dry summer. With the help of Dr. Worf and Monroe Miller, I was able to innoculate the three diseases (Pythium Blight, Dollar Spot, and Brown Patch) August 11, onto both open, exposed turf and turf covered by small, homebuilt greenhouse structures. The turf used was a practice tee consisting of roughly 85% bentgrass and 12% *Poa annua;* the rest was composed of Kentucky bluegrass and crabgrass. The turf was double cut at ½" with a triplex mower prior to innoculation. Misting of the plots was done at dusk.

Within four days, Pythium and Dollar Spot visible damage was appearing, especially on the covered plots. The Brown Patch fungus had actively growing hyphae, but was nonvirulent and caused no disease symptoms. This hyphae growth, however, provided the antigens for the antibodies in the test kit to combine with.

Testing was carried out with leaf samples collected, free of soil, from all areas. The level of disease corresponded well between the gradient of meter readings, provided by Agri-Diagnostics, and that of visual observations. Badly diseased samples gave higher readings than turf which was not as diseased. This lends evidence to support the idea that these kits can be used to verify a suspected disease, and also to predict how serious the infection is. The limited testing of natural infection in Kentucky Bluegrass, bentgrass and *Poa annua* supported the same conclusion.

New, experimental, rapid test kits for the three diseases were also tested. These prototype kits from Agri-Diagnostics are not available to the public yet. They are still being researched and perfected.

The rapid test kits take approximately ten minutes to complete. They have the distinct advantage of telling the user if the test was performed correctly. This is done with false-positive and false-negative indicators.

The results of these tests were mixed. The Pythium kit performed well, while the Dollar Spot kit did not. The test conditions allowed for few conclusions to be drawn about the Brown Patch kit. The rapid kits will have a position in the industry and will hopefully be refined and on the market soon.

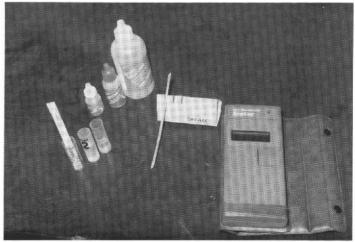
Even if the rapid testing kits are not available, the effectiveness of the long test kits should not be overlooked. Although three hours is a long time to wait for a test to be colmpleted and \$500.00 is a lot of money for the kits and meter, this cost is small compared to the cost of one misapplication of fungicide to a wrongly diagnosed disease. The testing kits available currently are very capable of positively identifying diseases of high maintenance turf.

Editor's Note: Jim Busse is a senior at the UW-Madison. He is majoring in botany and horticulture and will graduate in May 1989. He is intending to go to graduate school studying aspects of biotechnology.

Jim worked this summer on the golf course staff at Blackhawk Country Club.



Inoculum used to create symptoms, a check, Pythium, Rhizoctonia, Sclerotina (Dollar Spot).



Testing involves moving a "dipstick" between solutions and reading the color change with a reflectance photometer.

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WGCSA MONTHLY MEETING ROUNDUP

WGCSA OCTOBER BUSINESS MEETING — CHERRY HILLS OF DOOR COUNTY By Mark Kienert

October's business meeting of the Wisconsin Golf Course Superintendents Association made a long overdue trip to Wisconsin's Door County. Tom Parent, Golf Course Superintendent, provided those who made the trek with an enjoyable day. His Cherry Hills golf course, carved out of hillsides of exposed limestone, offered beautiful vistas of the surrounding countryside and provided some interesting golfing shots to the greensites below.

The day began mild, although somewhat windy, but turned vicious as small showers of bitter, driving rain moved through the area and forced many golfing teams to retire early. For those who stayed out and fought the elements, which gave hints of winter's first snows, a progressive Best Ball event was our game of the day. Event winners were Dick Evenson, Jeff Bottensek, Steve Schmidt and Mark Kienert. Second place winners went to Lee Merkel, Dewey Laak, Jim Wunrow and Scott Schaller. Flag event honors went to Scott Schaller-Long Drive, Gene Kallenberg—Longest Putt made, Jeff Bottensek—Closest to the Pin and Scott Schaller for Closest to the Pin in two.

