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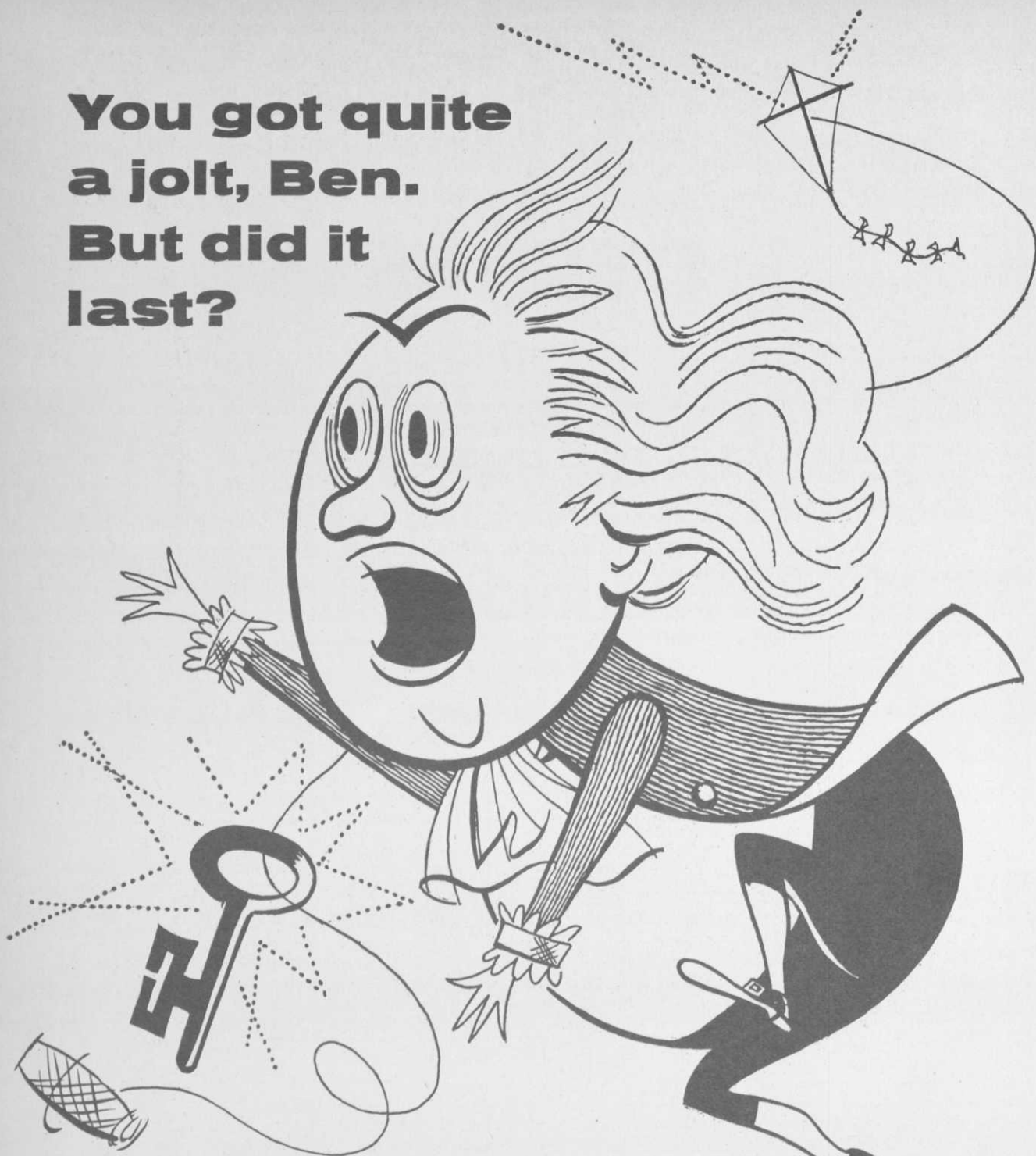


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CORPORATION**

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**You got quite  
a jolt, Ben.  
But did it  
last?**



When Ben Franklin flew that kite, he got quite a jolt. But it didn't last. "Jolting" turf with fast-acting fertilizers doesn't last either. That's why you have to jolt it so often. But Nitroform®, Hercules' ureaform turf food with 38% nitrogen, feeds at the steady rate turfgrass demands, lasts up to five times longer than conventional fertilizers. ☐ Nitroform is nonburning and odorless. It resists leaching and builds a nitrogen reserve. It's easy to apply, either as granular Blue Chip® for mechanical spreaders or as Powder Blue® for liquid application. ☐ Contact your Hercules representative or write: Turf & Horticultural Products, Synthetics Department, Hercules Incorporated, Wilmington, Delaware 19899.

