The Grass Roots

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About Our Cover:

Jeff Gregos' portrait is the latest in THE GRASS ROOTS cover gallery by artist Jen Eberhardt. This personable plant pathologist will, I predict, soon be a favorite among WGCSA members in his role with the TDDL at the UW-Madison.

"If faced with a crisis — in government, business, or even as an individual — there's no sense in panicking. Work hard, together as a team."

— Jim Lovell
Apollo 13 Astronaut, Commander

Table of Contents

(Left to Right): Mike Semler, Kris Pinkerton, Charlie Shaw, Dave Smith, Scott Schaller, Gary Tanko, Dave Brandenburg, Andy Kronwall, Mark Kienert.

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It's the Season for Reading

By Mark Keinert

When do you find the time or make the time to read and get caught up with the literature? Are you comfortable taking time out of your day to sit back in your office and read? Or do you find that there are too many distractions at work to concentrate on the technical stuff? If you are like me, most of the items I want to read rest in a nice messy pile beside my desk just waiting for a cold winter day in the "off season." This is one reason that I enjoy being a golf course superintendent in Wisconsin; we have an off season to confirm by reading all that we have heard about through conversation with other superintendents and sales reps.

Reading is the most important of the three R's for golf course managers. But, for me, it is the most neglected. I find that it is just too difficult to read during the working day when there is so much happening out on the golf course. Even on those infrequent "rainy days" there are too many distractions coming from out in the shop to allow for uninterrupted reading. I recall a letter that I received from Jim Latham, the former United States Golf Associations Green Section Agronomist and true friend of the WSGCA, when responding to a question that I posed him regarding career paths, responded by saying "read my friend, read." One of my earlier positions as golf course superintendent for a "union shop" allowed only supervisory responsibilities; it provided me with ample time to read. As my reading IQ grew, so did my waistline as I gained over twenty pounds due to the "desk job" that I had.

I feel that the most successful of superintendents make time for reading during the course of the golf season. But it is always of question of "when". In my case, and I'm not kidding, when I tell you that the temperature in my office is well over ninety degrees on an average summer day; this is not conducive to good study skills. I'm aware of colleagues who spend an hour or two during Saturday or Sunday just to keep even with the pile of reading materials that fill to their file baskets. There are still others who make time even during the cold days of winter, to venture to the office to commit one or two hours of time for reading. Others take time at the end of the day, after the distractions of a day's work are completed and the crew has left.

Many of us find that we have a large pile of unread letters and magazines stacked next to our easy chair. If you are like me, it is too easy to get caught up in some television show and that stack gets taller and wider. I have found that reading in bed does not work for me; too quickly my eyelids get heavy. As I have gotten older, I have found that during periods of insomnia, I have been able to catch up on some articles as the wall clock sounds a dismal 4 a.m.

Oh how I wish I had the courage to throw away those unsolicited pieces of "junk mail." One of my modest resolutions for 1997 will be to restrict further my television viewing and devote that time to reading. I hope to read more than just the professional stuff, something light and enjoyable to keep my reading skills sharp. I have always wanted to invest some time and money into taking a speed reading course or two. Maybe this is something in professional development that the WGCSA could offer.

The key here is to make time for reading the periodicals. One of my favorite duties was to calibrate the

(Continued on page 5)

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(Continued from page 3)
timing mechanisms of irrigation time clocks. It was during that time that I was able to do two jobs at once. You could easily read and concentrate on the job at hand as clicking of the electro-mechanical motors worked in the background. Even on those days that I found myself without anything to read, a dictionary always provided a great read. I have used this reference before, but one of Hawkeye Pierce's great lines in a M*A*S*H episode was when he was asked what book he would take to the front lines with him. He responded that he would take the dictionary as all the great works of literature were in there!

I had a mechanic once who hit the nail squarely on the head when he made mention of the fact that reading periodicals had the most current information you could ask for in your day to day operations; he was right. Many of you will clip articles to study at a later time, when things slow down. Some even make photo copies of articles just to organize their reading times. Some manage to keep file folders of information available in a small library that come in extremely handy when planning for some special project. Some of you manage to keep reference files of GOLF COURSE MANAGEMENT in the office to make use of the information when it is needed. I too kept files, saved close to twenty years' worth of periodicals only to get tired of trying to dry them out when the basement toilet, possessed by demons, would fill our basement with two inches of unwanted standing water, saturating box after box.

As I write this, I have over three years of GOLF COURSE NEWS that I have saved for one reason or another. I made sure, after throwing out the last twenty years' worth to save the last three years of LANDSCAPE MANAGEMENT or GROUNDS MAINTENANCE for the simple purpose of removing articles that will have pertinence to my job. Each year, I seem to find myself on yet another mailing list, with one more journal beginning to demand equal time with my standards. THE GRASS ROOTS is still the only publication that I anxiously wait for and will read from cover to cover when it arrives in my mail box. I have at least three distinct piles of letters, promotional sales material and correspondence from GCSAA of which I plan to sift through. But for some reason, year in and year out, I find myself in a new season with a new reason for not to getting to the bottom of it.

