

tion to fertilizer, may be advisable. In the future, however, more emphasis will be placed upon fertilization than re-seeding.

If the turf is thin fertilizer is almost surely needed, and unless steps are taken to obtain dense turf weeds will become prevalent. Moss so commonly considered an indication of sour soil is more correctly an indication of impoverished soil. Profuse clover growth may be due to a lack of nitrogen. The nodules on the clover roots contain bacteria capable of drawing upon the inexhaustible supply of atmospheric nitrogen and converting it into forms the clover can utilize. Thus the clover thrives while the turf grasses languish for want of nitrogen.

Based on the relative amounts of plant food removed by the turf a fertilizer high in nitrogen and potash would seem best for fairways. But most soils contain at least fifteen times more potash than nitrogen and it is only the sandy soils, which are low in potash, that are apt to need additional potash. A fertilizer relatively high in nitrogen, moderate to low in phosphoric acid and with little or no potash ordinarily gives best results.

In the past manure was extensively used on fairways, but the present tendency is to substitute other materials partly as a result of increased demand for the limited supply, and a more intelligent use of other materials. With manure there is always danger of introducing obnoxious weeds, play is interfered with late in the fall and early spring until the refuse is removed. The supposed advantages of added humus are overestimated because it is impossible to incorporate the manure with the soil.

A ten ton application of manure is considered light, yet at least 80 pounds nitrogen and 50 pounds phosphoric acid are applied to each acre. Failure to obtain satisfactory results with substituted materials are often due to the insignificant amounts of plant food applied. Thus 500 pounds bone meal add only about 12 pounds nitrogen to the soil. Until reasonable applications are made disappointments will continue. Naturally the amount of fertilizer to apply must depend upon the condition of the turf and soil, and the material used. If the turf is poor and thin the soil is usually poor also, and more fertilizer must be applied to encourage heavier growth. A thousand to fifteen hundred pounds per acre of the better organic materials is not unreasonable under such conditions. If it is simply a case of maintenance smaller applications suffice.

When sulphate of ammonia or Ammo-phos are used applications should be light and at frequent intervals. The reasons for this have been stated elsewhere.

Fertilizers are best applied in the early spring or fall or just before winter sets in. Mid-summer applications are rarely effective, due to extended periods of dry weather. When applied in the early fall marked benefits are frequently obtained before winter sets in. Late fall applications should be confined to organic materials

and only where there is no danger of bad surface washes.

Fertilization of New Fairway Seedings

The main advantages accruing from fertilization of new fairway seedings result from a quicker growth and production of dense uniform turf. With fall seedings it is possible to obtain a heavy turf before growth ceases and such turf is better able to withstand severe winter weather. Ordinarily nitrogen and phosphoric acid are most important, but some potash may also be needed on sands. The cost of fertilizing an 18-hole course should not exceed \$2000 to \$3000, and is a small item of expense. Once obtained it is difficult and expensive to improve poor turf.

The first few weeks following seeding are most critical. The small grass seed contains only enough plant food to initiate growth and when growth commences the young seedling must obtain food at once. Its ability to forage for food is curtailed by a limited root system. Unless the soil is abundantly supplied with plant food many weak seedlings succumb and a thin turf results. This is the reason why even supposedly fertile soils so often respond to fertilizer applications prior to seeding.

Phosphoric acid benefits new seedings mainly by stimulating rapid root development, thus enabling the weaker plants to compete with the strong seedlings. This insures a uniform turf. Nitrogen hastens top growth which is also preliminary to extensive root development.

Acid phosphate is a better source of phosphoric acid than bone meal, being more quickly available. When added to the soil the phosphoric acid is precipitated as finely divided insoluble phosphate. The extreme fine state of division permits rapid solution when the plant makes heavy demands. The acid phosphate is best applied prior to seeding and worked into the surface soil with a disc. Surface applications after seeding are not so effective because the phosphoric acid is precipitated at the surface and is slow to work down into the zone where root development takes place.

Nitrogen can be supplied from a number of different materials. If organic sources are used heavy applications can be made at the time of seeding with little danger of burning the seedling or loss from leaching. With the soluble materials lighter applications should be made at the time of seeding to guard against injury to the seedling and danger of loss by leaching. Later applications should be made as needed.

