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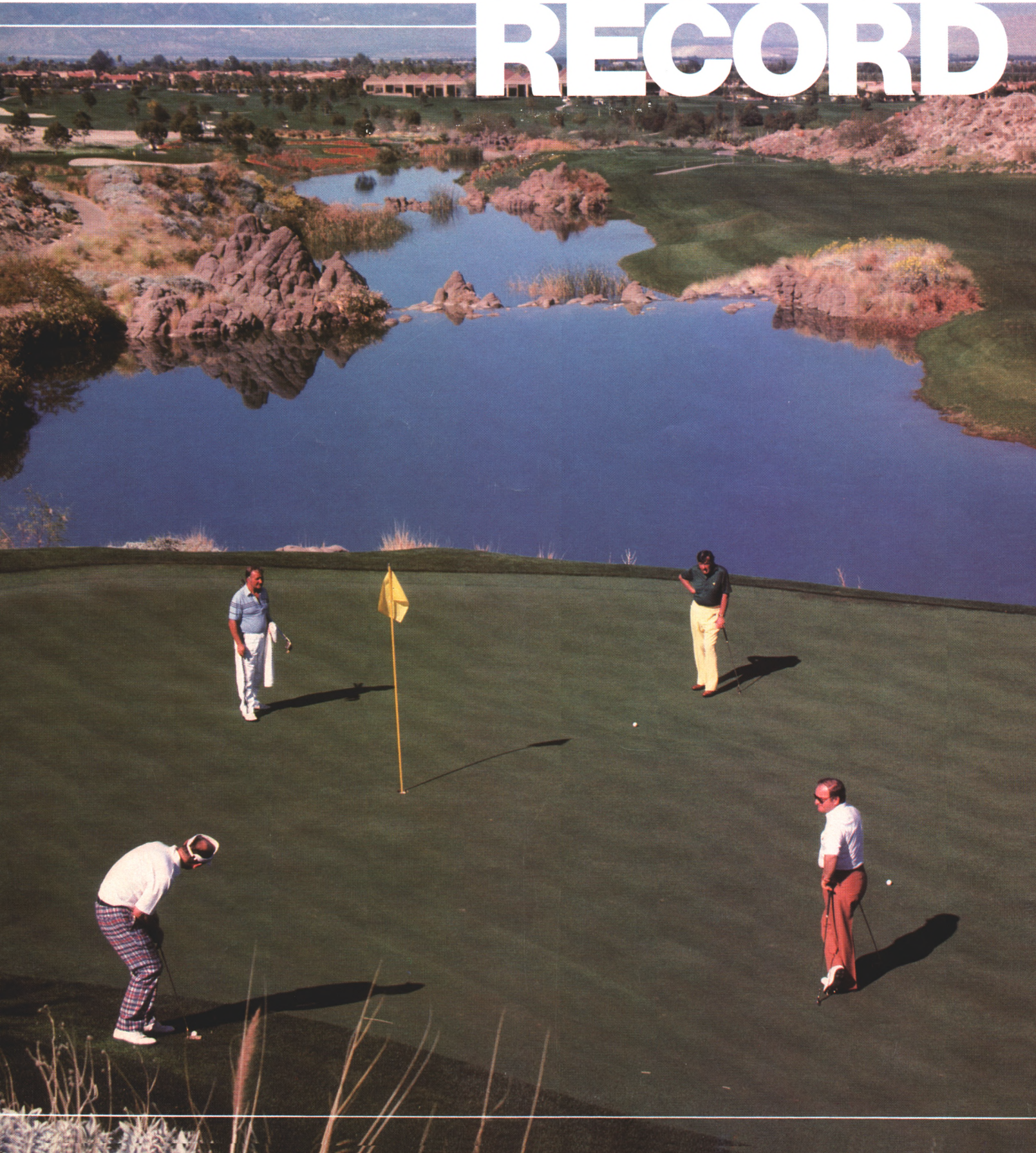

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The Vintage Club, Indian Wells, California, site of the 1985 U.S. Mid-Amateur Championship.

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The Club at Morningside, Rancho Mirage, California. A great layout, a solid maintenance program and a beautiful day will ensure rave reviews.

Who Said, "The Grass is Always Greener . . ."

by JAMES T. SNOW
Director, Northeastern Region, USGA Green Section

IT IS A LITTLE-known fact that the enlightened philosopher who once said, "the grass is always greener on the other side of the fence," was actually a widely travelled suburban golfer! In fact, according to rumor, that quote is taken from a verse he once wrote:

The grass is always greener,
the trees are always taller,
the budget is always lower,
the fairways always shorter,
the greens always faster,
and the turf is always more dense
on the other side of the fence.

Human nature, being what it is, it seems inevitable that golfers will compare one golf course to another. Golf course superintendents, aware of the burden these comparisons create, often ask what can be done to prevent them. The answer is simple: Nothing!

What *can* be done, however, is to point out variables that make fair comparisons difficult, if not impossible. For example, two theorems immediately come to mind:

No golf course is identical to any other.

No golf course will *always* be in excellent condition.

If today's golfers consider these statements, fewer repercussions would result from the inevitable comparison.

BEGIN WITH the hypothesis, "No golf course is identical to any other golf course." That every course is built on an entirely different site should make this statement obvious. Even courses that share common boundaries often contend with different conditions. Varying soil conditions, alone, usually dictate subtle differences in maintenance programs. As soil types and terrain become more divergent between one course and another, so may the maintenance practices needed to keep each course in good shape.

Poor drainage is usually a major factor in course upkeep; it affects soil compaction, turfgrass wear, and disease and results in weak turf and the need for more intensive maintenance. Naturally, drainage problems must be corrected.

On a broad scale, climate has a dramatic effect on what can be done with any maintenance program. Cries for bentgrass greens in the South and bermudagrass fairways in the North are common and require tactful handling by golf course superintendents. More realistically, growing and keeping *Poa annua* requires different techniques in every region of the country, requiring much local knowledge. Even on a local level, prevailing winds, altitude, or the presence of large bodies of water can influence the maintenance of one golf course differently from one just a few miles away.

The methods used in building a golf course also affect maintenance programs. Newer courses often suffer from poor site selection with little topsoil, but benefit from having large greens and tees built to modern specifications. Older courses were often built on better sites, but they suffer from small greens and tees not designed for today's amount of play. In between there is probably every combination of good and bad.