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**LONG-LASTING NITROFORM®**

For more information circle number 213 on card





# Turfgrass research review

by Dr. James B. Beard

## Discussion of Soil Heating, Thatch Development

### Effect of Soil Heating on Winter Growth and Appearance of Ber- mudagrass and St. Augustine- grass.

G. G. McBee, W. E. McCune, and  
K. R. Beerwinkle. *Agronomy  
Journal*. 60(2): 228-231. 1968.  
(from the Department of Soil and  
Crop Sciences, Texas A & M Uni-  
versity, College Station, Texas  
77843).

The effect of winter soil warm-  
ing on the warm season turf-  
grasses, bermudagrass and St.  
Augustinegrass were investigated.  
Of particular concern was the  
maintenance of color and active  
growth during the winter pe-  
riod. Grasses utilized in the test  
included common St. Augustine-  
grass and three bermudagrasses,  
P-16, Tifgreen and Gene Tift. The  
Tifgreen was mowed at a height of  
0.75 inches while the other turf-  
grasses used in the study were  
mowed at 1.5 inches. In addition,  
the response to mowing heights  
was evaluated at cutting heights  
of 0.25, 0.625, 0.75 and 1.5 inches.

Variables in the heating instal-  
lation included (a) two types of  
soil warming cable (a commer-  
cial polyvinyl insulated cable and  
a non-insulated No. nine galva-  
nized wire), (b) varying cable  
spacings which provided watt den-  
sities of 5, 10, 15 and 20 watts  
per square foot and (c) the loca-  
tion of cables at three depths of  
two, four and six inches. The con-  
trol systems for heating included  
both air and soil temperature  
sensing thermostats with the in-  
corporation of a time clock and  
a time delay relay.

Results of this study indicate  
that the four grasses utilized gave  
varying responses to soil warm-  
ing. Within the bermudagrasses,  
Tifgreen and Gene Tift were more  
responsive to soil warming than  
P-16. At College Station, Texas,  
St. Augustinegrass was main-  
tained in an essentially green,  
growing condition throughout the  
winter period by means of sup-  
plemental soil warming, providing  
the turf is kept closely mowed  
and thatch build-up prevented.

Both the polyvinyl covered ca-  
bles and non-insulated galvanized  
wire have given satisfactory re-  
sults to date. Cable placement  
depths as deep as nine inches ap-  
peared to be satisfactory. The air  
temperature sensing thermostats  
were found to be the preferred and  
simplest indicator for controlling  
soil temperature. The air thermo-  
stats give better anticipation of  
when heat should be applied be-  
cause of the lag involved in soil  
temperature variations.

A watt density of 10 watts per  
square foot was adequate to main-  
tain the soil temperature at a  
depth of one inch near or above  
60° F. during short periods of  
extreme cold.

Mowing height was particularly  
important in maintaining adequate  
quality turfs during winter soil  
warming. Mowing heights of  
0.625 inch or less are required in  
order to maintain acceptable ap-  
pearance and turfgrass quality.  
Warm season turfgrasses main-  
tained at higher mowing heights  
were subject to freezing damage  
and loss of color during extreme  
cold periods at the heating levels  
utilized in this study.

*Comments:* Soil warming is a re-  
latively recent innovation in turf-  
grass management. It is now being  
used on a limited basis on athletic  
turfs in the United States. Those

associated with golf courses may  
think that soil warming will not  
be utilized on golf turfs. However,  
it may not be too many years be-  
fore this management aid will be-  
come one of the additional tools  
in maintenance of quality golf  
course turfs.

### The Effect of Cultivation, Top- dressing, Lime, Nitrogen and Wetting Agents on Thatch De- velopment in 1/4-inch Bent- grass Turf Over a Ten-year pe- riod.