When mixed fertilizers are used mixtures high in nitrogen, medium to high phosphoric acid and low potash content should be selected. Ten tons of manure per acre is usually considered a very moderate application. At least 80-90 pounds nitrogen and 40 to 50 pounds phosphoric acid are added to each acre. Unless these amounts of plant food are approximated disappointment

(Continued on page 33)



John Morley

A Chat With Our President

I HAVE been told many times that I was the founder of our association. Yet this organization came from a more powerful source than is invested in any one man. And like a great river, it takes many streams and springs to carry it on. The outstanding figures in our association, working with every individual member have made it what it is.

WALTER C. REED, formerly of Pepper Pike Country Club, Cleveland, Ohio is now with one of the leading clubs in the Saint Louis district, the new Westwood Country Club.

JOHN GRAY, Essex Country Club, Ontario, Canada has putting greens entirely of velvet bent.

THERE are golf officials who seem to believe that a greenkeeper can have good putting greens, even if he takes everything from the soil and returns nothing.

DO not get into the habit of leaning on a prop for by so doing you only weaken it, and sometime it will let you down.

HIRAM GODWIN, Redford Country Club, Redford, Michigan has putting greens that were planted with creeping bent stolons five years ago, and are still in excellent putting condition.

ATTEND our next convention and strive to see that unselfish, honest and capable men are placed in the positions of responsibility in your organization. Then you should treat them as such and give them a fair opportunity to study and work out your problems for you. Trust them and then try to get the vision they must have to make their work effective. Be slow to criticize. Give as well as take; it makes for success and satisfaction every time.

THE Thanksgiving season is now upon us and the members of our association have every reason to be thankful. Our courses are on the average in better condition than one year ago. The financial condition of the clubs we represent is also more substantial. We have been drawn closer together than ever before as a profession. We will be able to proceed with the next season with more knowledge and understanding. While

we deplore the loss of one of our members by death, when we take into consideration the fact that out of so large a membership our death rate has been only one per cent we all should be thankful, for no other fraternity with the same amount of membership can produce such a record. This shows that greenkeeping is certainly a healthy vocation to follow.

W. J. ROCKEFELLER, Inverness Country Club, Toledo, Ohio and secretary of our association recently lost by death his estimable wife. Mr. Rockefeller has the warm sympathy of the members of our association.

THE greatest comfort in affliction is found in rendering service to others. Join the Death Benefit Fund.

WHERE you find a greenkeeper that is thoroughly acquainted with his vocation, and a professional that is a good instructor, both connected with the same club, you generally find them working together for the interest of the course like two peas in a pod.

JOHN RUSKIN says, "When men are rightfully occupied their amusements grow out of their work as the color petals out of a fruitful flower; when they are faithfully helpful and compassionate, all their emotions are steady, deep, perpetual and vivifying to the soil as the natural pulse to the body."

CHARLES JARMAN of Brookside Country Club, Canton, Ohio had two putting greens that were formerly planted with fescue and failed to produce a good putting surface. Charlie got busy—he burned out all the weeds with sulphate of ammonia, then shaved the putting greens with the mowers, gave them a top dressing, planted them with stolons, and these two putting greens are now coming along fine. He did not even disc the surface of the old greens.

FRANK W. CURRIER, St. Thomas Golf & Country Club, Union, Canada, says he does not believe in dope for his putting greens. I believe it would be better for all of us if we used less dope.

FELLOWSHIP, Brotherhood and Understanding, which are the chief blessings of a wholesome civilization, never were so widely accessible to man as they are today.

IT is well for a man to respect his vocation, whatever it is, to think himself bound to uphold it, and to claim for it the respect it deserves.

(Continued on page 30)

Let Us Help You, Greenkeeper

By BOBBY CRUICKSHANK, Professional
Progress Country Club, Purchase, N. Y.

WE—golf professional and greenkeeper—are both aiming to have our club members derive the greatest possible pleasure from their golf, so what shall we naturally do? Get together on the matter, of course. Two heads always have been better than one, and in this connection they surely always will be. One of the greatest pleasures of my present job is the friendship that exists between Captain David L. Rees, superintendent of our golf courses, and myself. We constantly talk things over and play an occasional round on the course together, and our co-operation does truly result in mutual goodwill and genuine benefit.

While in some sports the looker-on sees more of the game than the player himself, the fact remains that in the case of golf the player is in a better position to see and appraise the course than the one who does not play. As an instance, I can recall my having made a suggestion after my first round on my old course at Oklahoma City—which suggestion resulted in the complete transformation of one hole. The change it was universally acclaimed, was to the vast betterment of the hole, from the player's standpoint. And it is the player, after all, who pays the piper and ought therefore to be allowed to call the time!

