

No more "grief" from broken castings with this new gang mower unit!

For the first time, as one of the features of the 1931 *Pennsylvania* Fairway Quint or Trio, here is a gang mower unit built to automotive standards, with complete frame of *unbreakable malleable iron*, including wheels, side plates, lower knife bar, roller brackets and shield.

Other features of the 1931 Fairway include a new dirt-proof gear housing and an ingenious new bearing for the ground roller made of a single ball operating in two hardened steel cones.

Our attractive 1931 catalog, just off the press, is yours for the asking. Fill in and mail the coupon now.

PENNSYLVANIA LAWN MOWER WORKS
PRIMOS, DELAWARE COUNTY, PA.

Penna. Lawn Mower Works,
Primos, Delaware County, Pa.

Please send me your new 1931 Golf Catalog. I am particularly interested in equipment checked: Fairway mower.....; tractor..... greens mowers.....

Name _____ Title _____

Club _____ City and State _____



Thousands of Dollars Invested in Greens ... A Few Dollars Will Save Them From Destruction by Deadly Brown Patch

A carpet of green velvet—a perfect putting surface—that is what makes players proud of their golf club. It takes time and money to get turf into such perfect condition.

Then comes the deadly Brown Patch and works havoc. A very small investment will save all this.

Barbak 211—the perfect disinfectant will keep your greens free from Brown Patch. Tests of treated and untreated areas prove that Brown Patch will travel over an untreated area and come to a dead stop on the line precisely where Barbak 211 has been used.

As a preventative, Barbak 211 protects against Brown Patch for a longer period than ordinary disinfectants. One well-known greenskeeper places this at 42 days. As a cure, it checks the fungus immediately and quickly brings back a normal stand of turf.

Barbak 211 may be applied in solution or dry, mixed with a top dressing, sand or fertilizer and watered in. Write for further facts.



AMERICAN CYANAMID SALES CO., INC.
535 Fifth Avenue New York City

Barbak

TWO • 211 • ELEVEN

TURF DISINFECTANT

facturers and all exhibitors at the Deshler-Wallick. Tuesday night at 7:00 o'clock there will be a meeting of all District vice-presidents for the purpose of organizing new districts and to discuss ways and means to strengthen districts now organized. Tuesday at 8:30 p. m. there will be a meeting of the executive committee.

All members of general committees will meet at the call of the Chairmen. Wednesday at 7:30 p. m. the first session of the Convention will convene. At this meeting reports of the president, secretary and treasurer will be read, as well as the minutes of the last Convention and Executive committee meetings. Immediately after there will be a general discussion to consider the good and welfare of the Association. If any member feels that it will be impossible to attend the final session which will be held Friday morning at 10:00 o'clock and desires to bring before the Convention any item of interest he can do so at the first session.

Thursday and Friday Conferences will start promptly at 2:00 p. m. At the close of these two Conferences we will hold a Forum, in charge of Professor L. S. Dickinson. This Forum will consist of a Question Box. If there are any questions you would like to have answered or hear discussed write the question on a slip of paper without any signature and just place it in the Question Box at the Registration Desk. The Conferences will be held at the Auditorium. All other meetings at the Deshler-Wallick.

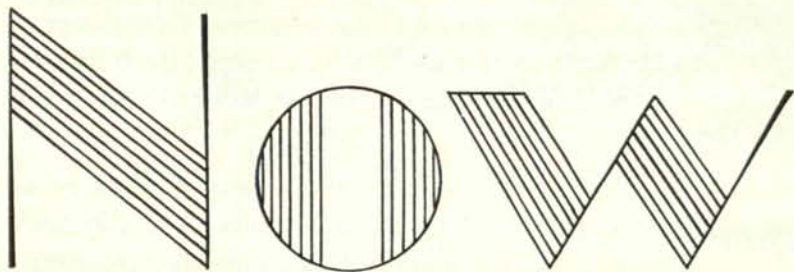
On Thursday evening at 7:00 p. m. sharp will be the Annual Banquet. You don't want to miss this for an excellent fine menu and entertainment are being provided for.