Phil Pellitteri spoke on the drought's effect on destructive turf insects and potential damage to the turfgrass plant. As a bonus, he informed us of the damage tree insects may have on drought-stricken pines and other landscape plants. An informative question and answer session about the "Hot Topic" of Lymes disease in and about the state was well worth the price of admission alone.

Tom Parent was gratified by the number of superintendents making the trip and promised to have us back again real soon.

THE RAIN MAY NEVER FALL 'TIL AFTER SUNDOWN - IN CAMELOT By Bob Belfield

Donald "Red" Roskopf, Owner/Operator of Camelot Country Club in Lomira was the gracious host of the WGCSA August meeting. The day's event was well attended, and the rain held off until all scores were in. "I know it sounds a bit bizzare, but in 'Camelot', that's how conditions are."

Wisconsin's weather has been far from a stroll through orderly "Camelot" this year, but Camelot Country Club was in fine order; the winners of the event will attest to that. First place was taken by Al Nees of Reinders, and second place was a split between Dick Evenson of Scotts and Don Ferger from the Country Club of Beloit.

Red's family and entire staff saw to the fine details necessary, and a splendid time was had by all. "In short, there's not a more congenial spot for happily everaftering than here — in 'Camelot'".

WGCSA SEPTEMBER BUSINESS MEETING — Kettle Hills Golf Course

By Mark Kienert

The September meeting of the Wisconsin Golf Course Superintendents Association was held at the beautiful two-year old Kettle Hills Golf Course. WGCSA Director and Superintendent Bob Belfield has to be pleased with the way his course looked following this year's intensive drought and heat. Of particular interest to me was his turf density in fairways, tees and greenbanks for such a young course.

For those who didn't know, the clubhouse was fashioned from timber harvested during the golf course construction process. "Waste not, want not!"

September was also our golf championship meeting. From the category, "the more things change". . . ., our championship flight winner, who didn't even bother to bring the travelling trophy with him, is Bruce Schwiger. He shot a splendid 80. But beware Bruce; there is a challenger on the horizon. Another superintendent shot an 80 to tie Bruce, but his score was deemed unofficial as he had no official handicap! C'mon guys, it's just six bucks. Your club will pay this just because they know you're interested in the game. Championship flight runner-up went to New Berlin Hills' Tony Watson. "A Flight" winner was Chad Ball from Meadowbrook Country Club. Runner up went to Ozaukee GCS, Wayne Otto, who is now rumored to have thrown his hat into the ring for the soon to be retired Bobby Brue's job based on his impressive showing. "B Flight" winner went to Northbrook Country Club's Tom Schaller. Runner up went to Tom's Green Bay neighbor, Paul Delfosse. Reinders fashion model Brian Schmidt unseated perennial winner Dick Evenson.

Event winners for the day went to Lee Merkle for long putt. Ron Grunwald of Watertown GC and Milorganite's Dave Wersland took home closest to the pin honors. West Bend CC's Bruce Worzella cranked out the longest drive.

Congratulations to the winners.



WISCONSIN SECTION PGA OF AMERICA

A LOOK BACK AT THE DROUGHT AND SOME THOUGHTS ON BUDGETING

Certainly this summer's drought in Wisconsin affected the playing characteristics of most of our courses, but, as one would expect, quite variably depending upon local circumstances. My own home course, on small acreage with a fairway perimeter watering system which catches much of the rough, was nearly completely green throughout the summer, while the other extreme was reflected at Bulls Eve where nearly the entire course died after the water supply from the Wisconsin River was shut off. Most courses though fared well enough except for unwatered rough, since fairway watering is now the norm throughout the state. The waterless rough did affect playability significantly however, both in increasing roll for the off line shotwhich may even have been helpful in many cases- but sometimes being disastrous if the topography of the rough was hilly thereby throwing only slightly mis hit shots into areas, frequently unplayable, which golfers had not previously recognized as places to be considered in play. More than once I hit a shot to an elevated green, only barely wide of the mark, which ended up either unplayable or in a hazard by rolling at top speed off the severe slope which in normal years would have been slowed and stopped by the rough grass well short of trouble. The other effect of the drought I observed was that noticed any hot summer - over watering of our mostly Poa annua turf creating in some cases a muddy field of play in the midst of drought. At my club we saved grass much more completely and for a much longer period under intense stress than we ever would have in past years, when we were less cognizant of the proper use of water, by irrigating thoroughly and deeply every 5-6 days, then lightly syringing daily if signs of wilt appeared. This approach not only saved grass, but the course remained eminently playable and essentially normal throughout the drought. From a player's perspective then, if drought conditions should recur, we would prefer the Superintendent to practice