Finally, there is the actual layout of the golf course. Almost any course would pale in comparison with Pebble Beach,

Winged Foot, or Augusta National, regardless of the quality of the maintenance program. When a golfer says, "Why can't our greens and fairways be like those at Ultimate Links Golf Course," chances are he's more infatuated with the layout or site than the conditions of greens and fairways. And any golfer who plays a course for the first time is likely to give that course the benefit of the doubt as far as maintenance is concerned, thus invalidating many comparisons.

NOT ALL GOLF courses are maintained equally. Some are obviously kept in better condition and this reflects the resources of the club and the tools available to the superintendent. When blessed with decent site conditions and good drainage, a superintendent can expect success with a maintenance program if he has a good irrigation system, an adequate supply of equipment and labor, and a sufficient operating budget. Without these essential tools, little consistency can be expected.

Few golfers appreciate the need for a good automatic irrigation system. The ability to apply water when and where it is needed and in the quantities desired is essential, especially as cutting heights inch fractionally downwards. Outdated manual systems make it very difficult to syringe during stressful weather and usually result in overwatering low areas or underwatering the high spots. Too many superintendents are forced to make the best of a bad situation by having to irrigate with an inadequate water supply, a weak pumphouse and poor pressure, weak or corroded pipe, or worn heads and poor coverage. Some are still dragging hoses and sprinklers to irrigate their greens and tees. Is it any wonder that these courses suffer in comparison to others?

The need for an adequate equipment inventory and labor supply is probably more obvious to most golfers, although they usually have no idea of how much is involved. Every course should establish a good program for replacing old equipment and acquiring new pieces on a timely basis. The number of workers will dictate the extent to which maintenance programs can be followed and grooming items can be carried out.

Finally, the superintendent must be provided with a reasonable operating budget if he is to bring out the best in the golf course. Determining the actual figure required for a good budget is a real task. Due in part to some of the variables already discussed, a reasonable budget for one course might not be adequate for another. One thing is for sure . . . trying to compare one budget to another by looking only at the bottom line is misleading. Many maintenance budgets in-

(Below) Attention to detail takes extra time, but reflects well on the maintenance program. Oak Hill Country Club, New York.

(Bottom) Even the best maintenance programs occasionally suffer unavoidable setbacks, in this instance from winter ice damage.

clude such odd items as golf cart repair, score cards and pencils, golf shop electricity, property taxes, etc. Be sure to compare apples to apples and oranges to oranges if you must compare at all.

OTHER ITEMS affect turf quality and influence subsequent comparisons.

The species and varieties of grasses represent one such category. For example, on fairways in northern climates one will find bentgrass, perennial ryegrass, Kentucky bluegrass and/or annual bluegrass on a particular course. Each requires specialized treatment with respect to fertilization, pest control, cultivation, overseeding, irrigation, and cutting height. The cost of maintaining each species will be different, and their playing characteristics can vary widely, depending on the weather and the season.

Another of the intangibles is the presence or absence of trees. Most people consider trees only as items of beauty or hazards to avoid during play; few appreciate their effects on turf and the maintenance of the course. Too many trees in the wrong places, common on many courses, can shade the turf, block air movement, and produce surface roots that affect playability and compete with the turf for water and nutrients. It is time-consuming to mow around trees, their roots frequently plug up drain lines, and leaf removal in the fall can be a major and costly budget item. Finally, the trees themselves often require routine irrigation, fertilization, pest control, and pruning.

The extent to which golf carts are used also contributes to appearance and condition. The club policy with respect to cart path construction, the use of carts on fairways, allowing carts out during wet weather or when the turf is dormant, and the number of cart rounds per year will affect the health of the turf and the maintenance program.

The amount of play is another consideration. Small, soil-based greens and tees are especially vulnerable to the effects of heavy play, although any course that experiences many rounds of golf is likely to require more intensive maintenance and a larger budget than a comparable course with less play. The amount of play during the winter, when the turf is dormant, is often as important as the play the course receives during the entire growing season. Heavy winter play can be devastating and should be avoided whenever possible.

The demands of the golfers themselves and the standards they set for the course are other intangibles. Demands for lush green grass, short roughs, and soft greens will produce a different golf course and leave a different impression than if the members desire firm, closely cut fairways, U.S. Open rough, and firm, fast greens. Other variables include demands for fairway contouring, immaculate manicuring, flower beds, water coolers by every tee, and tree planting.

Growing grass on this rocky fairway is second in difficulty only to installing an irrigation system through it. Not all courses are blessed with ideal site conditions.

NOW FOR THE second of the two original hypotheses that, "No golf course will *always* be in excellent condition."

Most unfair comparisons are the result of a golfer's very heavy exposure to his home course and very limited exposure to the other course. If a golfer plays his home course often enough, he is bound to see it at some time in poor condition, if for no other reason than the weather. Flooding, winter damage, wind storms, or an irrigation breakdown during 100-degree weather will happen to every golf course. However, if he plays Ultimate Links Golf Course once a year, in late September, it may indeed always seem to be in great shape.

This was brought to light recently during a visit to Deadly Fast Country Club, when the Green Chairman asked, "Why can't our greens be as fast as those at Just-As-Fast Country Club." On a subsequent visit to Just-As-Fast Country Club,

their Green Chairman asked, "Why can't our greens be as fast as those at Deadly Fast Country Club?" In following up on this strange turn of events, it seems that each Green Chairman had played the other's course on member-guest weekend. Not surprisingly, each superintendent had done a yeoman's job of grooming his course and double cutting greens prior to the event.

The other story, which is familiar to every golf course superintendent, concerns television golf. All that need happen is for television cameras to focus on Augusta National on a spectacular spring weekend, and practically every superintendent will head for the nearest hideaway for the next several weeks, hoping to avoid the inevitable question, "Why can't our golf course . . . ."

Week after week, the television viewer is treated to beautiful, usually high-budget golf courses that are groomed for their one big event of the year. The problem is that the viewers don't see the same course each week. They see only the course that has peaked, much as Deadly Fast Country Club does for its member-guest, for television, and an important professional tournament during a single week of the year. The members at these clubs know that the course does not look and play the same way throughout the season. Any living entity, whether it be a football quarterback, a race horse, or turf on a golf course, cannot be expected to perform as precisely and predictably as a machine. Each will have its good days and its bad, and each will peak at certain times.

(Below) Hot weather, cart traffic and a poor irrigation system can thwart even the best intentions.

(Bottom) Trees can be great, but their effects on nearby turf and their need for maintenance can substantially affect the budget and the condition of the course.