Friday night will be the Stag smoker and Midnight Show. We are not going to tell you what is in store for you, but I do know if you do not attend you will miss one of the greatest events which we have ever undertaken. Members Admitted free.

LADIES WILL BE ENTERTAINED

WE are pleased to learn from Mrs. Varn Hagen, president of the Wives of National Greenkeepers that the membership of their association will come to Columbus in full force. The Entertainment committee at Columbus have special arrangements to entertain the ladies with luncheons, teas and theatre parties.

About one or two days before you leave for Columbus secure your railroad ticket, tell the agent



you can have **BETTER**
FAIRWAYS
without
more money

YOU know what the trouble has always been — you have never had enough fertilizer for your fairways.

Now there's a way to have more fertilizer for your fairways — and without any more money.

In Nitrophoska you get more plant-food for your money than you can get in any other fertilizer. Nitrophoska is three to five times as rich in plant-food as most fertilizers. And, remember, it is the plant-food that your fairways need.

An application of 100 pounds of Nitrophoska per acre is equal to 400 pounds of ordinary fertilizer. And costs very much less.

If you are really determined to have better fairways, you will use Nitrophoska — because it gives you more plant-food for the same money.

You can buy Nitrophoska from your regular supply dealer, or direct from us.

SYNTHETIC NITROGEN PRODUCTS CORP.
 285 Madison Avenue, New York

*Urea is the ideal
 Nitrogen Fertilizer
 for Greens*

Repeated tests have proved conclusively that Urea is an ideal nitrogen fertilizer for the finest grasses. It furnishes organic nitrogen in the same form as in liquid manure. It gives a beautiful green color to the turf, and is long-lasting in its effect.

NITROPHOSKA

TRADE MARK REG. U.S. PAT. OFF.

15-30-15

The Most Economical Fertilizer Ever Made

Feed your fairways and greens instead of re-seeding them

Follow a regular program of fertilization that will make your turf vigorous, healthy and attractive.

Starved grass is unsightly. Seed that is broadcast upon poor land is largely wasted. There is one way to make the fairways and greens of a golf course durable and beautiful . . . make the soil fertile enough to push the natural spread of grass and support a healthy turf. You can do this by following a proper program of fertilization.

For Greens

Apply Armour's Special Turf Fertilizer to your greens this spring. Broadcast 20 pounds per 1000 square feet before growth starts. Additional applications with your top dressing at the rate of 10 pounds to the 1000 square feet should be made during the growing season as needed.

For Fairways

Give fairways 500 pounds to the acre of Armour's Special Turf Fertilizer in early spring before growth starts. And again in late summer or early fall, apply 200 pounds or more to the acre to stimulate root growth and strengthen the turf before freezing weather arrives.

Late Applications

Late applications insure a supply of available nitrate nitrogen in the soil in early spring when it is too cold to produce its own nitrates, thus it materially increases the number of blades of grass, aids its spreading and gains from two to three weeks heavy growth.

Repeat this feeding program each year. You will develop a permanent turf that will go a long way toward eliminating weeds. You will have a permanent investment which will lessen the cost of future maintenance. Write for free booklet, "Solving The Turf Problem."

Twenty-one conveniently located plants insure prompt deliveries.



Armour Fertilizer Works

General Offices

111 West Jackson Boulevard, Chicago, U.S.A.

that you are going to the National Greenkeepers' Convention and ask him for a certificate (not a receipt), so that you can obtain reduced rates when you are ready to return home.

When you arrive at the Deshler-Wallick go at once and register for your room. Tell the clerk that you are attending the Greenkeepers' Convention and inform him what price room you desire and if you want a friend to room with you also inform the clerk.