By David U. Cookson

judicious use of water so that we are not playing in mud, and at the same time trying to water strategic areas of the rough by hose and sprinkler if need be so that the course continues to present itself for play as originally designed, rather than allowing unexpected and essentially unfair topographically induced results to occur from only marginally off line golf shots.

Having said all this above, I should emphasize that in general, this summer I observed a continuation and expansion of what I have perceived increasingly the past few years; that the maintenance practices of Wisconsin golf courses continue to demonstrate a high level of professional competence.

On another subject briefly; your editor has often asked me to comment upon the budgeting process from my point of view, and this is the appropriate time of year. To me, the foremost factor in presenting the budget is an honest appraisal of the costs required to maintain the golf course to your standard, backed up by a detailed analysis of the reasons behind your conclusions. If this is done, and the Board of Directors does not wish to pay for the standard of golf course maintenance you have prepared, then the burden is on them. I find though that if the Board respects the Superintendent and his abilities and judgement, they will be reluctant to cut his budget request. On the other hand, if the Board feels that the work crew is lazy or inefficient, or that the Superintendent is padding his budget because he is not precise in his calculations, they will not be inclined to accept the budgeted figures. Labor costs are the major item; and you should be able to predict nearly to the dollar what they will be by going through your yearly plan week by week, then recording how many bodies you will need or are available and thus what the costs will be. This presupposes you have planned well enough to know this, and that you are not being inefficient in labor usage. If

golfers see golf course workers standing around, the first reaction is that the Superintendent doesn't need that many workers, but at the same time, if the golf course suffers because there were not enough bodies at certain times, the Superintendent is blamed then, too. So plan your labor needs precisely, and make your budget reflect this realistically. Be sure enough is included in the budget for fertilizer and pesticides, even though you cannot plan tightly since weather is such a factor. Still, Boards do not like being surprised each year by overruns which can happen if enough is not allotted for disease control. Put in what is required, and put the burden on the Board if it denies what you feel is necessary. Lastly, carefully judge your need for capital equipment. These are high ticket items, and every effort should be made to have a predetermined yearly amount added to your budget for capital equipment that you know will be there and can be used to calculate exactly what you will purchase not only this year, but each year in the immediate future. Good planning can ensure this, and the Board should be aware of your projections. This is the only area I feel even remotely justifies a "wish list," and not an unrealistic wish list at that. If your club has a money crunch you can get by with a small delay in capital expenditures, but your yearly operating maintenance budget should be untouchable, since these expenditures are absolutely mandatory for maintaining good quality turf. I haven't said anything new, but I know Boards respond to a good golf course well maintained by a careful Superintendent, who plans effectively and anticipates his needs and his problems. To be such, exact budgeting is imperative and basic, consequently each cost must be evaluated on its own, according to need and efficient utilization, so that everyone knows the final budget is realistic. This makes approval easy.



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Gator	5.9	Yorktown II	5.4
Prelude	5.8	Cowboy	5.4
Repell	5.8	Pennfine	5.3
Tara	5.8	Diplomat	5.3
Premier	5.7	Regal	5.3
Citation II	5.6	Barry	5.2
Manhattan	II 5.6	Delray	5.2
Blazer	5.6	Omega	5.1
All Star	5.6	Elka	5.1
Ranger	5.6	Manhattan	5.1
Birdie II	5.5	Citation	5.0
Fiesta	5.5	Linn	3.4
Pennant	5.5		

It's no wonder courses like Bay Hill in Florida, Shinnecock in New York, PGA West in California and Sahara in Nevada are only a few of those that are demanding the excellent performance of Palmer.

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The Sports Page



How Not to Build a Golf Course

By Rob Schultz

The University of Wisconsin is publishing a book that's a must-read for everyone connected with golf courses. It's entitled: "How Not To Build A Golf Course."

