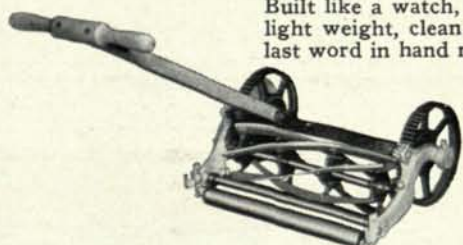


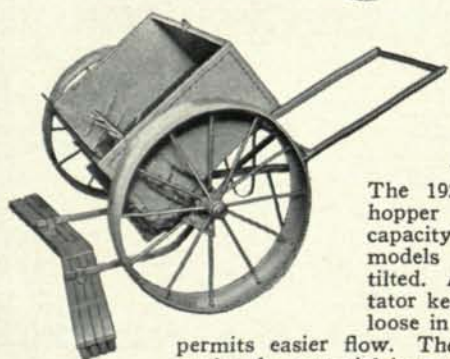
# TORO EQUIPMENT

## New Additions to the TORO Line

### Silver Flash Hand Mower



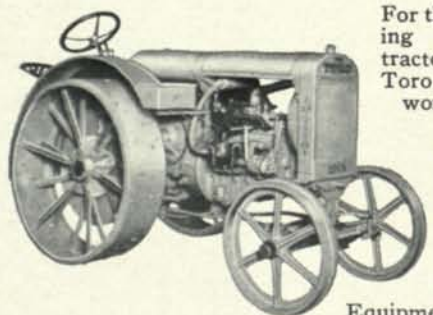
Built like a watch, light running, light weight, clean cutting. The last word in hand mowers, a mechanical work of art and a wonderful mower to handle. Every club should have a full set.



### Toro Improved Top Dresser

The 1928 model. The hopper is of greater capacity than former models and can be tilted. A revolving agitator keeps the material loose in the hopper and permits easier flow. The flexible brush works the material into the grass immediately after being dropped. Does better work than the old machine.

### Toro Pull-type Tractor



For those clubs wanting a high-grade tractor built up to Toro standards of workmanship, we recommend the Pull-type which has practically the same specifications as on the Toro Standard Machine.

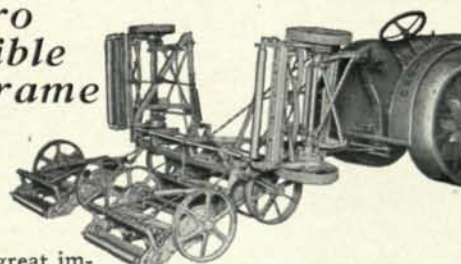
Equipment—Built complete with wide wheels, spikes, crown fenders, high tension magneto, clutch brake, automatic governor, large size automobile steering wheel.

### Toro Park Junior



A 22" power mower with same Toro motor as the Park Special 30" machine. For cutting around close places and doing a clean job of cutting once over, Park Junior has no equal. Every 18 hole club should have at least one.

### Toro Flexible Pull Frame



For those clubs pulling their mowers behind. The new 1928 model is a great improvement.

Two end sections can be raised for going thru narrow places, or they can be dropped off, instantly converting the frame into a 3-unit outfit for cutting the rough.

### Toro Standard Tractor

The 'Old Reliable' that is daily delivering trouble-free service on over 500 clubs. Improved this year by an automatic steering device. Steers by a light touch of the steering lever which every operator will appreciate.



Above are a few of the new additions to the Toro line of golf course machinery. There are a number of other changes, improvements and additions which will be found in the new 1928 catalog just off the press. Write immediately for copy.

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The author combines a university education on this intricate subject with an intensely practical experience in golf course maintenance work throughout the United States. In fact, Mr. Noer has visited more golf courses, and is personally acquainted with more greenkeepers than any other expert in his line.