When you go to the Auditorium to view the Golf Show you will find a Registration desk, with Harry Burkhardt, Chairman in charge. Present to him your name and leave your half-fare certificate received from the railroad. You will be presented with a Badge. At another table you will find the secretary with John Quail in charge. At this desk if you so desire you can pay your 1931 dues, get application blanks and be sure to notify them if you desire a ticket for the Banquet.

We have arranged another desk exclusively for the Ladies and it will be in charge of Mrs. Varn Hagen and Miss Helen Webster. It is very important that all ladies who are our guests register so that Joseph Williamson, Chairman of the Entertainment committee can arrange and know how many ladies to prepare for.

I wish to reaffirm that I know of no greenkeeper who is not entitled to a vacation after the busy playing season is over or before the starting of another and there are few golf club officials who will not assist in every way to make it possible for their greenkeepers to spend a week at Columbus. If for financial or other reasons you feel that the trip is out of the question just give your Chairman this magazine to read and leave it to him. Without doubt he will find a way for you to be with us.

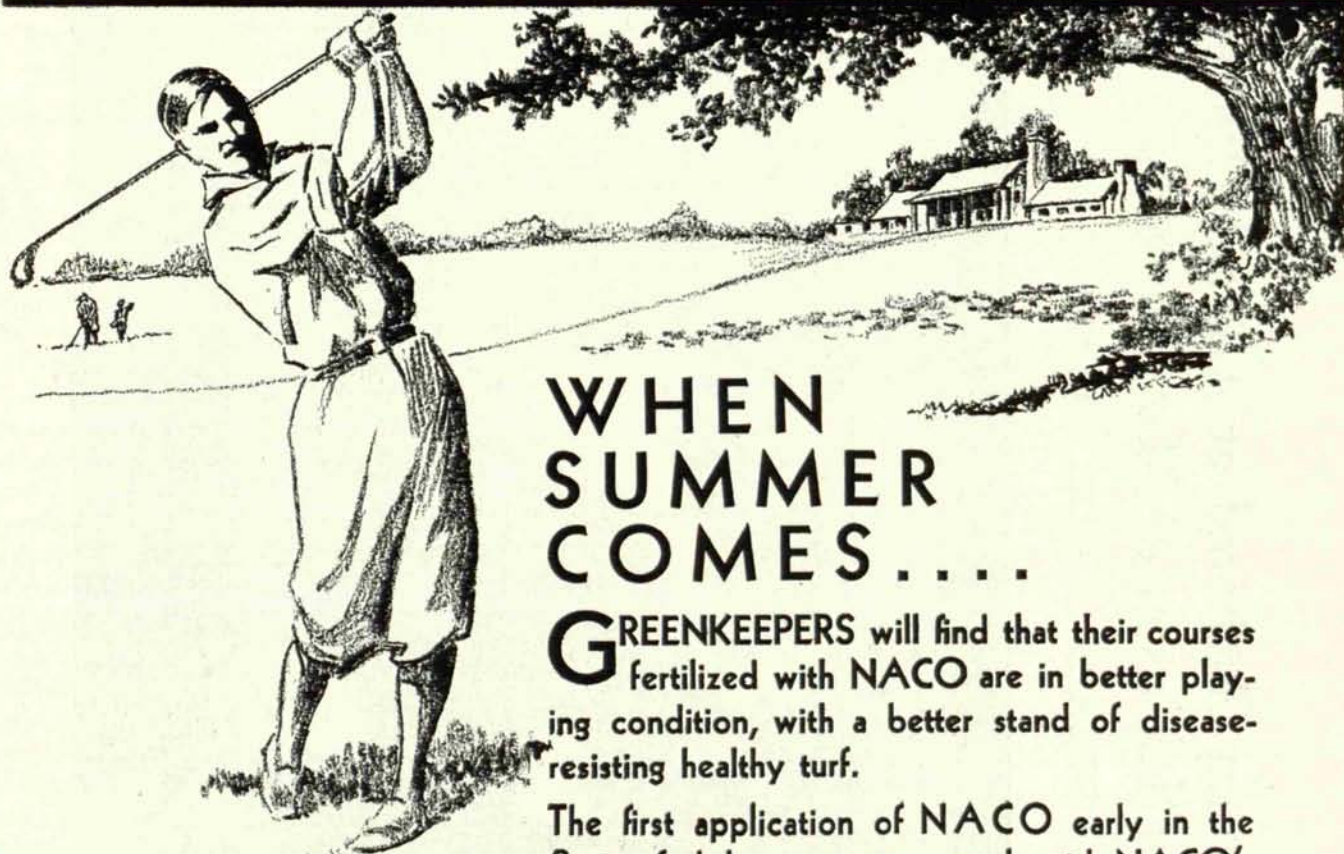
A Message to the Ladies

To the Wives of the National Greenkeepers, I would say, "Be sure and come to Columbus, February 3-6."

A program has been arranged by the Ladies' committee at Columbus and we are looking forward to one good time, so don't let anything keep you from being there with us.

To those who have not already signed up, arrangements are being made to meet you at the desk at the Golf Show.

MRS. J. VARN HAGEN, *President.*
MRS. H. E. SHAVE, *Vice President.*



WHEN SUMMER COMES

GREENKEEPERS will find that their courses fertilized with NACO are in better playing condition, with a better stand of disease-resisting healthy turf.

The first application of NACO early in the Spring fed the grasses generously with NACO's quick-acting organic Nitrogen just when it was most needed for vigorous growth.

Because NACO is complete, its Phosphorus in the form of digested fish bones helped to build a thick deep-rooted turf and the Potash controlled the feeding of Ammonia to produce a fine stand of wear-resisting grass that does not wilt under drought and the heat of summer sun.