The new book is brought to you by the same folks at the UW who wrote best sellers such as "How Not To Hire A Football Coach" and "How Not To Hire An Athletic Director." The foreword to all of them was kindly written by Judge Robert Parins, who authored that great epic, "How Not To Operate A Professional Football Team."

There are seven chapters to this soon-to-be classic on botching the construction of a golf course. Let's jump right into them.

•The Murphy's Law Theory. This must occur if you hope to mess up every major endeavor you ever try. In the UW's, and Madison's, case, this applies perfectly. This is an overview chapter to help you understand how the UW's system works.

For instance, the UW suggested about five years ago that it should build a new athletic/convocation center. That was a great idea considering the present structure housing the basketball team was built before the pyramids. The pyramids, by the way, are in better shape.

But, the UW and city officials, in their infinite wisdom, killed the idea and went back to the drawing board. That means it will take as long to build a new arena as it did for the UW to build a golf course (30 years and counting),. and for Madison to build a new beltline highway (30 years), a civic center (30 years) and a convention center (five years and counting).

•The Camel Theory. You must follow this theory if you want to get off on the wrong foot. When the UW finally decided to build a golf course, it created a committee to make all the decisions regarding hiring an architect, general contractor, etc. Supposedly this was a good idea.

But they named the wrong people to the committee. Most of them know as much about golf courses as George Bush knows about picking a vice president. This chapter is a perfect lead-in to the next chapter.

•The "I Need a Vacation" Theory. This explains how not to hire a golf course architect.

Hiring an architect was one of the first decisions the UW golf course committee had to make. They listened to most of the country's greatest architects and studied their bids. Then Robert Trent Jones, Jr. bounced in and offered to fly many of the committee members out to the San Francisco area to look at his offices and some of his golf courses.

The committee might not know anything about golf courses, but they certainly know they shouldn't look a gift horse in the mouth. A few weeks after concluding their trip to California, guess who the committee hired as its architect?

•The Conditions Are Too Perfect Theory. This chapter explains how to take a golf course builder's dream summer and fail to get anything done.

It didn't rain from April until September. The UW started construction last fall and hoped to seed this fall. Instead, the UW announced it fell a year behind.

Included in this chapter are tips on how to let the project fall apart when the one committee member who's on the ball goes on a vacation to Europe. Other tips include paying extra to have weeds removed while construction crews are told to stay off the site and finding odd jobs around the house for a newly hired and bored golf course superintendent.

•The Match 3 Theory. The first step before deciding to build a golf course is to determine if you have enough money. This chapter explains how the UW thought it had enough money, then decided it didn't almost one year after construction started.

Since the UW decided it was way short of funds, members of the UW Foundation are traveling daily to a convenience store armed with one dollar bills, buying lottery tickets and praying one lucky stub will finance the rest of the project.

•The Mussolini Theory. In every project, there's somebody who lives and dies for its completion. This chapter explains how to alienate those people who eventually turn out to be your worst nightmare.

When the UW decided to create a golf course committee, there were a couple of local people who deserved to be on it but were shunned because they were a bit obnoxious while keeping the project alive for more than 20 years.

Now those people are finally having their say. When the UW ran out of money, these people said they'll finance the rest... if the UW does it their way.

•The Schubert Theory. This explains how to leave everything unfinished.

Since nothing seems to ever get done at the UW, there's a feeling the golf course's completion date — if ever — will be sometime around the turn of the century.

That's too bad. The UW was armed with a great piece of property to build a golf course and seemingly enough money to assure its quality. But now? Who knows.

Jones designed too many frills (some holes have as many as six or seven tees, most of which have been cut out of the budget), the original overall design may be too difficult for the average golfer and the end result has the UW still asking too many questions at a time when the end result should be near.

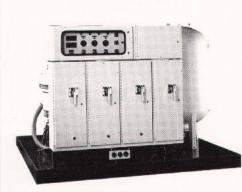
The main question here is when will the UW do anything right? Professors are leaving in droves because they're underpaid, athletics are at an all-time low, cries of racism are being heard through campus. The school is becoming a laughingstock.

The UW golf course is just one more embarrassing chapter. But it's also a microcosm of everything that is wrong with the school.