My bookshelf has become too small for the information saturation that we have been bombarded with. Why do we keep these things? The fear of being left behind without the benefit of some small seed of knowledge lost if I do not make the time to read each is my guess. I smile when I recall the stacks of term papers, newsletters and articles that used to bury Dr. J. R. Love's office desk. So I know that I'm not alone and in good company and that my paper affliction does not just affect golf course superintendents.

So my message is simple, as simple as the three R's preached to us so many years ago in grade school. Read, read, read. Take the time in the "off season" to catch up on the literature of our profession. Make time during the season to stay up to date. And remind me to budget for an office air conditioner!

He comes to first job with lots of experience

By Lori Ward Bocher

He's only 24 years old and he's straight out of college. But Jeff Gregos, the new Associate Research Specialist at the Turf Disease Diagnostic Laboratory, has already worked for two golf courses and a turf research facility, and he's worked on the grounds crew for a U.S. Open tournament. Quite a bit of experience for one his age!

Jeff came to the turf industry in a round-about way. Born in Pittsburgh, Penn., in 1972, he has no agriculture or turf background. "Although I did grow up next to an old tax write-off farm which was turned into a golf course," he adds.

As a Pennsylvania native with three siblings who attended Penn State, he just naturally went there himself after he graduated from high school in 1990. "I didn't have much say in the matter," Jeff laughs.

"When I first started at Penn State, I started in architectural engineering," he explains. "I've come a long way from my initial plans. My sophomore year I started working at the turf research facilities at Penn State because I was considering switching into the landscape contracting major. But I got more interested in turf, so I switched my major to turf." He received his BS degree from Penn State in August of 1996.

It took Jeff a little longer to get through college because of his switch in majors. He also took a semester off to work. "And I'm a typical guy," he admits.

In college, Jeff was involved with the Turf Club, the Agronomy Club, and his fraternity, Delta Sigma Phi, where he served as treasurer for a year. "But most of my free time was spent at the research facilities, if you can call that free time," Jeff adds.

Jeff worked at both the Valentine Turfgrass Research Center and the Landscape Management Research Center under Pat Sanders, a turf pathologist, and George Hamilton, director of the research facilities and the two-year turf program at Penn State.

He gained field experience by working at two golf courses. "I spent eight months during 1993 at the Chartiers Country Club near Pittsburgh," Jeff points out. "The following year I worked at Oakmount Country Club in the Pittsburgh area. I'd been in touch with them since the previous year because I wanted to work there. I thought it would be an excellent experience."

One of the reasons he knew it would be an excellent work experience was because the U.S. Open was held there in 1994. "It was overwhelming," Jeff relates. "Within three months I made $11,000, so you can imagine the amount of time we put in. The week before and the week of the open, I worked 110 and 120 hours, respectively.

"It was a fun experience," he continues. "We had 15 interns from Penn State there. So the week of the open we rented campers and set up a little shanty town at the facility because we were working from 4:30 or 5 in the morning to 11:30 at night."

Jeff did a lot of spraying on the course that summer. "We also did a lot of renovation after the open was over," he says. "Roughs were pretty beat up from the gallery. And I worked at lots of odds and ends here and there throughout the summer."

Jeff started at the TDDL on October 14, 1996. "I was looking for a job associated with research," he points out. "The atmosphere in research is a lot different compared to working on a golf course. Research is more laid back, and you get to see how things really work. I've always liked to figure out how things work. My mom tells me that, when I was a kid, I took apart my toys to see how they worked."

At the TDDL, he's one of two diagnosticians. Jeff handles the commercial samples while the other handles samples from home owners. "From what I've seen already, it seems like it's about half and half between commercial and home samples," he points out. "Of the commercial samples, most are from golf courses."

Jeff's major responsibility is to diagnose the turf samples that are sent in. "We get a 4-1/2 inch plug and some general background, and with that we have to diagnose what the problem is with the turf. We also give treatment recommendations."

He's also responsible for developing educational materials and outreach activities, including a Web page on the Internet. "Hopefully I'll be able to update the Web page frequently, once we get it started," he says (when interviewed in November).

"I'm also handling fungicide evaluation field trials," he continues, adding that he has some snow mold fungicide trials going on now, and he'll have more fungicide evaluations in the coming spring and summer. "And, once we get a new turf pathologist on the UW faculty, I will be that person's half-time help, also."

Having worked at Penn State's turf research facility, Jeff is able to compare it with the O.J. Noer Turfgrass Research and Education Facility. "It's definitely a young program here," he believes. "Penn State has an older, more established program. The Noer facility is excellent, but I think there's also room for improvement, which will be happening over the next couple of years.