Where the greenkeeper is not a golfer—and he, unfortunately, very often is not—it would seem to me essential that he co-operate with his professional. In preparation for tournaments, for example, the pro ought to be genuinely helpful in the matter of fixing the positions of the tee markers and in the placing of the cups. The professional may be able to say to the non-playing greenkeeper "Number five green is extraordinarily fast to-day" or again, "Number fourteen is unusually slow"—and the greenkeeper, with his technical skill in maintenance, may then proceed to remedy those temporary drawbacks to low scoring.

In co-operation, the pro, and the greenkeeper may, as another instance, decide that it would be an improvement to widen the "rough" area here, or to narrow it there. And the pro, might say, "I had a miserable



Bobby Cruickshank

slice from the tenth tee but found myself in a dandy lie. You could very reasonably punish us more there"—and the greenkeeper can accordingly leave that grass longer. The proper raking of traps, the addition or enlargement of bunkers, the removal of trees—those may all be points on which the fellow who plays every day may very profitably help the greenkeeper—particularly, as I say, where the greenkeeper does not himself play golf. The golfer cannot over-estimate the debt he owes to a good greenkeeper—to the fellow who helps in very great measure to make good golf possible, and I take this opportunity of wishing success to the National Association of Greenkeepers of America. May your organization, in continuing its splendid work, receive from the playing

public, both amateur and professional, a full measure of appreciation.

Editor's Note: The writer of this friendly talk to the non-playing greenkeeper is too well known as a golfer to need an introduction to our readers. That he practices what he preaches is confirmed by Captain Rees, who in a recent conversation said with a quick smile, "Bobby's a bully good friend of mine."

Ten Thousand Dollars for Seed

Ten thousand dollars spent in one season by a golf club for grass seed? Doesn't seem possible, does it? However, it's a fact.

How did this come about?

Puffy soil, due to too deep plowing, rushing to get the seed in without waiting for a rain to settle and firm the surface. All surface soil plowed in beyond the reach of the feeding roots of the grass plants, leaving practically nothing more than gravel to receive the seed.

Grass seed was drilled in, and the first heavy rain washed fifty per cent of the seed so far into the light soil that it never germinated.

That's a short story of how ten thousand dollars was spent by one club this year. Next year they will spend twice as much in re-seeding, patching, fertilizing and worrying their thin stand along.

It was a new club, and they locked the barn after the horse was stolen. After the officials had talked with an expert greenkeeper, one of our prominent association members, this fall, the club subscribed for the National Greenkeeper and purchased all back numbers.

From The Viewpoint Of Local Associations

What District Associations of Greenkeepers are Doing

Arkansas Greenkeepers Form New Organization

A MEETING of the local greenkeepers was called at the Broadview Hotel, Wichita, Kansas, on October 27 at 1 P.M. Those present were:

Chester Mendenhall, Municipal Golf Links, Wichita, Kansas.

W. R. Moore, Wichita Country Club, Wichita, Kansas.

Chas. Martin, Carey Lake Golf Club, Hutchinson.

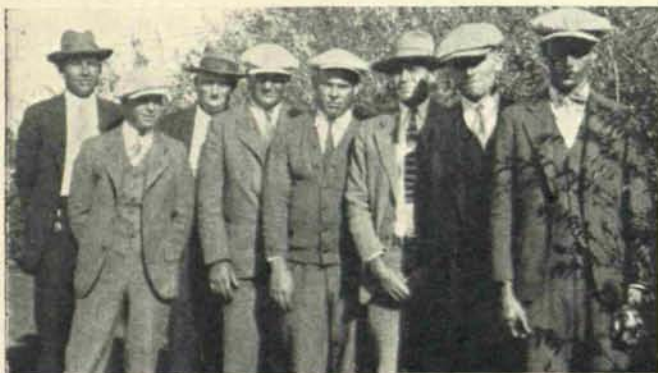
Glenn Kollihoff, Willow Brook Golf Club, Hutchinson.

Percy Burks, Municipal Recreation Golf Club, Arkansas City.

W. B. Dickerman, Arkansas City Country Club, Arkansas City.

Frank Wagner, Salina Country Club, Salina.

Mr. Chester Mendenhall was the first speaker. He talked about the need of a local organization of greenkeepers. He also discussed the National Association



THE ARKANSAS VALLEY GREENKEEPERS

Left to right, Chester Mendenhall, W. R. Moore, Percy Burks, Frank Wagner, Charles Martin, W. B. Dickerman, Glenn Kollihoff

of Greenkeepers of America, and their magazine, the NATIONAL GREENKEEPER, urging all greenkeepers that were not members of the National Association to become members.