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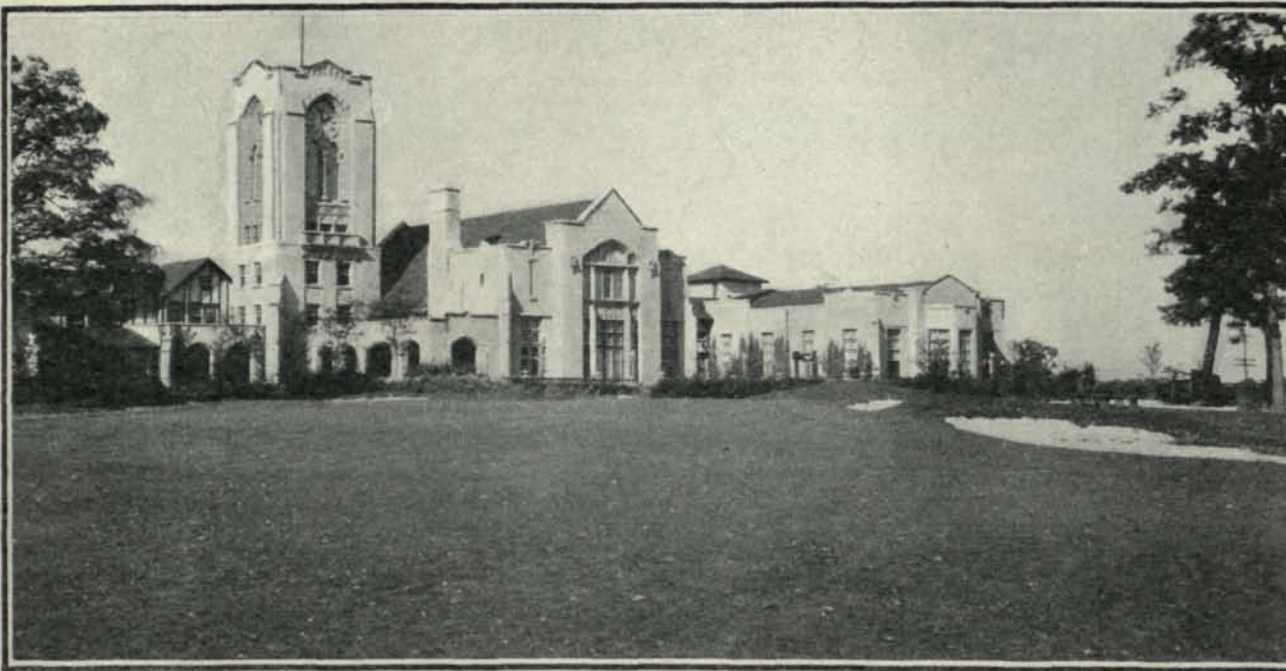


FRED KRUGER, Superintendent  
in charge of Olympia Fields'  
four 18 hole golf courses

# OLYMPIA FIELDS

One of America's Largest Golf Clubs

finds SEMESAN an effective  
preventive for Brown Patch



"BOTH courses, No. 1 and 4, are in beautiful shape B..." wrote the staff correspondent of the Chicago Daily News on the day of the twenty-seventh annual Western Open Championship at Olympia Fields. "The speculation of low scores predominates" he continued.

Greens were fit for champions, chiefly because the superintendent, Mr. Fred Kruger, is an ardent believer in prevention.

"I use Semesan both as a preventive and as a cure for Brown Patch.

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cure and I am spared the unpleasantness of diseased greens."

(signed) FRED KRUGER

Greenkeepers who take their responsibility seriously take no chances with Brown Patch. Effectiveness against the Brown Patch disease and freedom from turf injury are two reasons why the best golf clubs in America consistently use Semesan.

The 18th green on Number One Course at Olympia Fields Country Club, Matteson, Ill. It was on this green that Walter Hagen, in the 1927 Western Open, broke the course record of 70 with a 67, scoring a "birdie" three on this hole with a 40-foot putt. The ball was holed out from a point in front of the left bunker about 15 feet off the green.

## Treat Grass Seed With Semesan

If you want to grow a velvety turf, give your grass seed a disease free start by dusting with Semesan, one ounce to every fifteen pounds. Full instructions in our Brown Patch booklet.

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Sherman, Chicago,  
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## Used Wherever Championships Are Played



# Greenkeepers' Convention and Show Number

MARCH, 1928

Single Copies Twenty-Five Cents.  
Yearly Subscription to Members Two Dollars.  
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## The NATIONAL GREENKEEPER

*Official Organ of The National Association of Greenkeepers of America*

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VOLUME II.