"We're in a tough situation right now," Jeff continues. "We're short two faculty positions (Rossi and Meyer). Once the new people are on board, you'll see a lot more research being done. The facility will grow with that."

Jeff plans to work on a masters degree in plant pathology at the UW while working at the TDDL. Other than that, he's not too sure of his future plans. "I haven't thought that far ahead," says the recent college graduate.

Still single, Jeff is living with his sister in Oconomowoc. "She moved to Wisconsin in June when her husband got a job here," Jeff relates. "So I've been staying with them, which is a great help. I'm able to save some money. I'll probably be looking for something in the Madison area come spring." The commute from Oconomowoc takes about an hour.

Jeff is the "baby" in a family of two boys and two girls. "And we all got new jobs this year," he adds. His father works for the Urban Redevelopment Authority of Pittsburgh and his mother is a homemaker and works part time at her church.

In his spare time, Jeff likes to cross country ski, and he's hoping to be able to do some of that this winter. He has golfed in the past, but not too much. "I've had pretty hectic summers these past years," he says. "I've always been working the whole summer."

Being a Penn State grad, Jeff follows the Nittany Lions. "If you know anything about Penn Staters, they always bleed blue and white," he admits.

But we can forgive him for that as long as he diagnoses those turf samples correctly. Right?

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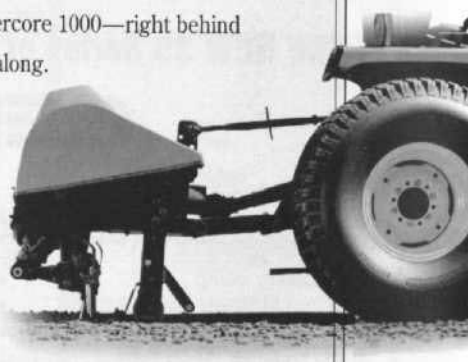

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For Golf Course Book Lovers, *The Course Beautiful* is a Book You'll Want

By Monroe S. Miller

Just about the time you think you'll never see more or better new golf course books, another "must have" hits the bookshelves in bookstores all across the country and you have no choice but to buy it.

In the case of *The Course Beautiful,* it might be the best of the recent releases. The book is a collection of essays by A. W. Tillinghast, one of the greatest golf course architects of all time and creator of well known golf venues like Winged Foot, San Francisco Golf Club and Baltusrol. My interest is amplified by the fact that Tillinghast did a masterplan for our golf course in 1936 and I have a set of his original drawings in my office.

Albert Warren Tillinghast was quite a prolific writer. A little over a year ago the USGA reissued a set of golf fiction written by Tillinghast—*Cobble Valley Golf Yarns and Other Sketches (1915)* and *The Mutt (1925).* I have a set of these books and although they aren't great literature, they gave me nearly as much reading entertainment as any other golf books I have read. Tillie was a great story teller and clearly enjoyed sharing his thoughts with other people.

The Course Beautiful not only has dozens and dozens of short essays—I believe many of them were originally magazine pieces—on topics golf course superintendents will enjoy; it is filled with excellent old photographs and original AWT sketches that complement his writing and emphasize his opinions. Among the essays I predict you will especially like are *Poa annua* (52), *Maintaining Green Fairways* (51), *The Story of the Gang Cutter* (50), *Steam Roller Days* (49), *The Kilkenny Cats* (48), and *The Green Chairman* (46). The chapters 46 through 53 cover topics pretty specific to us, although he touches on sand, trees, and a host of other subjects we hear about from players every day. AWT also expresses pretty clearly a lot of the principles that guided his design of golf holes. It makes for fascinating reading.

This book, which I recommend without reservation, gives readers a number of lessons in golf history. Tillinghast, although American born, learned much of what he knew about golf and golf course design from Old Tom Morris and from the Old Course at St. Andrews.

The Course Beautiful is a great bedside book. The chapters are short and complete and you can read a few before dozing off at night. The jacket to the book is excellent and appealing, but the cover itself is one I would have done a little differently. But that matters little, given the terrific content. It was put together by three members of Baltusrol—Bob Trebus, Richard Wolffe and Stuart Wolffe. They uncovered a wealth of information about Tillinghast while they were working on a centennial history for their club. This work they have given to golf will be appreciated by all who partake.

While on the subject of books, I guess you could call this development "a sign of the times" or "inevitable". You are now able to buy books from your computer screen.

Like some other golf courses in the state, we on are the net. Much of what goes on there is, to me, a waste of time. But if you pick and choose, you can harvest some information that has value in the operation of a golf course.