Mr. Mendenhall suggested that there be a local association of greenkeepers formed at this meeting, and the association be called the Arkansas Valley Greenkeepers Association. That they elect three officers namely, president, vice-president and secretary-treasurer. The officers to hold office until the first annual meeting, which is to be held the first week in March or prior to the National convention.

A motion was made and seconded that the suggestions read be accepted, and they were accepted by a vote. The following officers were elected:

President, Chester Mendenhall, Municipal Golf Links, Wichita. Vice-president, Percy Burks, Municipal Recreation Golf Club, Arkansas City. Secretary-Treasurer, W. R. Moore, Wichita Country Club, Wichita.

It was voted to hold the next meeting at the Carey Lake Golf Club, Hutchinson, Kansas, on Wednesday, November 16. All were urged to be present and bring another greenkeeper.

A drive to the Municipal Golf Links and Wichita Country Club followed. At the Municipal Links, Mr. Mendenhall showed those present over his course where the upkeep of sand greens was discussed.

At the Wichita Country Club, Mr. Moore showed them three varieties of bent grass, in the collection a Cocos green planted last spring and played in eighty-five days from time of sowing. He also discussed fertilization which included the use of Milorganite which he has been trying this season.

Detroit Greenkeepers Plan for Convention

A SPECIAL meeting of the Detroit District Association of Greenkeepers was held at the Hotel Fort Shelby on November 2 for the purpose of discussing plans for the entertainment of guests at the annual convention of the National Association.

The president of the National Association, Mr. John Morley, and the office secretary, Mrs. Farley, were present, and Mr. Morley was called upon for suggestions.

After an animated discussion it was decided that Mr. Alex McPherson would appoint a Men's and a Women's Entertainment committee at their regular meeting to be held November 14.

It was suggested that the wives of members be invited to attend the meetings of February 23 and 24, also to attend a banquet on Saturday evening the 25th.

The members of the Detroit Association one and all pledged their full support in assisting locally toward the success of the annual convention.

After the meeting the group inspected the ballroom in which the convention will be held and also the room contemplated for the exhibition of equipment.

A. E. Lundstrom Leaves Mid-West

THE last outdoor meeting of the season was held at the St. Charles Country Club, St. Charles, Ill., and twenty-five of the members attended.

A. E. Lundstrom, greenkeeper of the St. Charles course conducted the members around the course during

the morning, and discussed with them his soil conditions and the difficulties he had met with in contending with an extremely heavy clay texture.

After luncheon the business meeting was held, and a discussion of the winter program took place. A committee to formulate this educational program was appointed, consisting of A. E. Lundstrom, Ed. B. Dearie and B. Farmer. The newly appointed committee was urged to secure men of scientific repute to address the meetings on pathology, agronomy, soil science, landscaping, reforestation and other subjects of interest to greenkeepers.

It was decided to hold meetings bi-monthly at the Great Northern Hotel, Chicago, and to have as a feature of alternate meetings talks on practical greenkeeping subjects by members of the Mid-West. It was also decided to devote one meeting each month to scientific subjects to be arranged for by the Program committee.

It was voted that one representative from the Mid-West Association will be sent with expenses paid to all National Association meetings, or any Green Section meetings of note.

A suggestion was made that the association hold an annual ball sometime in January, so that members may get together in a social way with their wives and families. A report of this suggestion will be brought before the next meeting together with the first report of the Program committee.

ON October 26 the first indoor meeting of the Mid-West association was held at the Great Northern Hotel, at which the Program committee reported that letters had been written to several scientific experts asking their co-operation in delivering talks at the winter meetings.

A. E. Lundstrom, having accepted a position in the Metropolitan district, was replaced on the Program committee by Robert Duguid. The members all spoke with regret of losing Mr. Lundstrom, who has been from the first one of the most active and valuable members of the association. A suggestion was made that Mr. Lundstrom be accorded a life membership in the Mid-West Greenkeepers Association, and that a card voicing these sentiments and printed in gold letters be presented to him upon his departure for the East.

Mr. Lundstrom then stated that he would show his appreciation by donating a cup to be played for at the next year's annual golf tournament.

Mr. Lundstrom also volunteered to make arrangements at one of the Engineering Society clubs of Chicago, where the association may hold the January ball, which was suggested at the October 12 meeting. The

president, Mr. MacGregor asked the members to sell tickets for the affair, which plan was carried to vote and duly passed.