No. 3



*W. D. Chinery of Eglinton, Canada who speaks on Club-house Gardening.*

### *Complete Program of the Greenkeepers' National Convention and Golf Show Opens at Hotel Fort Shelby, Detroit Tuesday, February 21*



*C. A. Tregillus of Toronto who speaks on Canadian Maintenance Problems.*

#### **Tuesday, February 21**

Golf Show Opens at 11 A.M., Spanish room, Hotel Fort Shelby

#### **Wednesday, February 22**

##### **DETROIT DISTRICT DAY**

Golf Show Opens at 10:30 A.M., Closes 10:30 P. M.

#### **Thursday, February 23**

Golf Show Opens at 10:30 A.M., Closes 10:30 P.M.

##### **NATIONAL GREENKEEPERS' CONVENTION**

Opening Address by John Morley at 10 A.M.

##### **Papers:**

##### **Morning**

###### **STARTING THE NEW COURSE ALONG**

*By Edw. B. Dearie*

Secretary Mid-West Greenkeepers' Association

###### **PROTECTION OF GOLF COURSE TREES**

*By C. M. Scherer*

Principal Davey Institute of Tree Surgery

###### **MAKING USE OF A BENT NURSERY**

*By Hiram F. Godwin, Greenkeeper,*

Redford Golf Club, Redford, Michigan

##### **Afternoon**

###### **THE PROPAGATION OF BULB GROWN PLANTS**

*By Joseph T. Varn Hagen, Sr., Greenkeeper*

Plum Hollow Golf Club, Redford, Michigan

###### **THE FERTILIZATION OF SOILS**

*By O. J. Noer, Soils Department,*

University of Wisconsin

###### **THE CONSTRUCTION OF PUTTING GREENS**

*By Captain David L. Rees, President*

Metropolitan Greenkeepers' Association

###### **CLUBHOUSE GARDENS**

*By W. D. Chinery, Greenkeeper*

York Downs Golf Club, Eglinton, Ontario, Canada

#### **Friday, February 24**

Golf Show Opens at 10:30 A.M., Closes 10:30 P.M.

##### **NATIONAL GREENKEEPERS' CONVENTION**

##### **Morning**

##### **Papers:**

###### **THE ASSOCIATION AND THE PRO-GREENKEEPER**

*By Alex Pirie, President*

National Professional Golfers Association

###### **CONSTRUCTION AND MAINTENANCE OF TENNIS COURTS**

*By V. L. Delmarle, Construction Engineer,*

Brooklyn, New York

###### **CANADIAN MAINTENANCE PROBLEMS**

*By C. A. Tregillus, Consulting Expert,*

Canadian Golf Association

##### **Afternoon**

###### **THE BOOKKEEPER AND THE GREENKEEPER**

*By E. W. Doty, Treasurer*

Cleveland District Golf Association

###### **THE CONTROL OF ANTS**

*By M. A. Daniels, Greenkeeper*

Pontiac Municipal Golf Course, Pontiac, Michigan

###### **SOME OF THE TURF DISEASES**

*By Dr. John Monteith, Jr., Associate Pathologist*

U. S. Department of Agriculture

###### **GOLF COURSE DRAINAGE**

*By Wendell P. Miller, Golf Course Drainage Engineer*

Columbus, Ohio.

##### **Friday Evening**

7 P.M.

Banquet Arranged by the Entertainment Committee of the Detroit District Greenkeepers' Association

\$2.50 per plate, Tickets at registration desk

#### **Saturday, February 25**

Golf Show Opens at 10:30 A.M., Closes 10:30 P. M.