R. E. Engel and R. B. Alderfer.  
1967 Report on Turfgrass Re-  
search at Rutgers University New  
Jersey Agriculture Experiment  
Station Bulletin 818. pp. 32-45.  
1968. (from the Department of  
Soils and Crops, Rutgers, the  
State University, New Bruns-  
wick, New Jersey).

The influence of various man-  
agement practices on the rate and  
nature of thatch development  
were investigated over a 10 year  
period from 1954 to 1964. The  
field tests were initiated on a  
six year old Seaside creeping  
bentgrass turf which had been  
overseeded with Penncross creep-  
ing bentgrass. The turf was grown  
on a loam soil having a pH rang-  
ing from 6.0 to 6.5. Phosphorous  
and potash were not limiting dur-  
ing the period of the study. The  
turf was mowed three times a  
week at 0.25 inch with clippings  
removed.

During periods of moisture  
stress, approximately 0.5 inch of  
water was applied three times per  
week. The 10 thatch control treat-  
ments were applied in four repli-  
cations arranged in a randomized  
block design with a plot size of  
6 by 20 feet. The thatch control  
treatments are summarized in the  
accompanying table.

*Continued on page 65*





**TORO<sup>®</sup> has  
too much at stake in professional  
turf care products  
to market a "just as good" sprinkler system.**

We don't think of it as a "penalty," but we sometimes feel the "pressure of leadership."

For more than 50 years, we've been inventors and innovators in all kinds of professional turf care equipment.

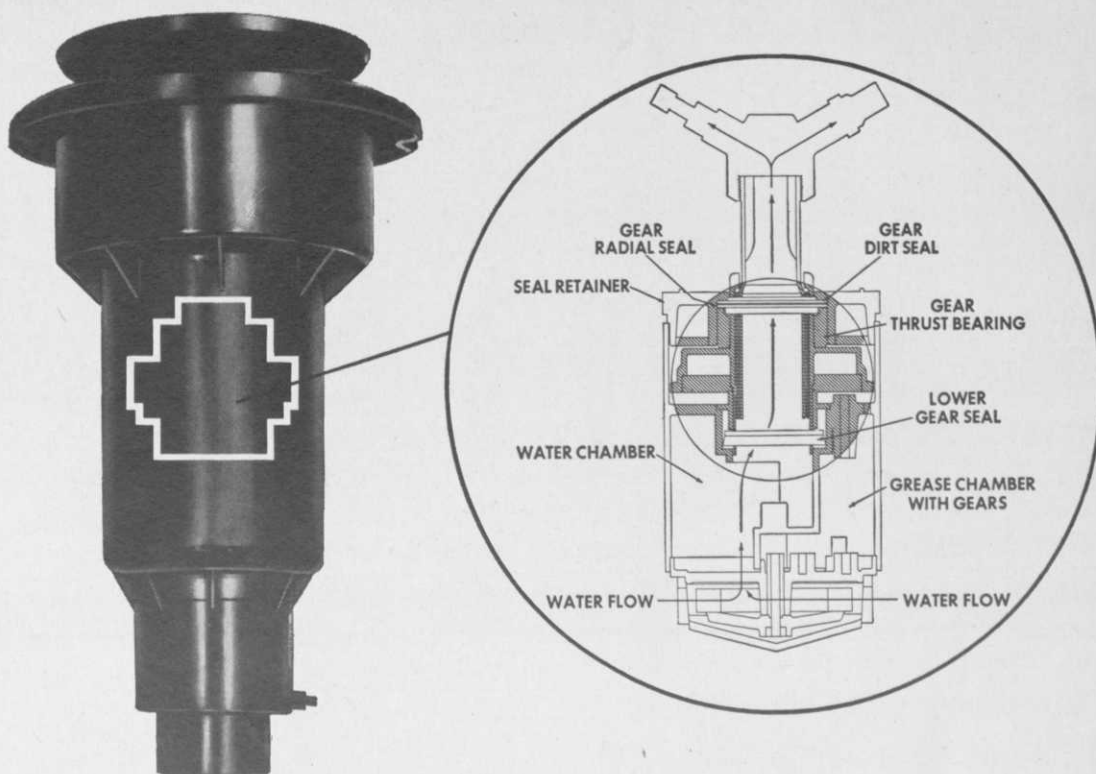
So we have an unusual stake in our automatic sprinkler line.\* It has to be better than other systems; it has to live up to the TORO reputation for quality.