THE ONE IMPORTANT secret ingredient missing from this discussion thus far is the golf course superintendent. Superintendents are only human and as variable as the golf courses they manage. Each has his special strengths and weaknesses, and some are more suited to certain types of courses than to others. As a group, however, they represent a dedicated, professional company. When golfers compare courses, they often state it in such a way as to suggest that there is some human failing on the part of the superintendent that should be blamed. As we are all human and capable of mistakes or misjudgements, this could be true. However, it is probably apparent from this review that many other factors play a role in any problems or concerns being experienced on a particular course.

Thus, when golfers get the urge to criticize their course or compare it to another, they should first stop and think about the site, the tools, and the intangibles that so greatly influence the way any course can be maintained. After considering these elements, they then might conclude that the grass is actually greener on *their* side of the fence.

The winter of 1983-84 took a heavy toll of bermudagrass greens throughout the South and Southwest.

Bent or Bermuda Greens? A Tough Decision for the Southern Superintendent

by JAMES FRANCIS MOORE
Director, Mid-Continent Region, USGA Green Section

WHEN YOU TALK about golf course turf throughout the South and Southwest, you're usually talking about bermudagrass. While most courses there depend on this warm-season perennial from tee to green, more and more superintendents discuss a vastly different grass for greens, collars, and even other areas — bentgrass!

Bentgrass is not a new idea for Southern courses. It has been successfully grown for many years in certain areas, but the choice between bermudagrass or bentgrass has recently become a serious issue over a wide geographic range. What has prompted such a radical change in thinking? Why are superintendents from Amarillo to Louisville considering an alternative grass species where once bermudagrass was king?

Two major factors have caused turf managers to consider such a change. The first is the golfer and his demands, the second is the unpredictable weather.

Players today demand putting surfaces that are not only firm and true, but also fast. Speed of greens, the most often discussed agronomic factor of the golf course, has caused a major change in the maintenance of bermudagrass greens. Not long ago, cutting heights of 1/4-inch on bermudagrass greens provided a surface satisfactory to the golfing public, but as the desire for faster and faster putting surfaces increased, the height of cut decreased. Today, 3/16-inch is generally considered to be high; some superintendents regularly cut as low as 1/8-inch. Under this type of cultural program, bermudagrass superintendents can provide a putting surface that rivals bentgrass greens. However, the winter of 1983-84 proved there is a heavy price to pay for mowing bermudagrass so low in many areas of the South.

THROUGHOUT MUCH of north Texas, for example, including the Dallas-Ft. Worth area, one can find both bentgrass and bermudagrass greens; or at least you could before last winter. A prolonged siege of freezing temperatures devastated the bermudagrass greens. The 296 hours of continuous freezing temperatures took a heavy toll. Jere Mills, director of golf for the city of Dallas, oversaw the replanting of 91 of the city's 114 bermudagrass greens that make up the municipal golf courses. Quenton Johnson, superintendent of Brookhaven Country Club, in Dallas, saw all 58 of his bermudagrass greens, which had survived the previous 27 Texas winters, succumb to low-temperature kill. Jon Anderson, superintendent of Bear Creek, a 36-hole facility located at Dallas-Ft. Worth airport, sodded nine greens and replanted all 36 bermudagrass greens to bentgrass last fall.

Some bermudagrass greens were reestablished by sprigging.

No one escaped injury; regardless of the club's budget or the superintendent's expertise, bermudagrass greens suffered tremendously from the cold. On course after course in the spring of '84, one could find the dead greens surrounded by healthy, vigorously growing bermudagrass collars — collars that had been maintained at 1/4-inch or higher. Superintendents throughout the South reported the same problems, and they almost unanimously agreed that the lower the cutting height, the less chance for survival.

Many clubs faced with replanting chose to make the most of a bad situation. Those that chose to replant to bermuda saw an opportunity to first fumigate and rid their greens of goosegrass, *Poa annua* and other pests. Other clubs felt the time was right to make the conversion to bentgrass.

The clubs that chose to convert greens from bermudagrass to bentgrass faced a number of other difficult decisions. For the superintendent, it meant developing and instigating a radically different maintenance program. Walking greens mowers, new disease pressures and the resulting increase in the budget for chemicals, and a greater dependency than ever before on the irrigation system were just a few of the changes he had to make. The club membership would not only have to be willing to accept increases in maintenance expenditures, they would also have to adjust to certain changes on the golf course itself, such as frequent syringing of the greens during the long hot summer.

The most difficult decision, however, was what to do about the immediate problem of the dead greens. Some clubs chose to nurse what little of the cool-season, overseeded grasses that survived the winter through the summer and into the fall. They would then plant the greens to bentgrass. Other clubs, not willing to accept a poor-quality putting surface through the 1984 season, chose to pay the price of replanting the greens with bermudagrass early in the summer. They then would fumigate this new bermuda and replace it with bentgrass in the fall. Either choice required patience and understanding on behalf of the superintendent and every member.

BENTGRASS PUTTING greens in the South and Southwest require not only a progressive golf course superintendent but also an understanding club membership. In the past, the Southern golf course superintendent had to rely, in large measure, on bentgrass information, research, and cultural practices adapted from his northern counterpart and northern research stations. This information had to be readjusted to fit his circumstances.

In 1981, a Texas group of concerned club officials and golf course superintendents recognized the need for practical bentgrass research to be carried out under their conditions to give the superintendent the new tools he needed. Thus was formed Bentgrass Incorporated. The organization's first fund-raising golf tournament was held at Colonial Golf and Country Club, in Ft. Worth, Texas. The teams were composed of club presidents, golf professionals, green committee chairmen, and golf course superintendents from bentgrass courses around the state. This initial effort by Bentgrass Incorporated raised $16,000 for research. In subsequent years, as the number of Texas clubs wanting bentgrass greens increased, Bentgrass Inc. grew.

Today, at the Texas A&M University Research and Extension Center in Dallas, research is being conducted on a bentgrass putting green that was built with the funds raised by Bentgrass Inc. The group is currently supporting research concerning various topdressing rates for bentgrass greens under Southern conditions. In addition to the funds provided, local superintendents and their crews contribute their time and effort to help maintain this bentgrass research green. Paul Cato, Jr., President of Bentgrass Inc. and a USGA Green Section Committeeman from Ft. Worth, points out that the goal of Bentgrass Inc. is not financial gain or notoriety, but "simply to provide the superintendent with the information he needs to do his job better."