Business and Elective Meeting

The National Association of Greenkeepers of America

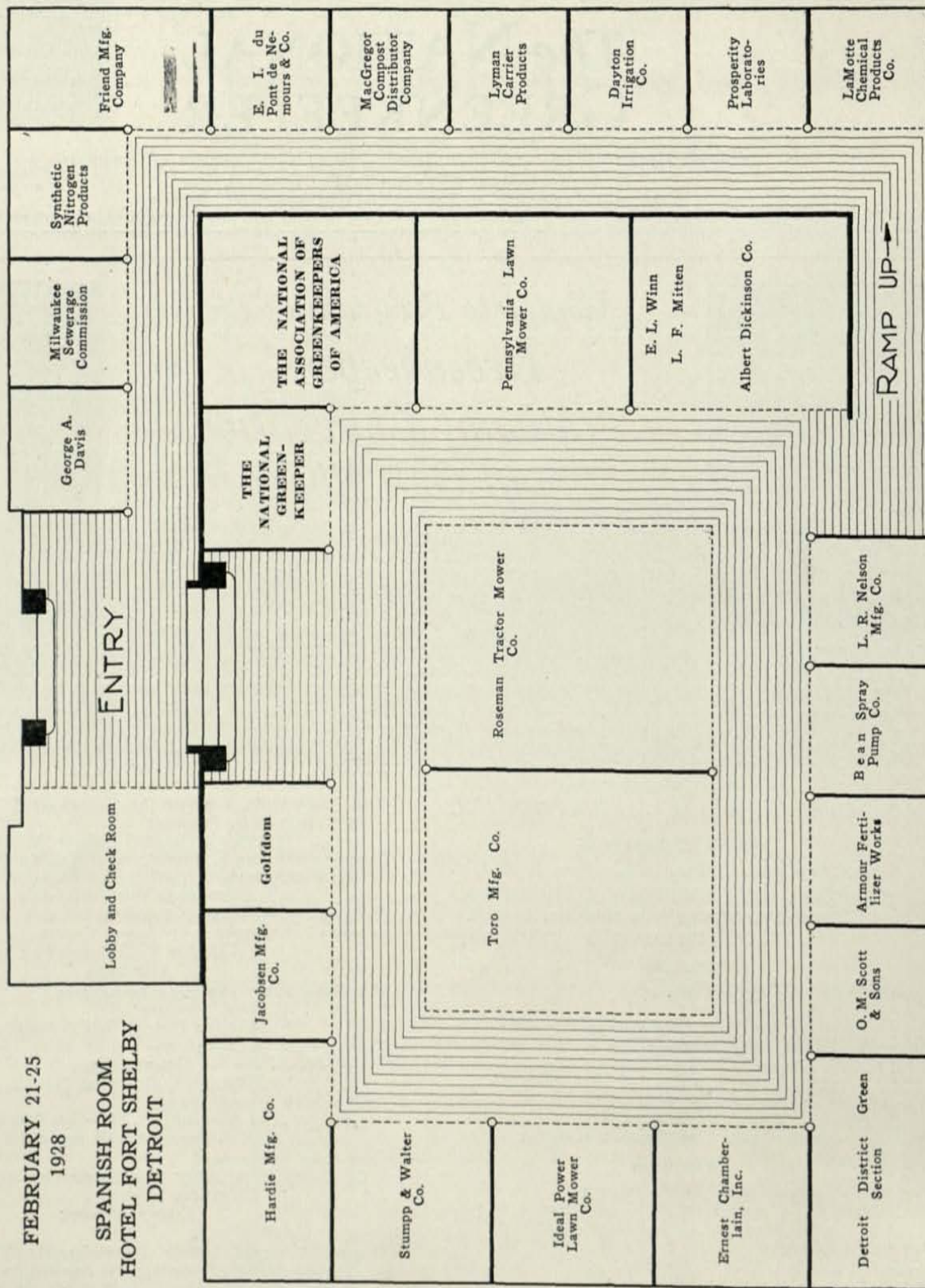
From 10 A.M. to 12



# First National Greenkeepers Golf Show

FEBRUARY 21-25  
1928

SPANISH ROOM  
HOTEL FORT SHELBY  
DETROIT





# Where Does Economy Start?

By EDW. B. DEARIE, *Greenkeeper*  
Ridgemoor Country Club, Norwood Park, Ill.

**E**CONOMICAL golf maintenance is a business and a greenkeeper must have a sound knowledge of this very intricate work in order to obtain the best results, at a reasonable maintenance cost.

He must look upon his work as something that demands constant application of thought and effort to enable him to skilfully manage labor and determine the various phases of course maintenance cost and its problems.

No two courses are alike in construction, soil, turf conditions, labor supply, location with respect to supplies of materials, —or what is most important, the demand of the members as to the condition in which the course should be kept.

Some courses may have a great number of traps and bunkers while others may have natural hazards, sand wastes and woodland comprising Nature's own hazards, with streams running throughout the course. One may be on clay, another on sand, one may require a great deal of drainage from time to time while another may not require any. One course may irrigate its fairways, tees and greens from natural streams; another may require deep wells and lakes that require a costly pumping system, plus labor and power cost.

One course may be on good soil and have available top soil to dress greens, tees and fairways, while another being on very poor soil, will require years to condition before a good playable turf can be obtained.