We've developed a staff of the very best irrigation engineers. We've trained contractors. We've built modern factory and test facilities at Riverside, California.

**We've got a better system.**

Make us prove it. Call your nearest TORO Distributor (he's in the yellow pages) or write Jim Kaufman, Marketing Manager, TORO Manufacturing Corp., Minneapolis, Minn. 55420. He'll set up a demonstration for you.

\*We call it MOIST O'MATIC<sup>®</sup>

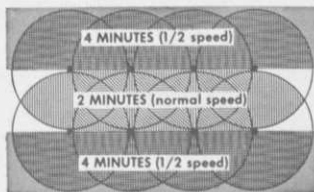


# TORO took 8 years to perfect this oil-sealed gear-drive pop-up rotary head.

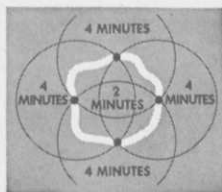
## A 30 minute demonstration will prove it was worth it.

The gear drive is the only true, continuous power source for rotation of a pop-up rotary sprinkler. Because it is a *constant* drive, you get *uniformity* of spray that "cam" and "impact" drives can't begin to match. But the problems of sand and dirt and backwash are common to all systems. Except TORO's. Our entire mechanism is specially sealed on top where it can't be touched by water, dirt or debris. We know. We torture-tested with sand tanks that pumped

100 lbs. of sand into the sprinkler every 20 minutes. Proved that our oil-seal worked. Also discovered that brass risers scratched. So we switched to super-hard DELRIN®. It took 8 years, but we learned all this and a lot more. You can learn all about it in a 30-minute demonstration. Call your nearest TORO distributor (he's in the Yellow Pages) or write Jim Kaufman, Marketing Manager, TORO Mfg. Corp., 8111 Lyndale Ave. S., Minneapolis, Minn. 55420.



Athletic Field, Park Grounds,  
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Golf Green

Another TORO exclusive—two-speed 180° pattern for pop-up sprinklers around golf green, double row fairway football field, park grounds. Nozzle rotates at normal speed on the over-lapped areas, slows down when watering bunkers or non-over lapped areas.