NACO being organic, is long lasting and economical . . . takes less per green and less per acre of fairway. Its Ammonia is in seven different forms and regular feedings of NACO will furnish a continuous supply of this most essential plant food for it is not leached by heavy rains or excessive watering.



NACO is made from Genuine Peruvian Guano according to a formula that produces the definite chemical analysis of 8% Ammonia, 4% Available Phosphoric Acid and 2% Potash.

Sold by Golf Supply and Seed Houses throughout the United States
and manufactured exclusively by

NITRATE AGENCIES COMPANY
104 PEARL STREET - - NEW YORK CITY

Cleveland Greenkeepers and their Chairmen Gathered at Annual Dinner
at Hotel Hollenden. Professor L. S. Dickinson of Massachusetts
Agricultural College was Guest Speaker of the Evening



Photo by Ertler

Cleveland Greenkeepers Entertain Chairmen

MEMBERS of the Cleveland District Association of Greenkeepers entertained their Green's chairmen at dinner at Hotel Hollenden, Monday evening, January 12. About sixty were present and it was a very enthusiastic and educational meeting.

Professor Lawrence S. Dickinson, turf expert of Massachusetts Agricultural College, was the guest speaker of the evening and delivered a very able address on "Greenkeeping—Today and Tomorrow." He cited the remarkable advance in greenkeeping in the past few years and made some very pointed prophecies as to what would be demanded of the greenkeeper of tomorrow. It was a thoughtful talk and one full of portent.

O. J. Noer, soil expert from Madison, Wis., talked entertainingly on various conditions existing on golf courses which he visited this past season. He predicted that the greenkeeper who reaches the top of his profession must make a deep study of causes and effects and learn to analyze the technical reasons for certain physical phenomena.

Mr. E. W. Doty, treasurer of the Cleveland District Golf Association and famous golf statistician, acted as toastmaster and kept the gathering in good humor throughout the meeting.

Frank Ermer of Ridgewood, new president of the Association made a speech of welcome in which he set forth the high standards upon which the Cleveland Association is founded.