There are so many uncontrollable factors in course maintenance that it is hard to set any standard. It is like the game itself which is always fighting the player and usually wins. The forces of Nature are always giving resolute combat to the greenkeeper. What are beautiful greens today are unsightly tomorrow.

## Economy Starts with Construction

The most important of all the foregoing suggestions is the ultimate economy in getting the best advice in the first place, and making it as reasonably certain as possible that any work of a permanent character has not eventually to be done over again.

Modern greenkeeping owes a great deal of its present knowledge to the mistakes that were made by the pioneer clubs of this country. Science has also made many contributions to the field of greenkeeping that are of inestimable value.

To emphasize this important factor, one cannot possibly lay too much stress on the economy of obtaining the



Edward B. Dearie

best advice in the building of any new course, as this is the basis of future cost of upkeep. Yet it is a matter which is most frequently disregarded. It is in the very beginning that club upkeep cost becomes an expense. The very day construction work is begun and the wrong kind of work attaches itself, then a double expense is contracted. There is not only the primary cost of construction, but frequently the additional expenditure of doing away with unnecessary objects. On any course, it is just as expensive to fill up a bunker as to make one.

The excuse that most clubs make for not getting the best advice is that they cannot afford it. The poorer the club is however, the more important it is that they should not waste their small funds in spending money the wrong way.

## The Architect and the Construction Committee

Golf clubs, generally speaking, start from rather modest beginnings and eventually grow into institutions that receive and expend considerable sums of money each year. As the business end of the club develops, it becomes more and more necessary that the money be spent on a pre-arranged plan based on the requirements of the work to be done. Therefore the plan for all clubs in the process of organization is to nominate a committee which shall select a golf architect who understands the fundamentals of golf course designing, construction and turf problems. Does he know the ideals of the game? Does he know construction and also the maintenance of what he has produced?

Good courses advance the game while a poor course invites ridicule from critics and never creates enthusiasm in the club.

When the committee has decided upon the architect, they should hold a conference and talk over the situation in general. The club committee should discuss with the architect at that time all their ideas on the subject and offer suggestions. If they are good ones, no competent architect will hesitate to incorporate them in his layout.

Clubs may very properly disagree with what the architect thinks is best. The committee should have perfect freedom to discuss with him the plans of future upkeep cost, and the possibility of maintaining the course by power machinery so as to reduce hand labor. This is the big item of upkeep.

It must be remembered, however, that in nearly every



club, a large proportion of the members are inclined to object to all the difficult features on the course. But if the architect is sound, these same objectors will be the very ones to "point with pride" afterwards.

Consequently the architect must exercise tact and persuasiveness to convince the committee that his ideas are reasonable and that they will prove satisfactory.

I can assure you that golf course architecture is a question of study and education just as much as law, medicine or any other scientific profession and is not simply a question of muscle or physical skill as some still believe.

The club should not expect the architect to submit plans and specifications and then not supervise the work, because in nine cases out of ten, the men engaged to build the course do not or cannot interpret the ideas of the architect's plans. It is practically impossible to put on paper or incorporate in a model, some of the ideas that fit in well with the general landscape. Many must be worked out on the ground or in the progress of the construction.

Begin at the bottom and build up. That will be the key to what it will cost to maintain courses in the future. Too many courses have been built in the past from the top down and have gone through constant remodeling and reconstruction.

However, no two courses are alike. Consequently every golf course has particular features which may be easily destroyed if an attempt is made to introduce imitations of some other course.

### The Greenkeeper on a New Course

The same principles apply to the maintenance of the course. Obtain a thoroughly reliable and competent greenkeeper and give him full charge of the supervision of your course. The supreme error of golf course management is that after the club has secured the best architect possible, they turn the upkeep problem over to some man who probably worked on the construction and has no knowledge of cost upkeep or the problems of turf maintenance.

There can be no course maintained properly without sufficient knowledge of the difficulties of greenkeeping and turf culture. A greenkeeper who has confidence and skill to go ahead and plan his work in advance has the instincts of good greenkeeping. Knowledge of the qualities of soil; the use of fertilizers and top dressings which are free from weeds; seeds, and the use of proper seed, all are vital elements in efficient turf maintenance.