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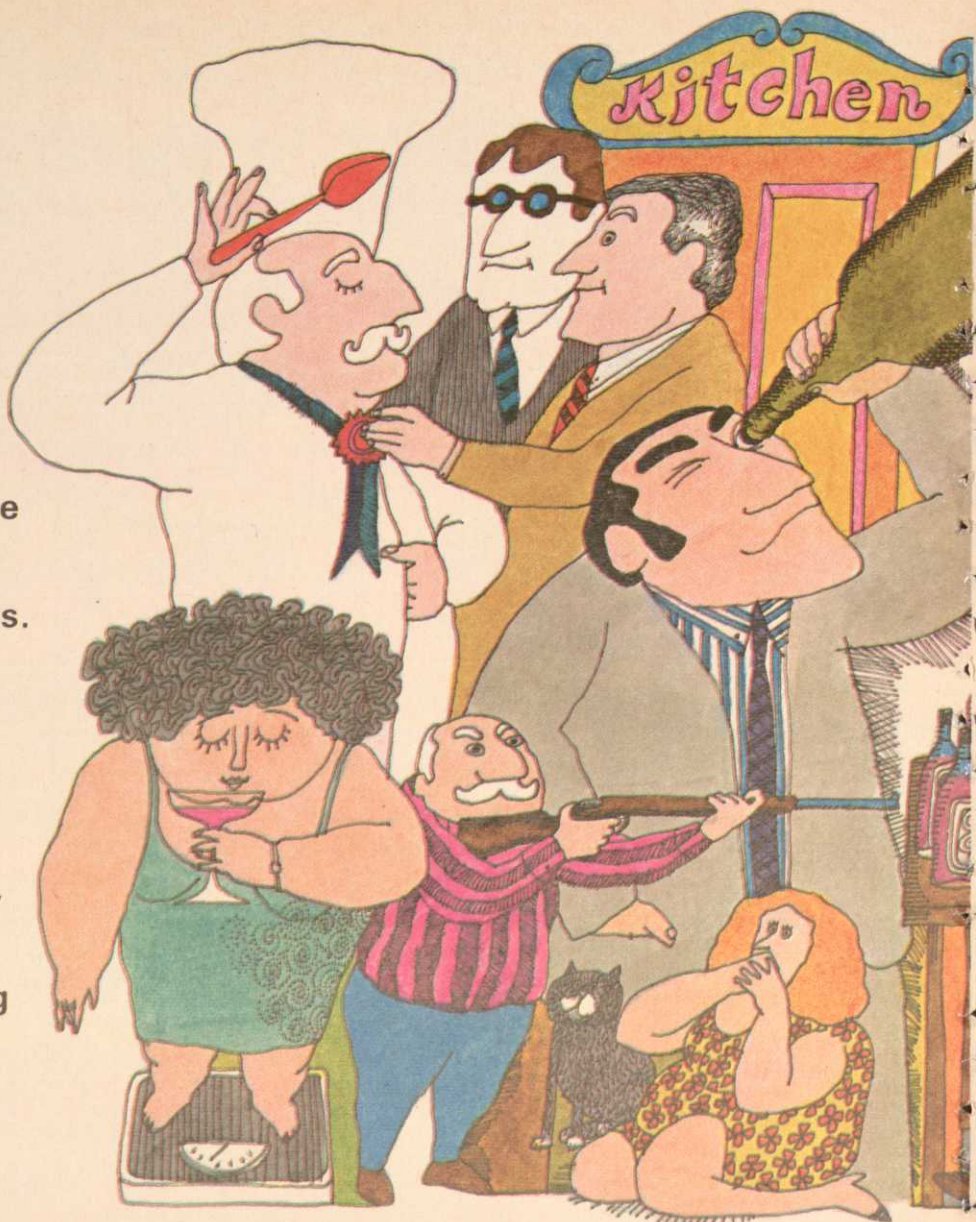
## Automatic Turf Sprinkler Systems

For more information circle number 258 on card



Food and drink  
mean to the club  
manager's revenues  
what rain and sunshine  
mean to the  
superintendent's greens.

And, if they don't,  
they should.  
The following article  
gives useful  
hints on the stocking,  
merchandising,  
promoting and pricing  
of some foods  
and wines.



# Supply lines to club profit

by William E. Massee

Editor's note: Mr. Massee is a public relations consultant and wine expert who has written several books, including "Wines and Spirits," and "Massee's Guide to Eating and Drinking in Europe."





## PRIDE SELLS

Members like to show off their clubs, boasting about the chef or barman as well as sports facilities, when possible.

The best such ploys are the silent boosters—a chef's diploma discreetly in view, a color shot of a holiday buffet or the punch bowl at a gala affair—but there are more active ways to express pride of place. A 12-bottle rack of wines on display near the dining room entrance says a lot about the quality of food and drink to be expected, and so does a small glass-door refrigerator holding chilled Champagnes and white wines. One New York club keeps a small wire basket on a display table—for the corks from emptied wine bottles. The cheery heap provides a strong buying suggestion. A spotlighted wire grill with a big padlock guards one shelf of a backbar, where precious bottles of old Cognac, Highland Malt Whiskies, old Madeira and unusual liqueurs are kept, in another club. A Vermont barman displays a glinting row of pewter mugs for his specialty, Tom and Jerry, and down in Maryland a master of the nineteenth hole keeps a bowl of fresh mint out on the long mahogany. These are those "something specials" that show just how good you are, without saying a word.

*Continued on next page*



## WINE ON THE TABLE

Americans are turning into a nation of wine drinkers. But because the fashionable custom is still so new, members need reminding. Table tents and wine lists are available from the Wine Institute, 717 Market Street, San Francisco, 94103. Importers continually provide their distributors with various items. All well and good. But still more appealing is the inclusion of a glass of wine as part of the dinner special or the offer of a glass of white, red or rose at a special price on the daily menu. Excellent, simple wines are now available from California wineries by the gallon, as well as from Portugal, Spain, Italy and France. Small carafes that hold six or eight ounces of wine and can serve two, have proved successful at holiday times or when wine sales reach a measurable daily volume. However, it is apt to fall flat if your members are not yet tuned in to the glories of the grape. An alternative, to develop interest, is to put unopened half-bottles on the tables as part of the set-up—red wines on some tables, white or rose on others—and provide at least one waiter with a corkscrew. The bottles are an invitation, and a hint from the waiter will begin to get corks pulled.

