mowing and sweeping or dressing up of how many putting greens averaging 5500 square feet do you find is the average days work of the man mowing greens, and do most clubs favor early mowing or later mowing with more men?

Saratoga, New York.

Assuming a man has to care for slopes, traps, tees, greens, weeding and mowing, one man will have his work cut out in caring for three greens averaging 5,500 square feet. As to the mowing work, it is always better to have this done as early as possible, so that play is not disturbed. If done late in the day, the men spend about 75% of their time waiting for a chance to cut a green.

Top Dressing

My greens have a clay subsoil, the top soil is black muck about 8 to 12 inches deep. This soil out in the open is very light and the kind that blows away. It does not seem to take water very well and our greens get hard in the summer, despite the fact that we do all of our watering at night. What top dressing would you use to help these greens hold moisture? These are all Metropolitan Bent.

Lansing, Michigan

If your greens are not tile drained, they evidently should be. Top dressings of 50% sharp sand, 25% well rotted manure and 25% loam, are recommended. Also two dressings of clean granulated charcoal during the season, one in spring and another in the fall, at the rate of 150 pounds per average sized green. Late in the fall, when the course is closed, a light application of sharp sand will be beneficial.

Fertilizing Old Trees

I would thank you if you would get some information for me in the feeding of old trees about 100 years old.

Nashville, Tennessee

In fertilizing an old tree the same practices should be followed as in fertilizing a young one. It is of prime importance to get the soil under the tree in good physical condition. This can only be done by cultivating with

spading forks, rakes or in some cases even plows can be used. The best method to follow is to mix thoroughly with the soil fertilizer of organic origin. To supply nitrogen nothing surpasses dried blood, to supply phosphorus nothing surpasses bone meal, to supply potash wood ashes and muriate of potash can be used, although it is not essential because the supply in the ground and the application of manure ordinarily supplies sufficient potash for the tree to grow vigorously and there is no particular advantage gained by putting these different materials at different depths in the soil. Place them as near as possible to the feeding roots and thoroughly mix them with the soil.

For a tree 100 years old 2 to 3 yards of manure, 40 to 60 pounds of dried blood together with 100 to 150 pounds of bone meal can be used most effectively.

After the operation is completed sod or reseed ground as desired.

Brown-Patch

Late last season several of our greens had a bad attack of large Brown-Patch. We gave a rather late treatment of "Semesan," but it seems that it was too late in the growing season for the greens to show much recovery. These greens are all high and well drained and are two years old. What treatment would you give this spring? *Lansing, Michigan*

Greens treated late in the fall which did not respond to the Semesan treatment, should be top dressed the following spring, followed by an application of sulphate of ammonia or Ammo-Phos, at the rate of two pounds of fertilizer in fifty gallons of water to each 1000 square feet of green. This application should be repeated in two weeks or a little more.

Bi-Chloride of Mercury (corrosive sublimate) applied for the eradication of earthworms, also has a tendency to prevent Brown-Patch.

Fertilizing Young Trees

In transplanting young trees is it necessary to mix some fertilizer with the soil? *Nashville, Tennessee*

In placing soil for the reception of newly planted trees it is well to mix either compost or well rotted manure in the soil.

The tree is planted the size of the hole depending almost entirely upon size of the root system which is to receive it. In planting the average size nursery tree, that is one about two inches in diameter and twelve to eighteen feet tall the hole should be dug about 4 by 4 by 3. The bottom 2 feet can be filled with this rich mixture of top soil together with manure or compost and the tree put in place and similar soil placed on top. It is not particularly advantageous to use quick available fertilizer such as sulphate of ammonia, nitrate of soda, because ordinarily these will get away before the tree is able to absorb them from the soil.

As time goes on, THE NATIONAL GREENKEEPER will publish some interesting figures, with detailed information showing why this variance in golf maintenance costs exists.

Pruning Transplanted Trees

In transplanting young trees is it necessary to prune the tops of the trees to make up for the roots that are cut when lifting? *Nashville, Tennessee.*

In transplanting young trees it is necessary to prune the tops to make up for the roots that are cut when the trees are lifted. In pruning the tops great care should be taken so that all the main and leading branches are preserved in their entirety.

Following, one-half the top can be removed without damaging the branches which are the so-called leaders. Pick out the branches which are the least desirable and can be the best spared without material damage to the shape or beauty.

Cut its branches flush with the parent stem from which they arise. In this way no dead or diseased broken stubs are left, but clean wounds which will heal quite rapidly in a comparatively short time.

Maintenance Costs

Have you any records of maintenance costs, men employed, etc. for 18-hole golf courses, exclusive of club house costs? *Saratoga, New York*

There is no method of cost accounting that is standardized to any extent among golf clubs throughout the country. The cost of maintaining an eighteen-hole course varies so greatly that it is impossible to set any sum which could possibly govern the expenditures of eighteen-hole courses in general. Some courses spend $15,000 per year and others $25,000. The demands of the members must be satisfied, and these demands vary in cost of maintenance with each individual membership. Some experts claim that eighteen holes should be maintained at about $1000 per hole, but the club located well in town, having to pay for city water, for labor at a city wage scale, and possibly even suitable top soil for the putting greens, often shows a higher cost per hole than this.

The number of laborers per eighteen holes also varies; some greenkeepers find fourteen to fifteen men necessary during the playing season, and others manage with ten to twelve.

CONVENTION PHOTOGRAPHS

Through special arrangement with Kaufman & Fabry Co., commercial photographers of Chicago, photographs of the annual convention and the members of the newly elected Executive committee for 1927 as reproduced in this issue may be purchased by readers of the GREENKEEPER.

A large 12x20 picture of the meeting is priced at $1.50, and size 8x10 of the Executive committee at 75c.

Please send orders accompanied by either money order or check to Association headquarters, 407 Caxton Building, Cleveland.