If one general law of turf management is laid down, it might well be the one that turf needs first of all suitable conditions for growth rather than medicines. A greenkeeper with a knowledge of what are the standards of good golf with regard to the condition of the course, including tees, greens and fairways, rough and hazards, will with intelligent effort keep the course in better condition than if he has no standard by which to judge.

*Editor's Note: This article will be followed by another by Mr. Dearie in the coming April issue, covering the unit cost system applied to course maintenance.*

## Draining an Established Course

By WILLIAM PHILIPSON, Willowdale Country Club, Williamsville, N. Y.

CUT sod 14 inches wide and any length easy to handle. Lay sod to left of drain about 15 inches from edge, then remove top soil 9 to 12 inches and lay this between sod and edge of drain.

Now remove sub soil to the required depth and put this on the opposite side of drain.

Lay tile carefully and cover joints with old grain bags cut in strips, back fill on tile with 7 to 9 inches of top soil and finish fill with sub soil.

A good method to prevent settlement is to run the wide wheel of the tractor lengthwise of the drain, refill the drain with sub soil and repeat rolling with tractor. This will then allow enough depth for the last few inches of top soil.

When replacing sod finish 1 to 2 inches above grade. Now use the tractor for final rolling.

We have a heavy clay sub soil, and we find that putting the top soil over tile results in better drainage.

During the last two years over 20,000 feet of tile have been placed successfully as above.

## GOLF CLUB OFFICIALS!

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# Developing a Course Out of Blow Sand

By JOSEPH T. VARN HAGEN, SR., *Greenkeeper*  
Plum Hollow Golf Club, Redford, Michigan

I HAVE been for about twenty-five years in golf construction and maintenance, and feel safe in saying that golf course work is nothing but landscape and art gardening in all its most essential points. The late Professor Piper agreed with me on this subject, and in him I lost a wonderful friend.

When I first went into golf I was told by experts on golf construction, chairmen, etc., that I would have to forget landscape gardening, that golf was entirely different, but soon found how wrong this was as I have in my work on a golf course used at some time or other every bit of knowledge I had. Of course I was always in charge of the ornamental parts of grounds along with the golf course.

## Starting With Blow-sand and Quicksand

The grounds of Plum Hollow Golf Club were nothing but a wind-swept waste when I arrived here about seven years ago. Nothing ever grew here except perhaps a few sand burrs. I had nothing to work on but blow-sand with a sub strata of quicksand which we are still fighting, also our soil even now is leachy, and is hard to keep fertile.

I was told by natives of this "Hollow" I would never get anything to grow here, and many local greenkeepers, among them Alex McPherson, advised me to chuck the job before I ruined my reputation as a greenkeeper. I knew, however, what we had done with sandy wastes in Holland, and today feel that Plum Hollow Golf Course will be a monument to me when I have passed on.

## Landscape Artistry in Construction

I built this course and everything on it, including our bridges, changing even the course of our creek; taking

in, enlarging upon and enhancing every natural point of beauty as time goes on, as it is only an infant as golf courses go.

The placing of every shovelful of sand was well thought over, wild trees and bushes were transplanted, and even surrounding properties with any claim to beauty were brought into the picture by clearing and perspective.

## What a Greenkeeper Must Know

To get back to the job of golf course construction I feel that every greenkeeper worthy of the name is a landscape of art gardener, as he must know how to topograph his land, must have knowledge of mensuration.

He has trees under his care so must understand forestry, pruning and grafting to some extent.

If he is in charge of ornamental parts of grounds he must be a nurseryman and florist, and in some cases orchardist and even vegetable gardener.

He must know the building of driveways, rockeries, terraces, drainage, waterways and water systems. He must have a good knowledge of machinery and electricity.

He looks after the bird life on his grounds and thousands of other things which come up in the studies of a landscape gardener.

## Association and Magazine of Great Help

The demands made upon a modern greenkeeper are so many that only a part of the story of his achievements is written upon his greens.

As a man who has always been studiously inclined, and who has used for many years both theoretical and practical knowledge, I would like to say that the National Association of Greenkeepers and this magazine are not only worth while to every man who has a golf course under his supervision, but they are of great importance indeed.

Nearly every greenkeeper has some hobby in connection with his work, or some method he has originated to lessen labor cost. Some greenkeepers are expert mechanics, and often have inventive minds. What better service can an Association member render than contributing to this magazine a description of his "pet" method or invention, that others less gifted may profit therefrom?