## NOBODY'S PERFECT

There's nothing as discouraging as a stock of wine that doesn't sell. Especially if there was nothing wrong with the wine and the price was right, but the people just didn't try it. The worst thing to do in such a case is to leave the bottles in the cellar, noticing them only when they appear on the inventory sheets—a constant reminder of error. The best thing to do is to give it away, for a price, if possible. Include a glass as part of a daily special, offer it by the glass at cost, use it in the bar for wine drinks, or in a party punch bowl, or for a mulled wine party. Serve it at a committee meeting. Hold a wine tasting on Ladies Day. Feature it at a special wine dinner. If you're running a club that sells no wine, it will take about three mistakes like that to turn the whole crowd into friends of Bacchus. Everybody loves good wine. You can help them find out just how much.

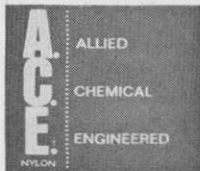
## HANDLING CHEFS

Members are apt to take chefs for granted—until something goes wrong. Menus then seem to have a tendency to degenerate to steaks and French fries, with a salad for Ladies Days. One club manager with a fine new chef took to summoning him daily to the office, at the height of the lunch hour, so that members would get a look at him in his white jacket, shiny shoes and tall white hat. Another manager makes sure that the chef comes forth from the kitchen whenever a member wants to praise a dish or plan a dinner. Chefs are supposed to hate this, but they hate lack of praise more. The best way to break in a chef is not by introducing him to staff and equipment, but by nudging senior members to praise his first few efforts. A well-praised chef may become temperamental, even conceited, but he'll cook well.

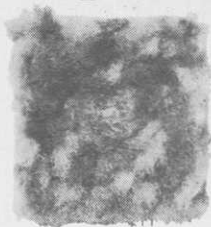
*Continued on page 30*



Our New  
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made of 100% continuous  
filament A.C.E. nylon



is so tough,  
we guarantee  
every square inch



against every  
golfer  
who walks over it.  
For Three Full Years.



**Monarch Carpet Mills**  
Chamblee, Georgia

## FORMING A WINE COMMITTEE

Every club has its wine enthusiast—a doctor or lawyer, retailer or broker. Invite him and a couple of friends to a tasting of two or three wines you may be considering, and ask for opinions. Then follow their advice. Repeat this in thirty days. You will have an amenable committee in a few weeks, each member flattered that you asked his advice. You might even consider a distaff member.

## WEIGHT-WATCHERS' DRINKS

Calories count. A thoughtful manager will feature various low-calorie drinks on his menus; clip-on cards that make the drink sound festive, with the low count printed on the bottom of the card. A glass of white wine, for instance, contains about 35 calories, certainly less than 50, while a highball or cocktail is sure to be over 100. Excellent drinks can be made with low calorie mixers. Vermouth-and-soda highballs and coolers, using a couple of ounces of red or white wine, made zesty with a lemon peel or cucumber strips, are quenching and appreciated when the calorie count is brought to the customer's attention.

## GLASSES

Conservatively, 90 per cent of all wine glasses are too small. A wine glass is half chimney, and absolutely minimum size is eight ounces. Ten-ounce glasses are better, twelve-ounce glasses are better still. Such glasses can be used for water service and should be part of the table set-up, but not filled with water until after the wine order. Safe-edge or tempered glasses reduce breakage, and large glasses reduce crowding in the dishwasher. Get a gross to start.

## WINE PRICING

A club venturing into regular wine service often charges too much for wines, charging three or four times the cost, across the board, like many restaurants. In the beginning, you might adopt a policy of making the wine pay for itself, not making money on it, but not losing any, either. Start out at twice cost, or take a flat three dollars a bottle on expensive wines. Keep prices on the low side until you build up a weekly volume, then study what your policy should be. Reasonable profit on a lot of bottles is better than no profit on none. □