List of Those Present at the Cleveland Dinner

Harry H. Bandy, Sec'y., Cleveland District Golf Association.
E. W. Doty, Treas., Cleveland District Golf Association.
Professor L. S. Dickinson, Massachusetts Agricultural College.
O. J. Noer, Milwaukee Sewerage Commission, Milwaukee.
Frank W. Ermer, Ridgewood Club, Pres., Cleve. Dist. Greenkeepers' Assn.
G. T. Whitmore, Jr., President, Ridgewood Golf Club.
R. F. Banks, Green chairman, Ridgewood Golf Club.
Fred Knopf, Ass't. Greenkeeper, Ridgewood Golf Club.
Christopher Bain, Greenkeeper, Oakwood Country Club.
John Sevier, Ass't. Greenkeeper, Oakwood Country Club.
Walter E. Knowles, Sec'y., Cleveland Dist. Greenkeepers' Assn.
H. Simmons, Ass't. Greenkeeper, Highland Golf Club.
Ben Zink, Greenkeeper, Highland Golf Club.
M. J. Samuels, Squaw Creek Country Club.
John Sheridan, Greenkeeper, Squaw Creek Country Club.
H. L. Zeve, Green chairman, Squaw Creek Country Club.
M. D. LaMoreaux, Greenkeeper, Kirtland Country Club.
Elmer J. Corlett, Greenkeeper, Beechmont Country Club.
W. T. Redmond, Green chairman, Beechmont Country Club.
Steve Szachury, Ass't. Greenkeeper, Beechmont Country Club.
Harry A. Lewis, Pro-greenkeeper, Sleepy Hollow Country Club.
W. J. Carter, Green chairman, Shaker Heights Country Club.
Bob Zink, Greenkeeper, Shaker Heights Country Club.
Frank H. Pelton, Shaker Heights and Hawthorne Valley.
Tony Renzo, Ass't. Greenkeeper, Shaker Heights Country Club.
J. H. Way, Pro-greenkeeper, Canterbury Golf Club.
Mal McLaren, Ass't. Greenkeeper, Canterbury Golf Club.
S. H. Mott, Green chairman, Canterbury Golf Club.
C. L. Reely, Green chairman, Acacia Golf Club.
Grange Alves, Pro-greenkeeper, Acacia Golf Club.
W. G. Plumer, Manager, Portage Country Club.

P. J. Bolitho, Greenkeeper, Portage Country Club.
Robert E. Power, Westwood Country Club.
Fred A. Burkhardt, Greenkeeper, Westwood Country Club.
A. J. Scherer, Ass't. Greenkeeper, Westwood Country Club.
Howard D. Cook, Green chairman, Elyria Country Club.
Ralph Rodgers, Greenkeeper, Elyria Country Club.
E. G. Rottman, Greenkeeper, Elmwood Country Club.
D. F. Shelling, Secretary-Treasurer, Elmwood Country Club.
C. G. DeVoe, Green chairman, Ashland Country Club.
R. F. Zechman, Greenkeeper, Ashland Country Club.
Harry A. Burkhardt, Greenkeeper, Manakiki Country Club.
Stanley B. Sherman, Green chairman, Chagrin Valley Country Club.
A. G. Fovargue, Pro-greenkeeper, Westbrook Golf Club.
J. E. Sanders, Greenkeeper, Bunker Hill Golf Club.
W. I. Kennedy, Manager, Bunker Hill Golf Club.
J. H. Adams, Green chairman, Bunker Hill Golf Club.
M. M. Knapp, Green chairman, Hawthorne Valley Golf Club.
Frank P. Dunlap, Greenkeeper, Hawthorne Valley Golf Club.
B. G. Krause, Green chairman, Dover Bay Golf Club.
Al. Baumann, Ass't. Greenkeeper, Oberlin Golf Club.
Jack Nickoloff, Greenkeeper, Oberlin Golf Club.
G. V. Jones, B. & O. Railroad.
Herman Goldstein, Cleveland News.
Chester L. Smith, Cleveland Press.
John Dietrich, Cleveland Plain Dealer.