At Amazon.com (http://www.amazon.com), you can browse and buy books from the convenience of your shop office. You cruise the aisles from your computer screen, searching by title, author, subject or keyword. You pay by credit card, and books are delivered to your door. They brag, "if it is in print, it is in stock." That seems like a near impossibility until you learn that their inventory is in the million-plus range! People report finding books at Amazon they have been searching for years.

Shipping charges are offset somewhat because they discount at about 10%. But those are incidental to me. I like going to book stores, seeing the volumes I am thinking about purchasing, feeling the heft of a particular book, waiting in line for a book signing, drinking coffee while shopping, and dozens of other intangible pleasures. Nevertheless, I plan to search through Amazon one of these days. I let you know what I find out. Or, better yet, one of you should let me know what you think!

IMMOBILITY

By Dr. Frank Rossi
Extension Turfgrass Specialist
Cornell University

Perspective. As a self-confessed lifelong student of science, I must admit I occasionally surprise myself with my pondering. My former by-line known as "Gazing in the Grass" really fit me because I often could be found doing just that. Still, as a student of our discipline, when I look at the turf, my mind is always racing. Most recently, I began to consider the distinct disadvantage that plants face from an evolutionary perspective as a result of their lack of mobility. Simply, plants can't move themselves.

Surely, in a loose sense, reproductive parts of plants such as seeds, rhizomes, and stolons do allow for some species mobility. But once a plant is anchored into a rootzone, unless it is moved by animal (including humans), it's stuck. Here in lies my pondering. Have you ever wondered how plants have evolved within the confines of immobility? Do plants actually communicate with each other? Crazier yet, if plants could move, would the ones you are managing on your course, pick up and leave because of abusive treatment without proper compensation?

The ability to colonize and maintain space could be viewed as the primary function of vegetative growth of a grass plant. What follows then is that a grass plant (or community of plants) is now in position to generate biomass that in turn harvests light energy (sun) and converts it to chemical energy (carbohydrates, etc.). What we see is that a stand of turf looks healthy and becomes dense. What we don't see is an organism in constant communication with adjacent organisms, both above and below ground.

Above-Ground Communication. There is some interesting research that indicates that plants actually "sense" each other. Plants have light sensitive receptors, called phytochromes, that pick up radiation reflected by nearby leaves. This reflectance is processed by the plant and then utilized to determine the growth characteristics to be employed. For example, in a dense planting, where there are many individuals competing for limited resources, plants might reduce tiller production. This is why dense seedings have finer textured plants. Obviously, if plants could move they might venture to an area where there are not so many individuals competing for resources. The management implications in high density plantings, especially with the new upright, high density bentgrasses, are that to support more individuals, we may need to supply more inputs such as water and nutrients.

Below-Ground Communication. The communication below ground could be characterized as "the trading pit at the Chicago Mercantile Exchange". There are many signals being emitted from plants to other organisms, as well as to create a favorable rhizosphere where nutrients are more easily extracted. Again, because plants do not necessarily select where they end up, they are challenged to create a favorable environment for their survival.....here and now!

Nutrition. There is a considerable body of literature that describes the regular interaction of plants and the immediate area around their roots, known as the rhizosphere. Specifically, plants excrete a variety of chemicals from their roots with the sole purpose being to create a microenvironment that allows for easy absorption of nutrients. This is accomplished by releasing compounds that alter the pH directly around a root and increases the solubility of an important nutrient. Additionally, a plant can release a chelating agent that can make available a previously unavailable nutrient, like iron.

As turfgrass managers, we are beginning to recognize the importance of this issue by manipulating the rhizosphere pH for management of diseases such as summer patch or take-all patch. Furthermore, there is a body of literature that indicates part of the take-all patch attack includes altering manganese uptake by the plant. Of course, turf managers in Wisconsin are particularly fortunate to have Dr. Kussow currently conducting a study on just this issue—the influence of nutrient management on plant diseases.

Allelopathy. Obviously, one of the greatest challenges for an organism that lacks mobility is competition with other organisms. These other organisms can attack the plant or colonize the area the plant is in, and crowd it out. This is a good description of the approach taken by plants we consider. Therefore, it seems reasonable that plants can influence their immediate environment to effect the growth of another plant as much as they influence their rhizosphere to enhance their own growth.

The scientific term for this influence of one plant's influence on the growth of another plant is allelopathy. This influence can be chemical or physical. In other words, some plants simply shade other plants from light, gain a competitive advantage, and survive while another dies. More complex, and consequently less understood is the concept that a plant releases a chemical (herbicide, growth regulator, etc.) that influences the growth of another species. One of the most famous of these reports is related to black walnut. It was proven that black walnut exudes a chemical (juglone) that acts as an herbicide that prevents the growth of certain plant species around its base.

Historically, this area of research has been controversial. Early researchers typically ground up plant tissue, applied the slurry to a pot full of weeds and recorded weed control. Later it was identified that just about