BENTGRASS GREENS may not be for everyone in the South. Many of our courses must still deal with heavy traffic, small or improperly constructed greens, and severe climatic restrictions. These courses will continue to rely on bermudagrass because it has served them well for many years. But thanks to research sponsored by groups like Bentgrass Inc. and the USGA Green Section, along with the technical breakthroughs by agricultural industry, the Southern golf course superintendent now has increasing opportunities to select from more than one grass species for putting green use and will have even more choices for fairways, tees, and roughs in the future.

What to Do with Bunker Rakes?

by DR. M. H. VEAL, JR., Superintendent,
Ranchland Hills Country Club, Midland, Texas

IN A WAY, the bunker rake is one of our most inefficient instruments. It is frequently in the way of golf course maintenance operations and rarely, it seems, near enough for a golfer to use it when his ball is in the bunker. By its presence, it adds to the problems and costs of mowing, and yet it is not heavily used for its purpose.

At Ranchland Hills Country Club, in Midland, Texas, we developed an idea. In fact, when Douglas Hawes, of the USGA Green Section, visited our course last year, he saw our unusual "Golden Ts" painted on the banks of our bunkers. He wondered what they were all about and, when he heard the story, encouraged this writing.

To explain the "Golden Ts," I took him to the golf shop and asked him to read the following letter on the bulletin board:

Dear Member:

Have you ever wondered where you should put a bunker rake when you have finished raking your footprints? Well, maybe these pictures will answer the question. In *Picture #1* you see how the rakes all managed to end up in one corner of the bunker but scattered all around. Some are in the sand, some on the fringe of the green, some standing or in the fairway upside down.

Maybe we here at Ranchland Hills Country Club can show the golfing world how to do it. First of all, *Picture #1* looks bad. It isn't very convenient to the next player, and it can be very expensive to the club operation. For instance, the man raking this bunker with a power rake has to stop, get off the machine, and move one or more rakes before he can complete his job. The same is true for the man who mows the roughs, likewise the fairway and fringe mowermen. Multiply this by 47 bunkers and you can readily see how much time is wasted in manhours.

Now, as in *Picture #2,* all rakes are placed in the slope of the grass, tines down, parallel with the edge of the sand — not in the sand, not in the rough or fairway or fringe of the green. They are very convenient to any player in any part of the bunker. Our desert bunkers have a deep, steep berm of grass all around them. It provides a perfect place for the rakes. If each player would use the rake nearest his ball and return the rake to the exact place he found it, our bunkers would always look neat, and the rakes would be convenient to all players. Also, the rakes will not be broken or run over by golf carts or mowing equipment. No player ever moves the tee markers. The flagsticks are always placed back in the hole after putting out. Why not treat our rakes in the same manner? Let's all try this and maybe we will be followed by golfers all around the world!

Thank you.

M. H. Veal
Ranchland Hills Country Club
Golf Course Superintendent

P.S. Check with the golf professional for Rules governing your lie if your ball comes to rest against a rake.

We have had great success with this approach. As you will note in *Picture #2*, golfers are making a good effort here to replace the rakes near the gold painted rake outline. "The Golden Ts" have served as reminders and guides. They have worked very well for us during everyday play at Ranchland Hills.

Editors Note:
For tournaments and as a general policy, the USGA recommends that bunker rakes be placed outside the bunker, lying flat and to the rear of the bunker (or in a position least likely to affect play).

Picture #1. Everyone has a different idea where the rake should be placed.

Picture #2. The "Golden Ts."

Turfgrass Competition: It's A Jungle Out There!

by A. Douglas Brede
Assistant Professor, Oklahoma State University

BOB SCHULTZ just seeded three new fairways with a mixture of Kentucky bluegrass and perennial ryegrass. His green committee had requested a 50:50 mix of the two grasses on these fairways, so Bob put 50 pounds of bluegrass seed and 50 pounds of ryegrass seed into the spreader. But now that the grass is up and growing, there is hardly a shoot of bluegrass to be found. What happened to the bluegrass?

Across town, Greg Wallace is engaged in his fourth attempt to overseed his *Poa annua* fairways with a more desirable grass. Greg had tried several bentgrasses in the past, but every time he overseeded he ended up with more *Poa* than before he started. This time, Greg is trying an improved perennial ryegrass variety. As time passes, he sees *Poa* in his fairways give way to the ryegrass. Why did the ryegrass work when other grasses wouldn't?

Last year Ed Barrett decided to renovate his No. 1 fairway, which was heavily infested with *Poa*. He killed off the turf with glyphosate, grooved it with a vertical mower, and seeded it to a blend of Kentucky bluegrasses. This year the *Poa* is back — not as plentiful as before, but increasing in strength each month.

Bob, Greg, and Ed share a common problem: They're having trouble establishing the grass they want because of unseen problems with grass competition. Competition among grasses may seem a bit abstract. We're all familiar with how people compete: one person runs faster, jumps higher, or shoots a lower golf score than another. In the business world, they say, "It's a jungle out there!" But how do plants compete? And what can we do to swing the competition in our favor?

ALL LIVING BEINGS require three basic things in order to survive: food to eat, air to breath, and a means of getting rid of waste products. Grass plants are no exception. Plants get their food from sunlight, carbon dioxide, water, and soil minerals. A plant that can get more sunlight, moisture, or nutrients than its neighbors is said to be highly competitive. Certain grass species are more competitive than others. These differences among species are most pronounced during seedling development.

Waste products can also be limiting factors to grass growth. Thatch is a waste product that can accumulate and affect the health of the turf. Some plants also excrete invisible chemical wastes. For example, perennial dropseedgrass, a Southern turf weed, gives off certain chemicals that can stunt the growth of bermudagrass and buffalograss. This phenomenon of natural herbicides is called allelopathy.

But first, let's deal with some of the physical aspects of competition.