President Ermer's Speech

Members of the Cleveland District Greenkeepers' Associations, Chairmen of the Green and Guests:

It is extremely gratifying to see such a large gathering here this evening.

Our constitution states that the fundamental aim of our Association is to advance in the art and science of successful greenkeeping, to collect and disseminate a practical knowledge of the problems of greenkeeping, and to promote a genial fraternalism among our members. Progress in any art or science has an inevitable tendency to render that particular subject more complicated.

The successful greenkeeper of today must have at his command a vast supply of scientific and technical knowledge which was virtually unknown to the greenkeeper of ten or twelve years past. A decade ago, the application of bent grasses to greens was in its infancy, Brown Patch was not generally prevalent and the fertilizers on greens and fairways consisted of a few relatively simple materials.

Within these ten years, however, we have witnessed the development of the numerous strains of bent grasses and their propagation by the now famous "stolen method;" there has been a marked increase in diseases of fine turf. We have also seen the advent of many innovations in fertilizer materials and we have watched with growing wonder the development of specialized machinery.

All these facts have greatly complicated the work of the greenkeeper, and with this wider scope of learning, greenkeeping has become a profession in itself.

It is with deepest satisfaction that I have viewed these changes, and it is my sincere wish to meet many more in the future.

We are presenting a diversified program tonight, both educational and entertaining. Now, our renowned toastmaster, Mr. E. W. Doty. I thank you.

We're Off For Columbus

*When You Buy Your Ticket—
Ask for a Certificate*

Present yourself at any ticket office at least 30 minutes before train time.

Tell the ticket agent you are going to Columbus to attend the National Greenkeepers' Convention and ask for a reduced fare convention certificate.

If your wife or children accompany you, get certificates for them also.

Buy your full fare ticket to Columbus—the reduced rate applies only on the return trip.

On arrival at Columbus report at once to Harry A. Burkhardt, Chairman of the Registration Committee of the National Association of Greenkeepers of America. Registration Booth in the Golf Show.

Leave your certificate with him until Friday and it will be validated by the Special Agent.

Call at the Registration Booth Friday afternoon and get your certificate for the return trip home.

When you buy your ticket home present your certificate to the ticket agent in Columbus and you will get a full fare ticket for half fare, thereby saving you 25 per cent of your total railroad expense.

John Quail Says:

It looks like a full house at Columbus. Letters are coming in every day and they all end up, "Will see you at Columbus.."

* * *

That's what we want to do. And we will see some new faces this year. Over a hundred new members since the last convention. The association is growing slowly but surely.

* * *

Speaking of new members, don't forget to bring that new one along that you have been going to get to join.

Let's take in a hundred at this convention and then get another hundred before the 1932 show.

* * *

John Morley is back on his feet again and is working harder than ever to make things go. If every member would only work half as hard as Col. Morley does, what an association we would have.

* * *

Don't forget the half fare on the railroad tickets. We are fortunate in securing the reduced rates again this year so when you purchase your ticket, ask for a convention certificate and present it at the registration desk to have it validated. When you purchase your return ticket, you will only have to pay half fare going home. It is impossible to secure the reduced rate if you fail to get a certificate as the railroads accept no excuses.

* * *

Write in to the Deshler-Wallick Hotel early for your reservation. There are a limited number of three-dollar rooms available and the first come first served.

* * *

Here's something that will interest a bunch of boys who want to stick together. The hotel has a number of large rooms where they can set up some extra beds and a bunch of the fellows can bunk together and have bang up accommodations and still save some money. Ask the reception committee or the room clerk about this.

* * *

Bring your chairman along. He will be glad to see that you are in an association that is doing so much to help the cause along. Maybe he will buy that new tractor you want so bad and some of the other equipment that he says you can't afford because of the depression. He will see some labor-saving equipment and it will open his eyes.

* * *

Don't forget the wife. She will be entertained and taken good care of and she will appreciate the chance to see the town.

* * *

All together boys, BOOST—BOOM—and BUY AT THE GOLF SHOW.