Joseph T. Varn Hagen, Sr.



The guardian of the Varn Hagen family keeping watch at Number 17 green at the Plum Hollow Club



# Some Tips on New Construction

By MACK BURKE, *Greenkeeper*  
Tam-O'Shanter Country Club, Canton, Ohio

**T**AM-O'SHANTER COUNTRY CLUB is located five miles Northwest of Canton, Ohio, on a gently rolling tract of ground containing 305 acres. The present course as built is 18 holes, with a length of 6,400 yards, and occupies 138 acres of the whole, leaving sufficient land available for another 18 holes.

The course is planned to be used as a daily fee course, and will be operated by the owners and builders, the T. K. Harris Company, of this city. The course was planned by Leonard Macomber of Chicago and was built by the writer and M. R. Paul as Engineer in charge.

The total acreage of Tam-O'Shanter was acquired piecemeal over a period of three years. The first work was done in the fall of 1926, when 225 acres were plowed and allowed to stand over winter. Construction work was started in April 1927, when the general tiling for the whole area was put in place. This tiling varied from 4-inch to 12-inch tile for the mains, about 23,000 feet being in place by the first of June.

## Moving Soil Economically

Brush clearing occupied a large part of this time, and a steam shovel was moved in to cut down several hills along the main road, and for the purpose of grading a parking space. Approximately 15,000 yards of dirt were moved during this operation at an average cost of 34 cents per yard. This was accomplished by renting the shovel and using 3 yd. trucks on all long hauls, some of which were 2,000 feet long. For the shorter hauls, we had six teams serving the shovel for hauls up to 800 feet.

## Use of Fresno Scrapers and Steel Rail

Construction on the course proper started with the building of No. 8 green on June 16th, and by August 22nd, all the greens, tees, and thirty traps were finished and ready for the finish grading, prior to seeding. No teams were used on this work, the force consisting of 5 tractors with 4 Groundhog Fresnos and one 15 ft.—40 lb. steel rail for a drag. The dirt for the most part of the greens was moved from traps and we found that the Fresnos were much more economical than teams due to the lesser cost and greater volume of dirt moved per day. The working force consisted of 5 tractor drivers, truck driver as supply man and 30 laborers. Several of the greens had fills of more than seven feet, but this was handled by the Fresnos with ease. The procedure was for the Fresnos to load, haul and dump in place. Immediately afterward, the tractor with the rail drag fol-

lowed behind and leveled off the load. This drag enabled us to secure natural looking greens where the contours blended perfectly with the contour of the surrounding terrain. This is one of the most valuable helps on new construction we have found.

Most of the greens were built larger than those on private courses, as we figured in this way we could expedite play for the newer players, and by careful trapping we could make the course interesting enough for the scratch player. The greens varied from 6,000 to 14,000 square feet each.

## Plan of Water System

The water system consisted of a 10-inch drilled well, 90 feet deep, a 5,600 gallon storage pressure tank and a Peerless vertical lift centrifugal pump with a capacity of 150 gallons per minute under a 290 foot head and 300 gallons per minute under a 100 foot head. This type pump was selected after a careful comparison of all other types, both as to first cost and also as to upkeep. The pump is practically noiseless, which was a prime consideration as the pump house was located only 150 ft. from the club house.

Four inch distributing mains of precast pipe were laid from the pumphouse and supply lines were placed on every green, tee and fairway, those on the fairway being 2-inch lines with outlets placed about 80 yards apart. Lines to the green were 1½-inch and to tee, 1 inch. Most of the lines were laid 18 inches deep by means of a ditching machine. Special care must be taken in all leads off the cast iron pipe. We used malleable saddles for all connections on the 4-inch pipe and used full gaskets of lead and rubber, well coated with asphaltum paint.

## Planting the Course

The greens were planted with bent stolons, Washington strain. Each green had ten men working on it at one time, raking, fertilizing and later planting and rolling. The planting outline was put down and the men worked up to it very closely. Topdressing was screened and stored and on the day of planting was hauled to the greens to be planted. The ten men averaged three greens daily, in planting, topdressing and rolling.

The whole 305 acres were seeded to a mixture of 80 per cent Bluegrass and 20 per cent Red Top, previously being fertilized with a 20-20-4 inorganic fertilizer, applied at the rate of 200 pounds per acre.

*(Continued on page 38)*