Figure 1. When seeded side by side, perennial ryegrass is dominant, Poa annua *is a close second, and the Kentucky bluegrass is a distant third.*

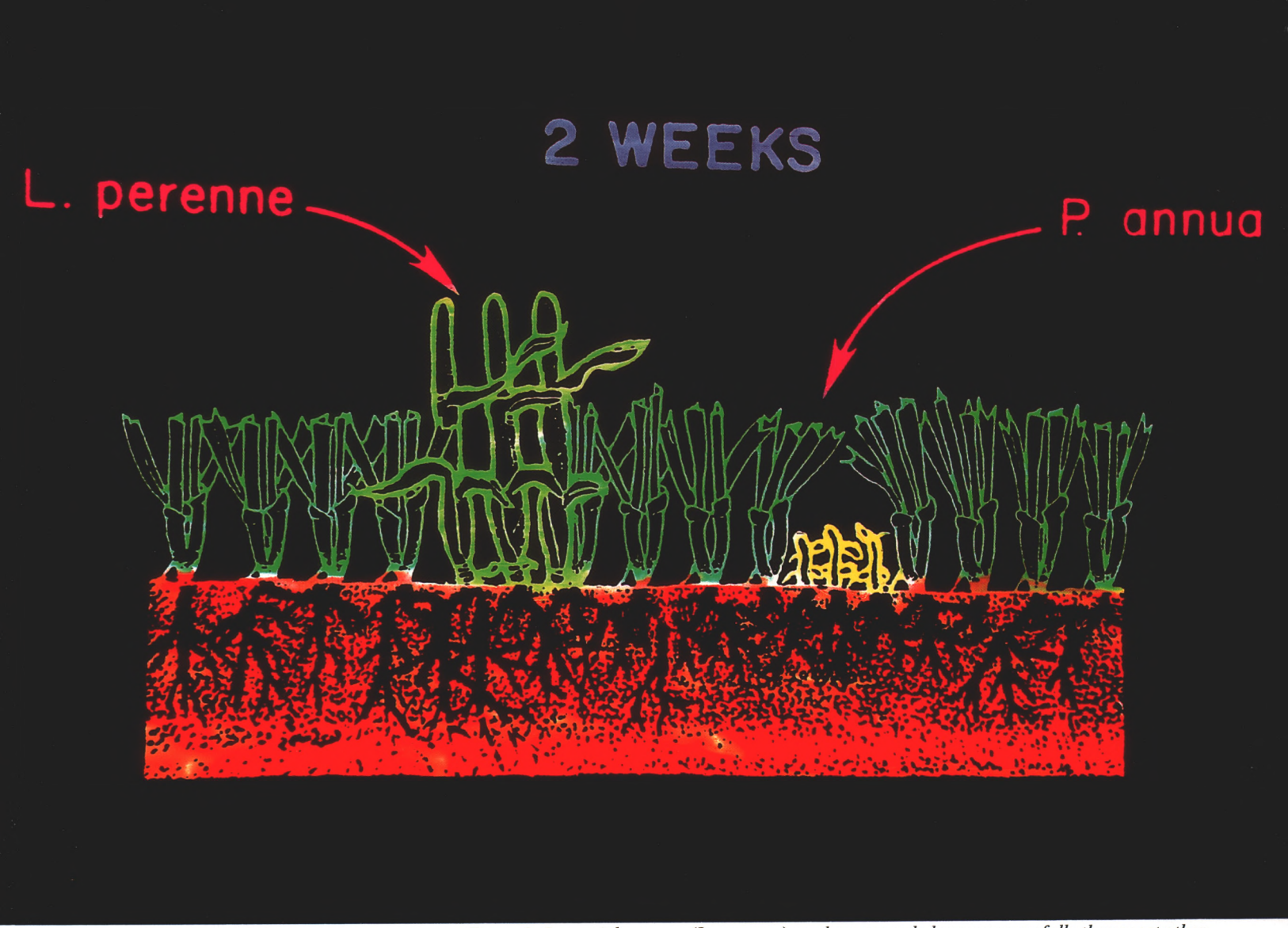

Figure 2. Perennial ryegrass (L. perenne) *can be overseeded more successfully than most other grasses. On several occasions, ryegrass seedlings were seen protruding above the leaves of the sod.* Poa annua *seedlings were tiny, yet some remained alive for several weeks.*

KENTUCKY BLUEGRASS, perennial ryegrass, and *Poa* have quite different seed sizes. Ryegrass has relatively large seeds — about 280,000 seeds per pound — whereas Kentucky bluegrass and *Poa* have much smaller seeds — 1-2 million seeds per pound. Remember, the larger the seed, the fewer number of seeds per pound. A mixture of one pound of bluegrass with one pound of ryegrass would contain roughly 15 percent ryegrass, by actual seed numbers.

Large seeds contain large amounts of stored energy. Ryegrass, with its large seeds, is a demon in the seedbed. When ryegrass, Kentucky bluegrass, and *Poa* are planted side-by-side at the same time, the ryegrass is the clear winner *(Figure 1). Poa,* however, is not far behind. *Poa's* seedling vigor is not due to its seed size, which is actually quite small, but to a high rate of seedling growth. Two British scientists once surveyed 123 species of plants and weeds and found that *Poa annua* had the highest seedling growth rate of them all. Ryegrass gets ahead of *Poa* though, because of a slightly faster start.

Ryegrass, bluegrass, and *Poa* also differ in the field survival of their seed. Field survival is an estimate of the percentage of seed germination under field growing conditions. *Poa* and ryegrass have a field survival value of about 75 percent; Kentucky bluegrass averages only 45 percent.

OVERSEEDING is truly the acid test for any grass species. An actively growing sod hardly presents an ideal environment for a young plant. Compared to the stout, hardy plants of established turf, seedlings possess a meager root system and a tiny amount of foliage. It's no wonder that many overseeding attempts are unsuccessful.

We studied the competition involved in overseeding by punching aerifier-style holes in established turf, filling the holes with soil, and planting seeds on top. We tested three different sods and three species of seeds, representing ryegrass, bluegrass, and *Poa.* Surprisingly, the same number of seedlings emerged in the sod as in a fallow seedbed nearby. The difference appeared several days later. As time passed, the sod-sown grasses began to wither and die. By six weeks, only 25 percent of the original bluegrass and *Poa* seedlings remained alive. Perennial ryegrass was the exception. More than 60 percent of the ryegrass seedlings were still actively growing after six weeks.

On several occasions, we saw blades of the young ryegrass plants protruding ¾-inch above the foliage of the sod *(Figure 2)*. Evidently the ryegrass was able to break through the dark umbrella of neighboring leaves to bask in the energy-rich sunlight. This probably made the difference between life and death for the ryegrass.

We followed the life of the *Poa* seedlings until the sod had enveloped them. It's uncertain how long these remaining *Poa* plants survived. Perhaps they were maintaining a minimal existence, waiting for an opportunity, such as a divot or a management mistake, to continue their development.

DO PLANTS CONTROL each other with toxic chemicals? Hundreds of research experiments show that all plants contain toxic chemicals in varying amounts, and some plants, through excretion or death and decay, release these toxins into the environment. The next question is whether turfgrasses fit into the toxic category.