Send dues and official communications to 1101 Farmers Bank Building, Pittsburgh, Pa.

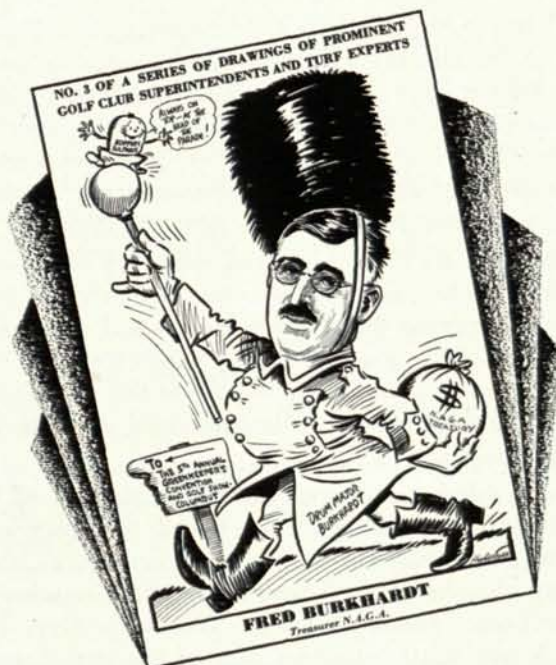
Any correspondence requiring the Secretary's personal attention may be sent to either 1101 Farmers Bank Building, Pittsburgh, Pa., or to —

JOHN QUAIL, Secretary
426 HIGHLAND AVENUE
WEST VIEW, PITTSBURGH, PENNA.

Address all communications relating to the Golf Show at Columbus, Ohio, in 1931 to —

FRED A. BURKHARDT
Chairman, Show Committee
405 CAXTON BLDG., CLEVELAND, OHIO

KOPPERS



It must be true!

Fred Burkhardt says Koppers is the finest, dryest sulphate he has ever seen. That makes it practically unanimous!

As Treasurer of the N. A. G. A. . . . one of its founders . . . and Chairman of the Convention Committee, Fred is busy these days. He has been responsible for the fine course of the Westwood Country Club, Cleveland, for 15 years and knows his greens!

Be sure to let us know if you don't receive the series of cartoons, showing Fred and other prominent turf experts as cartoonist Hungerford sees them. We'll send them to you promptly and gladly. And the originals will be in the Koppers Booth at Columbus. Don't fail to drop in and say "Hello!"

Visit the
**KOPPERS
BOOTH**
at
Columbus

KOPPERS PRODUCTS CO.

KOPPERS BUILDING

PITTSBURGH, PA.

The PEERLESS MOWER SHARPENER

**PROTECTING
THE TURF IN
HUNDREDS OF
PARKS, CEMETERIES
and on GOLF COURSES**

**SHARP TOOLS
SAVE TIME AND MONEY!**

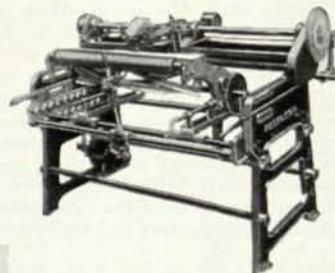
A PERFECT cutting edge on your mowers means a perfect turf. Avoid the damaging effects of dull cutting units that make a well-groomed turf impossible. Invest in a Peerless Mower Sharpener that offers you protection for your greens that is priceless. The Peerless is the only machine that sharpens all makes of power, horse or hand mowers—scientifically—perfectly—quickly—doing the job as you want it done. Run by a 1/3 H. P. motor—attach to your light socket. Special grinding wheel attachment for sharpening all sharp-edged tools is available.

**WRITE FOR CATALOG
AND LIST OF USERS**

The Fate-Root-Heath Co.