Philadelphia Greenkeepers Hold Picnic

THE regular monthly meeting of the Philadelphia Association of Golf Course Superintendents was held at the Pine Valley Golf Club, on Monday, October 10, 1927.

Quite a few of our members took advantage of the privilege to play over this nationally known and difficult course, and it is sufficient to say that no new records were created.

At 6:15 P.M. an appetizing chicken dinner was served to our two guests and twenty-two members who were present.

Meeting was called to order at 7:15 P.M. with President Evans in the chair.

Mr. Evans called for the expenses of our picnic, and golf course equipment demonstration, held at the Manufacturers Club on September 12, 1927.

He also asked for any constructive criticism for future picnics.

Mr. Wilbert Carney of the above club was given a rising vote of thanks for his splendid aid in making the picnic a success.

Mr. Louis Nobbe of the Roseman Tractor Mower Company was introduced as the speaker of the evening. He spoke on various mower subjects and also answered various questions.

Motion was made and carried to give the Pine Valley Golf Club a rising vote of thanks for their hospitality and service.

It is with deep regret that we announce the death of one of our esteemed members, Mr. Charles Ewers, who was employed by the Riverton Country Club. He was fatally injured in his line of duty and died in the Cooper Hospital, Camden, N. J. at 7:10 P.M. on Monday, October 10, 1927.

Cleveland Arranges Winter Program

The first indoor meeting of the Cleveland Association was held the afternoon of November 14 at the Hotel Winton, and called to order by the president, Fred Burkhardt of Westwood Country Club.

Mr. Burkhardt introduced the new officers elected at the October 10 meeting then asked for suggestions in appointing the advisory committee to serve members

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W. D. Chinery

AS we may look upon a golf course more or less as a permanency then we should accept this as a guide when the planting of such shrubs is being contemplated.

Too frequently do we see shrubs dotted about singly, and with little or no effect, oftentimes causing unnecessary work. Undoubtedly the best results are obtained by the judicious massing and blending of shrubs so that the colors harmonize one with the other, as well as with the surroundings.

Make Selections to Harmonize with Surroundings

To avoid an artificial or unnatural appearance throughout the course it will be necessary to divide such shrubs for planting into two groups or sections; one for the grounds in proximity to the clubhouse, and the other group for planting in masses to break up any large open tract of ground, also to more clearly define the different fairways.

Where there is a dense bush or tall tree for a background of a large open space it may be advisable to adhere to the plan above in preference to planting taller trees. For this reason, the latter would hardly be noticeable only at close quarters owing to the density of the trees in the background, but the mass of more dwarf shrubs meets the eye at once and has the desired effect from any angle.

Selecting and Planting Shrubbery

Grouping, Selection and Planting of Flowering and Ornamental Shrubs for Clubhouse and Grounds

By W. D. CHINERY, Greenkeeper

York Downs Golf Club, Eglington, Ontario, Canada

(Photographs received from Stumpp & Walter Company)

The class of shrubs I would suggest for this purpose would be of a subdued or less showy type than those selected for the clubhouse grounds.

Avoid Massing, On Large Area

Where a collection of shrubs is to be planted over a large area it is well to avoid massing, as this would tend to give too much of a sameness—if I may use that term. A better plan and one that is highly recommended is to form a group of one or two subjects, thereby giving a bold and pleasing effect. The formation of such groups should be as simple as possible so as to admit of any machine getting round for cutting, etc., and thus avoid unnecessary hand work.

Preparation for Planting

And so we come to a most important stage in the cultivation of all plants, i.e., the preparing of the ground and planting. Oftentimes this is done in a promiscuous manner, generally ending in failure and disappointment. A hole here and there in the grass, the plant inserted, little care or thought as to the roots—these are often twisted and covered up in a tangled manner, and but lightly tamped down, and that's near enough.

I do not wish to appear as being too hard on my point, but what is worth doing at all is worth doing well. To proceed, the ground selected for planting should be well broken up and thoroughly worked. If of a very heavy sticky nature a liberal amount of fine gravel or coarse sand, ashes, etc., should be incorporated, also a little thoroughly rotted manure. After roughly



Rhus Glabra (Sumach)



Syringa (Common Lilac)
A clump of these old favorites is a thing of beauty every spring.



Symphoricarpus (Snowberry)



Viburnum Sterilis
(Snowball or Guelder Rose)



Cornus (Dogwood)



Philadelphus (Mock Orange)

leveling the ground a good plan is to space and place out the shrubs to be planted, putting the smaller or weaker ones, if any (and there generally is) to the outside.