To test this idea, we germinated *Poa* seeds on a damp paper blotter. Then, we interspersed seeds of Kentucky bluegrass along with the *Poa* seedlings. Germination and growth of the bluegrass was reduced by having had *Poa* in close proximity.

We took this test one step further. We germinated and grew *Poa* on a blotter, dried out the blotter, scraped off the *Poa* and then germinated bluegrass on it. Again, the bluegrass was stunted — this time, the bluegrass was affected by chemicals that were indirectly transferred by way of the blotter. The same type of situation could occur in the field. Thatch could conceivably act as a blotter, holding toxins in place until they are absorbed by other plants.

Finally, we took this idea to the field *(Figure 4)*. We built a large underground framework, lined it with plastic, and filled it with sand. We then established grasses so that water would flow through the rootzone of one species, downhill to the rootzone of another, carrying with it any toxic chemicals. We monitored the growth of these grasses over a two-year period. The results were subtle, yet significant. Kentucky bluegrass plots that received fluids from *Poa* had slightly less ground coverage during establishment, fewer large shoots, and decreased thatch development. All combinations of the three species were examined. When it was exposed to the fluids from Kentucky bluegrass, ryegrass experienced increases in rust, red thread, and Pythium blight diseases. And *Poa* had reduced root tissue weight and spring greening when it was exposed to ryegrass fluids.

BOB SCHULTZ, Greg Wallace, and Ed Barrett all had trouble with grass competition problems. Bob's ryegrass-bluegrass planting would have yielded a balanced mixture if he'd adjusted for the competitive nature of ryegrass seedlings. A mix containing 75 to 95 percent bluegrass (5 to 25 percent ryegrass), by weight, is needed to produce a 50:50 mixture of these two grasses.

Greg's overseeding attempts were unsuccessful until he tried ryegrass. Perennial ryegrass is one of the few grasses with seedlings that are vigorous enough to take on established plants. Generally, the larger the seed, the easier it is to overseed. When overseeding with a small-seeded species, such as bentgrass, to give the new grass plants a chance to take hold, try to weaken or kill the existing vegetation before planting.

Ed Barrett had a problem with *Poa annua* moving back into his new bluegrass stand. *Poa* seed is usually quite plentiful in most golf-course soils, and when that *Poa* germinates, it can outgrow Kentucky bluegrass. It's also possible that plant toxins may be giving *Poa* the edge it needs to win.

What can be done to counteract *Poa's* poison? Well, that's the subject of our research project.

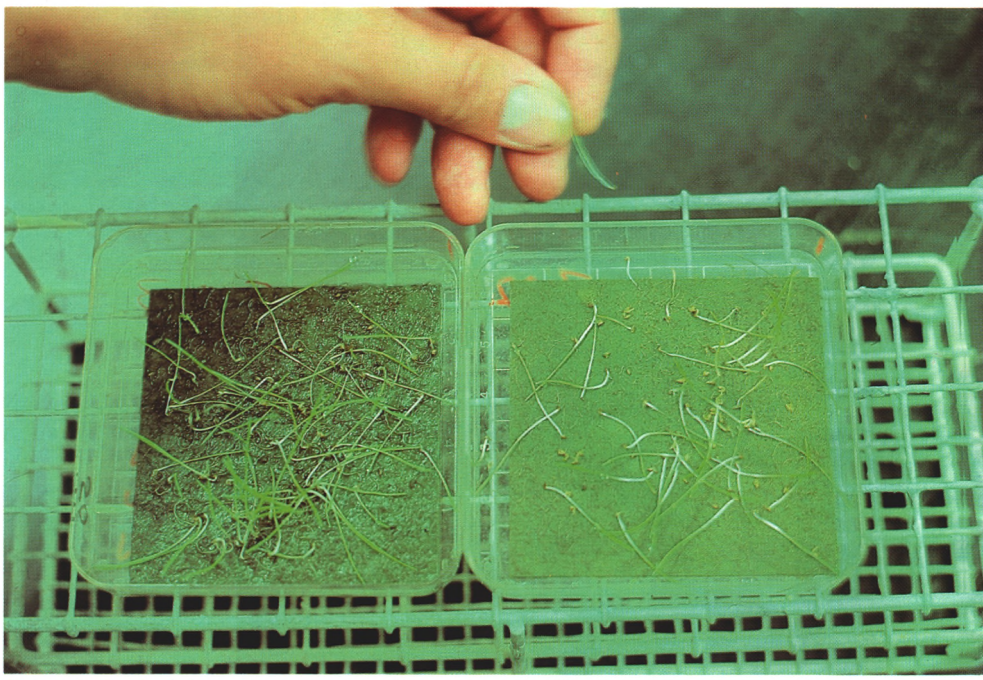

Figure 3. On the left are Poa annua *seedlings grown on a blotter where Kentucky bluegrass once grew. On the right is* Poa *growing where other* Poa *had been. The plants on the right were spindly and almost without roots, evidently stunted by toxins released from the earlier seedlings.*