The Choice Is Yours

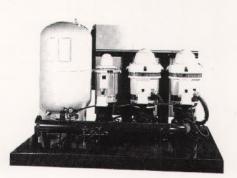
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Sixth Annual Wisconsin Turfgrass Association Field Day Attracts Over 300!

The sixth annual Wisconsin Turfgrass Association Summer Field Day opened to an absolutely gorgeous morning on August 23rd at the Yahara Hills Golf Course in Madison. Welcome rains the night before — nearly an inch fell in the Capital City — brightened and refreshed the landscape and the spirits among the substantial crowd that was in attendance.

Tom Harrison and Tom Schwab did an excellent job of planning and organizing this event. The number of exhibitors reached an all-time high. The amount of machinery that was brought on site was extremely impressive, drawing rave reviews from attendees.

Personnel present with the exhibits were impressed by the interest shown by the turf managers. From the point of view of each, this formula spelled just what a field day should be — a productive time for everyone.

Faculty members Gayle Worf, Bob Newman and Wayne Kussow spent hundreds and hundreds of hours over the past year or so developing extensive research and demonstration plots at Yahara. They were rewarded for their hard work throughout the day by the great interest shown, the questions that were asked and the advice that was sought.

Per usual, generous portions of good food were available. Any good field day is also an opportunity for turfgrass managers to visit with one another once again, something that didn't happen very often during the drought year of 1988. Certainly the staff from Yahara Hills deserve a tremendous amount of credit. Irv Graf, Ron Schara, Don Steinmetz and the entire staff at Yahara worked really hard to make the Summer Field Day the success that it was.

Best of all, the proceeds from the field day are dedicated to the O.J. NOER CENTER. Somehow that knowledge made this successful day even sweeter.



Horst's own Dennis Robinson presented WTA President Terry Kurth a check to show his company's support of the NOER CENTER for TURFGRASS RESEARCH.



WGCSA member Red Roskopf presented WTA President Terry Kurth the profits from an event he held at his golf course on behalf of the O.J. NOER CENTER for TURFGRASS RESEARCH.



Our host for the day was Yahara Hills Golf Course Superintendent and WGCSA member Ron Schara.



Machinery was everywhere at the sixth annual WTA Field Day at Yahara Hills.



Curt Larson, G.M. of Wisconsin Turf Equipment Corp., gave the WTA a very generous gift in support of the NOER CENTER.



John Turner, shown here visiting with Dr. Wayne Kussow, is always in attendance at WTA events.







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WGCSA FEATURED AT NORTH CENTRAL TURFGRASS EXPO AGAIN THIS YEAR

For the second consecutive year, members of the Wisconsin Golf Course Superintendents Association are an integral part of the educational program being presented at the North Central Turfgrass Exposition. The meetings will be held at the Pheasant Run Resort near St. Charles, Illinois from December 6th through December 8th. The WGCSA section begins at 8:30 a.m. on Thursday, December 8th.

Mike Lee, Carl Grassl's Assistant GCS, will open the event with introductions. Gayle Worf follows with the first of four lectures relating to the drought of 1988. Specifically, Gayle will discuss disease severity as related to those kind of drought conditions we experienced this summer.

Mark Kienert is sharing his miserable experience of the summer past with a talk entitled "DNR Causes 'Darn Nasty Results' ". Chuck Koval is going to address the subject of what to expect in insect damage after a hot, dry season like that in 1988. Marc Davison follows Dr. Koval with a lecture entitled, "Extremes in Golf Course Management."

One of the best articles to appear in the *Grass Roots* in recent times was written by Mark Grundman. He thoroughly discussed the subject of pre-germination of turfgrass seed. He will cover that topic in his presentation on Thursday morning.

For more information, contact the Illinois Turfgrass Foundation, Inc. at 435 North Michigan Avenue, Suite 1717 in Chicago, Illinois 60611-4067.



JOB OPENING

Wausau Country Club is accepting applications for the position of Golf Course Superintendent. It is a full time position with the responsibilities associated with managing a private 18 hole golf course.

An individual with a B.S. degree in turfgrass management who has previous experience in the private club industry is preferred. Salary and benefits are negotiable.

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