925 Bell Street

Plymouth, Ohio





Concealed or Pop-Up Tee Sprinkler

Special Engineering Service For Turfed Areas

TOPOGRAPHICAL MAPPING

Golf courses require accurate topographical maps to record every detail of the course facilities. The delineation peculiarly required for golf topography is best portrayed by Miller engineers who are used to ground and aerial-ground mapping for drainage, irrigation, and layout. If you lack complete maps, write Miller for prices.

DRAINAGE

Soil technology—the field and laboratory examination of soils—and the interpretation and practical application of these to turfing. If you doubt the wisdom of your expenditures for soil conditioning and fertilization, or if you have a soils problem to solve, send for a Miller engineer.

SOIL EXAMINATIONS FERTILIZATION PROBLEMS

Drainage of difficult soils demands the highest degree of engineering skill, experience, and soils technology. The reputation of Miller engineering was first established in the successful solution of intricate drainage problems. When your drainage system fails, or if you are planning substantial drainage construction, you can give finality to this facility by having Miller engineers design your work.

WATER SUPPLY

The water supply requires careful engineering to secure low cost water. Long experience in developing water supplies under widely diverse conditions has peculiarly fitted the Miller organization to cope with the hydraulics and economics of your water supply.

LOW COST IRRIGATION

The Miller one-man hoseless, tee, green and fairway water systems cost little more to construct (if any) than good hose systems. If you are contemplating fairway irrigation, we suggest that you consult with Miller engineers in order to secure the most and best for your money, and avoid the mistakes common to locally engineered projects.

"TROUBLE SHOOTING"

For over ten years the Miller organization has carried on an advisory maintenance and consultation service, meeting and overcoming troublesome turf situations. When you have on hand trouble which is likely to prove embarrassing, write, phone or wire for

Wendell P. Miller & Associates
CONSULTING ENGINEERS

— Soil Technologists —

105½ West Monroe St.

Chicago, Ill.

85 East Gay St., Columbus, Ohio

Pacific Coast Gossip

By ARTHUR LANGTON

THE Los Angeles Open Golf Tournament and some of the rain for which Southern California greenkeepers have been praying arrived almost simultaneously with the result that the Wilshire Country club, the site of the tourney, was temporarily indisposed and the tournament was postponed for one day.

But Bob Greenfield had cause to be thankful for the precipitation for it gave him one more day of grace in which to prepare for the big event. Also the resulting torrents sweeping down from Hollywood and points north very obligingly removed all debris from the bottom of his barrancas, thus eliminating the necessity of using quantities of sand to smooth them off as he was prepared to do.

The Wilshire greenkeeper took advantage of all the breaks with a result that did him proud; the Open went off without a hitch and compliments were the order of the day. Incidentally, the name Greenfield attached to a greenkeeper sounds almost too good to be true. But there is one in the northern part of the state has the name Greenless, which represents the height of something or other.

* * *

The rain and a dose of lead arsenate brought countless worms to the surface of the soil on the Wilshire course and a flock of seagulls made a field day of it by cleaning them up. The fairways were still a little heavy when play started but this was to be expected on the adobe-based course. Eddie Loos, who finished well up in the money, for at least one period in the tournament, was using a brassie to drive so that he could hook his ball and so take advantage of the slightest extra roll.

After all the praise that he has received for keeping his greens in fine shape through the tournament while others nearby were going brown, Greenfield has the mighty but inglorious task of cleaning up the mess made by seventeen thousand spectators chasing hither and yon over a wet course.

* * *

Now is the time of year when greenkeepers in the Pacific Southwest are looking for their water supply and repairing irrigation equipment for next summer and fall. L. T. Parker at the Pasadena Country Club is installing a new pump engine to replace the one worn out in California's eight-month battle with dryness.

* * *

James Birrel of the beautiful Valley Hunt and Golf Club of Santa Barbara sounded an ominous note in greenkeeping circles in his district recently. It seems that the course's well has gone dry and nothing can be done about it, with the result that one of the prettiest golf layouts on the Pacific Coast will face a terrible fight during the next dry spell.