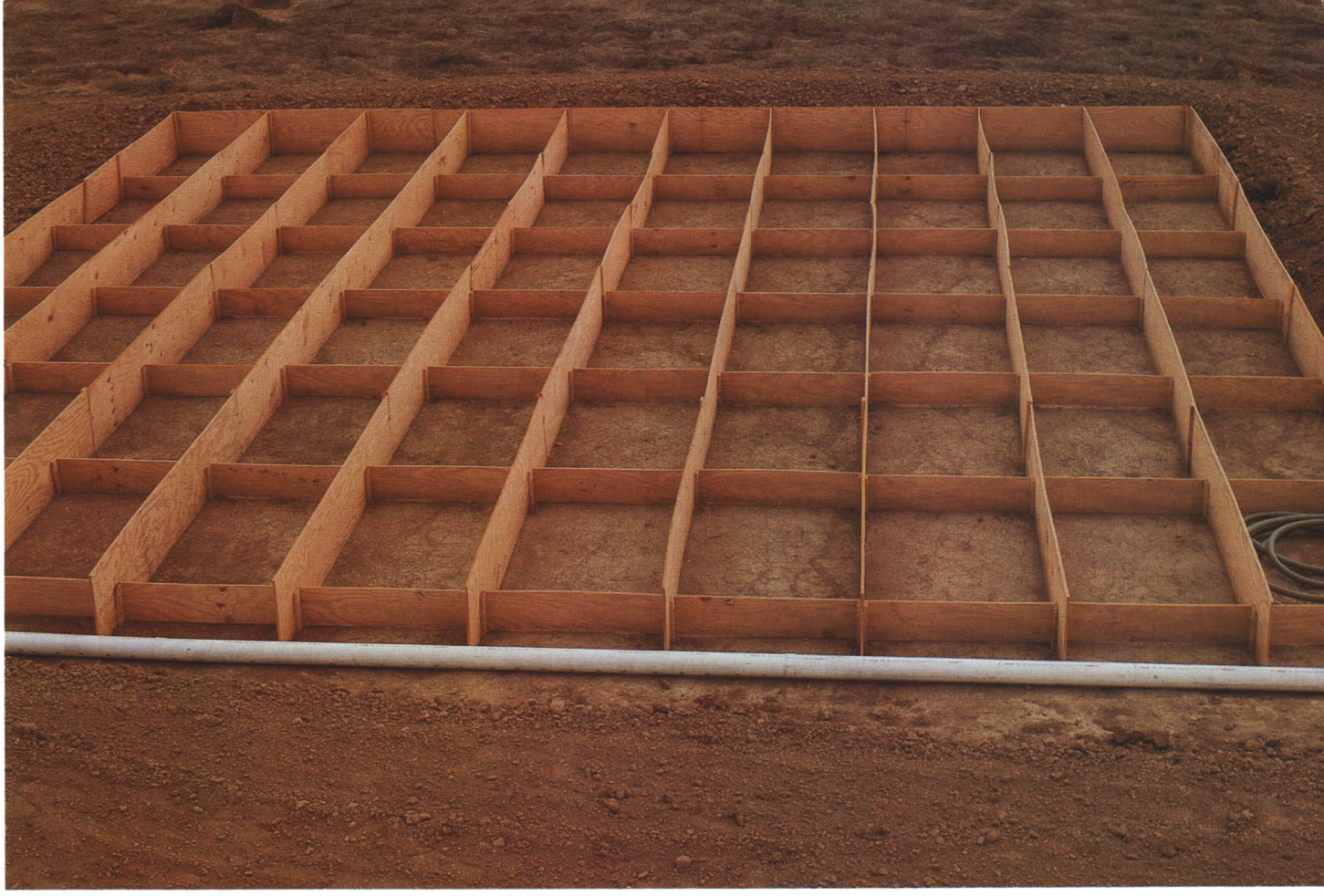

Figure 4. Construction of an outdoor system for testing turfgrass for allelopathy (plant toxins). The underground wooden framework was covered with plastic, filled with sand, and planted to Kentucky bluegrass, perennial ryegrass, and Poa annua, *with the resulting grass cover.*

News Notes for Mid-Winter

Steve Batten Resigns/Gary Watschke Appointed Northeastern Agronomist/ Realignment of Some Green Section Regions

Steve M. Batten, Southeastern Green Section Agronomist since 1982, announced his resignation on December 31, 1984, to enter private consultation. Steve's work was largely in Florida, although his reputation as an artist and illustrator of turfgrass books and magazines is nationwide.

Gary A. Watschke, manager of golf operations and superintendent at the Iowa State University golf course for the past nine years, has accepted appointment as Northeastern Agronomist for the Green Section, effective December 10, 1984. He will assist Jim Snow, Regional Director, and Karl Olson. Gary was an instructor of turfgrass management at Catawba Valley Technical College, North Carolina, for over three years, and earlier served in positions ranging from laborer to assistant superintendent at other golf courses for more than 17 years. He is a graduate of Iowa State University, a member of the GCSAA, an author, and has owned and operated his own business since 1980. In addition to his work in the Northeastern Region, he will assist in other Green Section Regions.

A Realignment of Some States in some Green Section Regions in 1985 is planned to improve the Turf Advisory Service and travel efficiency. For example, **Montana, Wyoming, North Dakota,** and **South Dakota** will return to service from the Great Lakes Regional office under James M. Latham, Jr., Regional Director, 4680 West Bradley Road, Suite 2, Brown Deer, Wisconsin 53223, (414) 354-2203.

Arkansas and **Louisiana** will now be served by James F. Moore, Mid-Continent Regional Director, 300 Sharron Drive, Waco, Texas 76710 (817-776-0765).

Ohio and **Kentucky** will continue to be served by Stanley J. Zontek, Mid-Atlantic Regional Director, and Patrick M. O'Brien, Agronomist from the Mid-Atlantic Region. O'Brien will also assist Bud White, Southeastern Regional Director, with TAS visits in **North Carolina, South Carolina,** and **Tennessee. Florida** subscribers will be served by White.

These changes will permit greater response from and access to Regional Green Section offices by TAS subscribers. They are part of a continuing effort to improve the Turf Advisory Service and direct assistance to all subscribing clubs.

Fifth International Turfgrass Research Conference

An exceptional opportunity awaits those planning to attend the Fifth International Turfgrass Research Conference from June 30 through July 5, 1985. It will take place in Avignon, France, and is under the direction of Dr. Paul Mansat, President of the International Turfgrass Society, Lusignan, France.

The Conference is conducted primarily for turfgrass scientists engaged in research or education, but it is open to anyone involved in turf use or management. The main objective is to bring those involved in turfgrass research and education together from throughout the world for an exchange of information and ideas. Representatives from at least 20 countries are expected to participate, and more than 100 papers will be presented in oral and poster sessions.

Gary A. Watschke

Pre- and post-Conference tours are planned to provide participants the opportunity to observe turfgrasses in the Mediterranean area of Italy and France.

For further details, write to Dr. John F. Shoulders, Society Secretary, Agronomy Department, VPI, Blacksburg, VA 24061.

Won't You Join Us (TAS) in 1985?

A new year of high-tech turfgrass management is just ahead! In many cases one small bit of new information given by the visiting Green Section agronomist has saved clubs many times the actual cost of the Green Section Turfgrass Advisory Service. More important, however, is the significant improvement in golfing turf and playing conditions one might expect from such consultation. No small part of this is the authoritative backing and second opinion the agronomist provides your turf management operations.

The fee schedule for TAS visits in 1985 is as follows:

Half-day visit:
$500 if paid on or before April 15;
$550 if paid after April 15.

Full-day visit:
$800 if paid on or before April 15;
$850 if paid after April 15.

For less than one quarter of 1 percent of most golf course maintenance budgets your club will receive a half-day or full-day visit and tour of the course, followed by a written report of all recommendations by an experienced, highly qualified Green Section scientist. The fee also covers full travel expenses, emergency consultations and other requests via telephone, a one-year subscription to the GREEN SECTION RECORD, and news of USGA regional meetings and the annual Green Section educational program.