Allow Plenty of Room for Roots

In making the hole for planting, an important point is to see that the roots have ample space. Do not cramp them in any way so that they lie naturally and be kept at the proper level. Put a few shovelfuls of fine soil over the roots, then give the plant a slight upward lift and shake at the same time. This will allow of the soil settling well round the roots, guarding against air pockets which are the cause of a lot of failures. One should exercise care in not planting too deep or too shallow. When sufficient soil is in place, tramp the hole firmly. This is too often neglected. To complete operations water thoroughly and mulch with half rotted manure.

Consider Your Climate in Ordering Shrubs

There is a very large collection of shrubs to choose from, although in our locality we are to a certain extent limited to choice. Quite a number of desirable shrubs are too tender to justify the risk of planting on a golf course. Therefore, one must use discretion in making a selection for their own particular part of the country.

One can often procure plants that are indigenous to the country and which are more suitable than exotics. For example I do not know of more beautiful shrubs for this purpose than the red and yellow barked dogwood (*Cornus*). The rich coloring of the wood makes them distinctive and attractive all through the winter. The well known sumach (*Rhus Glabra*) also affords rich coloring in the autumn. Following are a few named shrubs which we have found to be perfectly hardy and very desirable for planting in masses.

Lonicera—*Tatarica*—*Morrowi* (Bush Honeysuckle)
Rhamnus—*Cathartica* (Buckthorn)
Hippophae—*Rhamnoides* (Sea Buckthorn)
Ligustrum (Privet)
Philadelphus (Mock Orange)
Spiraea—*Opulifolia*
Syringa (Common Lilac)
Symphoricarpos—*Racemosus*, *vulgaris* (Snowberry)
Viburnum—*Opulus*, *sterile*, *plicatum* (Guelder Rose)

The first four named are especially worthy of cultivation, giving an abundance of flowers, and later on followed by a profusion of bright red, black, and orange colored berries, making the shrubs doubly attractive.

(To be continued)

In Building a New Golf Course

By G. A. FARLEY, Assistant Secretary-Treasurer
The National Association of Greenkeepers of America

In the coming January issue of the National Greenkeeper, an article written by John MacGregor of the Chicago Golf Club will appear. We hope it will be read by the officials of every embryo golf club in America.

Preliminary to Mr. MacGregor's very good advice, we would like to submit for the attention of new club officials one suggestion for the direct benefit of members and prospective members who will support the young club through its period of construction and during its future maintenance.

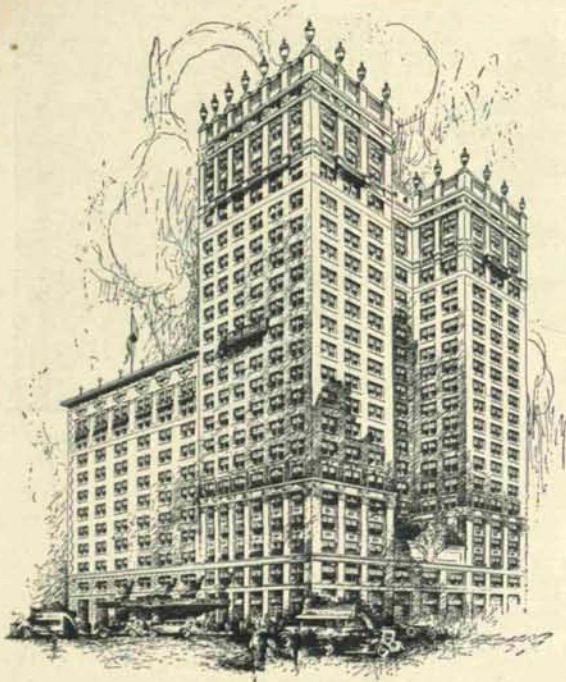
It has been the custom of many new clubs to select the greenkeeper after the period of construction is over and the grass is well sprouted all over the course. Starting a new greenkeeper in the work of keeping the greens another man has built and seeded is not fair to the greenkeeper, and is often a source of considerable added expense to the club.

If a greenkeeper is engaged during the early stages of construction, he starts his work of maintaining the course with

a full knowledge of the soil and what has been incorporated therein to encourage a stand of grass on greens, tees and fairways. He has no period of adjustment to make, and no guessing to do.