Green Section services are offered for the benefit of golf by the USGA, a nonprofit organization. The Green Section agronomist has no axes to grind — no strings attached — no peers in the field of turfgrass consultation for golf.

If your club was not a TAS subscriber in 1984, join us in 1985. Take advantage of our professional experienced nationwide staff and help yourself to the finest golfing turf your club has ever known.

FOR GREEN COMMITTEE CHAIRMAN, SUPERINTENDENTS, CLUB OFFICIALS:

The Green Section 1985 Educational Program

Tuesday, February 12, 1985, Washington, D.C., Convention Center

The USGA Green Section's Annual Educational Program will be presented for the fifth consecutive year in conjunction with the Golf Course Superintendents Association of America International Turfgrass Conference and Show. It affords every superintendent an unusual opportunity to encourage his green committee and other club officials to attend (free) the GCSAA Trade Show on Monday, February 11, and the USGA Green Section Educational Program on Tuesday morning, February 12, 1985.

"Winning Ways for Golf Course Superintendents and Green Committees" is this year's theme. It will be presented on Tuesday, February 12, from 8:15 a.m. to 11:50 a.m. at the Washington, D.C., Convention Center. USGA Green Section Program registration is free as well as admittance to the Trade Show all day Monday and Tuesday. The event has no equal in the world of turfgrass management.

Advance registration (free) is suggested and should be made through the GCSAA, 1617 St. Andrews Drive, Lawrence, Kansas 66044.

Winning Ways for Golf Course Superintendents and Green Committees

8:15 - 8:30 Film Clips and Greetings
George M. Bard, Chairman, USGA Green Section Committee, Naples, Florida

8:30 - 9:00 The Research Team . . . The GCSAA and The Green Section
James W. Timmerman, President, GCSAA, CGCS, Orchard Lake Country Club, Michigan
Dr. Paul E. Rieke, Michigan State University, Member, Green Section Research Committee

An accounting and update of the largest turfgrass research effort ever undertaken in the United States, and what it means to the nation's golfers and superintendents.

9:00 - 9:20 Golf Keeps America Beautiful
Joe Much, Executive Director, National Golf Foundation, Florida

A prominent figure in golf comments on the game of golf and the beauty it brings to America.

9:20 - 10:20 Six Deadly Sins of Golf Course Superintendents and Green Committees

Moderator:
Jack G. Trench, Green Committee Chairman, The Springs Club, Rancho Mirage, California

Panel Members:
Eli Budd, Green Chairman, Oak Ridge Country Club, Minneapolis, Minnesota
David E. Green, CGCS, Belle Meade Country Club, Nashville, Tennessee
Joe Luigs, President, Western Golf Association, Crooked Stick Country Club, Carmel, Indiana
Danny H. Quast, CGCS, Milwaukee Country Club, Milwaukee, Wisconsin
Crawford Rainwater, Green Chairman, Pensacola Country Club, Pensacola, Florida
Edward Walsh, CGCS, Ridgewood Country Club, Ridgewood, New Jersey

A frank exchange of different viewpoints on the problems and frustrations of the green committee chairman and superintendents' role in course maintenance operations. A discussion of how and why this relationship can and should improve.

10:20 - 10:40 The Rules of Golf and The Golf Course Superintendent
William J. Williams, Jr., Vice-President, USGA, New York, New York

From the Chairman of the USGA Rules of Golf Committee comes a brief history and explanation of the Rules and how course conditioning literally comes into play.

10:40 - 11:40 Opinions You May Not Necessarily Agree With

Bunkers and Their Sands — *Dr. Marvin H. Ferguson, Agri-Systems Soils Laboratory, Texas*

Is Today's Golf Course Management Too Fine? — *Dr. Roy L. Goss, Western Washington Research & Extension Center, Washington*

Have We Gone Too Far with Low Nitrogen Rates on Greens? *Alexander M. Radko, Former National Director, USGA Green Section, Highland Park, New Jersey*

Listening to the considered opinions of others is one means of widening your own views. Here are three positions expressed by three knowledgeable and considerate people.

11:40 - 11:50 Closing Remarks
George M. Bard, USGA Executive Committee, Naples, Florida

This year's GCSAA Conference and Show has a new format. Seminar courses will be offered from Tuesday, February 5, through Wednesday, February 13, and General Sessions from February 9 through the Green Section Program on February 12. The Trade Show will be open from February 10 through noon on February 12. The week of events and professional education concludes with the GCSAA Annual Banquet on Tuesday evening, February 12. The USGA Green Section Award will be presented at that time, and the GCSAA's Old Tom Morris Award will be presented to former President Gerald Ford.

These events are worthy of the attention of every golf course superintendent and club official. For further conference information, call toll-free 1-800-GCA-SUPT and plan to attend!

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MR S TIMOTHY KILTY
12501 ELMWOOD AVENUE
CLEVELAND OH 44111

TURF TWISTERS

ONE OF GOLF'S ENDANGERED SPECIES

Question: We are considering adding nine holes to our course later this year. Is velvet bentgrass a good choice for the greens? (Vermont)

Answer: In five words, velvet bentgrass has quite a few problems. Thatching characteristics are very strong. It is slow to recover from damage and it is disease-prone. In addition, seed is increasingly difficult to obtain, meaning stolonization is necessary in most cases. Velvet bentgrass should be on the endangered species list.

IS OVERWORKED . . .

Question: Why are crops smaller in salty soils? (Arizona)

Answer: According to Dr. R.H. Nieman, of the U.S. Salinity Laboratory, Riverside, California, plants overwork themselves trying to compensate for the effects of salt. To keep their needed high osmotic pressure and get moisture from salty soil requires so much energy they don't have enough left to promote normal crop growth.

LEAVE A LADDER FOR THE RESCUE

Question: My problem is winter ice skaters. What can be done to deter them from using the pond on my golf course? (Illinois)

Answer: This is a difficult undertaking — as you already know. "NO TRESPASSING" signs should be posted, but they are generally ignored. Sometimes logs are thrown out in the pond to break up the surface for the skaters, but oftentimes they are not very effective. Perhaps the next best thing to do (after you've checked to see your liability insurance covers any skating problems) is to invest in or build a cheap ladder and keep it near the pond. If anyone falls through the ice, a ladder is one of the best means to rescue the person and save a life. The ladder need not be fancy, preferably metal (wooden ones are likely to end up as firewood), and by just being there — at least you have tried to protect yourself and perhaps help the trespassing skater.