There is a definite place for a greenkeeper on a new golf course as soon as ground is broken for the fairways, and before putting greens have been roughly contoured. No expert cook enjoys being called upon to save a cake which has been spoiled in the mixing. Equally so, no greenkeeper however expert, can guarantee a good putting surface the first playing season if he does not know at first hand what has gone into the making of the green from the drain tile to the new growth of grass.

It is almost unnecessary to add that the Employment Bureau of the National Association is at your service, entirely free of charge.



The magnificent Hotel Fort Shelby, located at the corner of First Street and Lafayette Blvd., Detroit where the National Greenkeeper's convention and golf show will be held in February

THE most distinguished group of golf course experts ever gathered together in the United States, will assemble at Detroit the last week in February when the National Association of Greenkeepers of America holds its second annual convention.

The program of papers to be read and discussed is the most comprehensive ever undertaken by any golf organization. John Morley, president of the greenkeepers' association, who is recognized as one of the outstanding authorities on golf course maintenance in the country, has prepared an educational program for greenkeepers covering practically every subject on turf culture.

"We want every greenkeeper in the United States and Canada and every golf professional who is interested in greenkeeping to attend the Detroit convention," said Mr. Morley in a recent interview.

"It is not essential though to be a member of our association," continued the president. "Everyone is welcome to come and profit to the fullest extent from the reading of the papers, the

Detroit Conve

discussion of the points involved and the personal contact with those who are nationally recognized as authorities on the subject of golf course construction and maintenance.

"We are also inviting Green committee chairmen and golfers generally to attend the sessions, and since it is impossible for us in all cases to make this invitation personal I take this opportunity to urge each and every reader of the National Greenkeeper who has golf course problems at hand to be with us in Detroit in February. We shall make you welcome and I know

Some of The Papers to be Read and Discussed

At the National Greenkeepers Convention In Detroit

THE CONTROL OF BROWN PATCH

By Dr. John Monteith, Jr., Associate Pathologist, U. S. Department of Agriculture.

THE FERTILIZATION OF SOILS

By O. J. Noer, Soils Department, University of Wisconsin.

GRUB CONTROL

By Professor B. R. Leach, Associate Entomologist, U. S. Department of Agriculture.

THE PROTECTION OF GOLF COURSE TREES

By C. M. Scherer, Principal Davey Institute of Tree Surgery.

GOLF COURSE DRAINAGE

By Wendell P. Miller, Golf Course Drainage Engineer.

CANADIAN MAINTENANCE PROBLEMS

By C. A. Tregillus, Consulting Expert, Canadian Golf Association.

THE PROPAGATION OF BULB-GROWN PLANTS

By Joseph T. Van Hagen, Sr., Greenkeeper Plum Hollow Golf Club, Redford, Michigan.

THE CONSTRUCTION OF PUTTING GREENS

By Captain David L. Rees, President Westchester County Greenkeepers Association.

BRINGING A NEW COURSE ALONG

By Edward B. Dearie, Secretary Mid-West Greenkeepers Association.

MAKING USE OF A BENT NURSERY

By Hiram F. Godwin, Greenkeeper, Redford Golf Club, Redford, Michigan.

CLUBHOUSE GARDENS

By W. D. Chinery, Greenkeeper, York Downs Golf Club, Eglinton, Ontario, Canada.

Convention Attracts Golf Experts

you will not regret the time or money spent in attending this most interesting meeting.

"To those chairmen who cannot attend the convention may I urge you to send your greenkeepers. I know it is the best investment any golf club can make, and the results will surely justify the expense, because only through association, contact and education can one progress in our greenkeeping profession and learn to avoid the troubles that golf courses have experienced in the past."

The Golf Show

Plans for the golf show to be held in connection with the National Greenkeepers convention at the Fort Shelby Hotel, Detroit, are practically complete. In response to Mr. Morley's request in the November number of the National Greenkeeper for opinions as to the advisability of holding a show, the response was unanimous for it. The association office has been flooded with inquiries and requests for space from manufacturers and dealers everywhere with the result that a careful distribution of the small amount of space available will have to be made

to accommodate all who are entitled to exhibit.

It has been decided that only those whose product pertains directly to golf course construction or maintenance will be allotted space. In other words the Detroit show will be essentially a greenkeeper's show with exhibits that interest those who have to do with golf course maintenance. Even so, a large attendance of golfers is expected because the playing condition of the course and how it is obtained is of great inter-

est to the men who foot the bills. The golf show will open on Tuesday, February 21, in advance of the convention proper which goes into session on Thursday morning, February 23. This will give greenkeepers and golfers a chance to spend the Washington Birthday holiday at the show and to meet the trade and confer with their friends and associates before the convention program begins. A large crowd is expected on Washington's Birthday when the golf show will be open all day and evening with no admission charge.

A women's Entertainment committee headed by Mrs. William Smith of the Red Run Country Club, Detroit, will arrange a program of entertainment for the ladies who attend the convention.



Dr. John Monteith, Jr. of the U. S. Department of Agriculture will present a paper on Brown - patch control



Capt. David L. Rees President of the Westchester Greenkeepers Association who will present a paper on Construction of Putting Greens

Hotel Grants Special Rates to Greenkeepers

Special rates to greenkeepers and golfers attending the National Greenkeepers Convention and Golf Show have been granted by Hotel Fort Shelby, according to an announcement just received from J. E. Frawley, manager.

Mr. Frawley assures the members of the association and their friends that nothing will be left undone to insure their comfort and enjoyment during convention week.

Hotel Fort Shelby is located in the heart of the downtown Detroit district, and is one of the largest and finest in the city. Those expecting to attend are urged to make their reservations with Mr. Frawley at as early a date as possible.

Room without bath, one person	\$2.50 per day
Room without bath, two persons	3.50 per day
Room with bath, one person	3.00 per day
Room with bath, two persons	4.50 per day
Room with bath, twin beds	5.00 per day



Month by Month With the Trees

By C. M. SCHERER

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DURING the past few years the game of golf has grown so rapidly that many new courses are being built every year. At the same time people have come more and more to a realization of the value of trees on their course. As a result many of the courses are built in the woodlands. When the trees are growing in the woods they are surrounded by natural conditions. But when the golf course is made those conditions are usually changed, and a change of conditions is almost invariably harmful to trees, especially to the larger, older ones, which naturally have the most value.

During their lives in the woods the trees have accustomed themselves to a certain amount of available water. Each year the leaves fall to the ground, remain where they fall and in rotting, return to the soil the elements extracted by the tree. In this way the soil is always mulched. It is always rich in humus.

Drainage Ditches Rob Trees of Water

When a course is built, however, usually one of the first operations is drainage. Drainage materially interferes with the supply of water as it has previously existed. The open spaces left when the trees are removed for the fairways, tees, and greens allow both the wind and the sun to dry out the soil much more rapidly than formerly when the whole area was wooded. Not only has the drainage interfered with the water supply, but also the sun and wind cause great quantities of water to evaporate into the air, leaving an insufficient quantity for the remaining trees, especially those trees which are along the edges of the fairways.

Wind Blows Away Natural Covering of Leaves

Along with the disturbance of the water supply these factors, especially the wind, have a decided influence on the humus content of the soil. Prior to the building of the course the leaves came down in the forest and remained where they fell. With wide areas opened up for fairways the wind has a chance to sweep across the ground and blow the leaves away, so that the ground is swept clean under what usually happens to be the most valuable and important tree.

It is not at all uncommon to see a screen of trees a few yards wide between two adjacent fairways. Such trees are always important, but the construction of the two fairways has so changed conditions that the trees are not numerous enough to make a woods, or woody condition, but have to grow almost entirely as individuals. It is under such conditions as this that the destruction is the greatest. Always the largest and best trees succumb first, and the various members of the club are almost distracted, not only because of the destruction of their beautiful trees, but also because of the unsightliness and added expense which dying trees always bring.

I have in mind a golf course in Akron which very nicely illustrates this situation. Their number five fairway extends for some one hundred and fifty yards into the woods, where the green was at one time surrounded by beautiful big trees. Immediately to the right of the number five fairway is the number three fairway, so that for a part of the distance at least, there is a narrow strip of woods between the two. For a few years after the construction of the course the trees were gorgeously beautiful, and then the evidence of their decline made its appearance. First one and then another of the large top-most branches of the trees died, so that now, some ten years after the construction of the course, the beauty of a number of the holes has been largely destroyed.

Saving Trees Along Fairways Difficult Problem

The unfortunate thing about the whole situation is the fact that control measures are, to a great extent, incompatible with the game of golf, especially when it is impossible for even the best players to always keep the ball on the fairway. Remedial measures can be applied in one of two ways, either of which, is very unsatisfactory from the player's standpoint. First, low growing ground covering plants like myrtle, honeysuckle, and various other plants which will shade the ground, even when surrounding tees have been removed, and will hold the leaves, can be planted. Or the ground can be cultivated and herbaceous ground covers, such as pachysandra