



President's Message

MANY THANKS



By
Bill Roberts

"The people in your Association came in here and conducted themselves appropriately, like professionals. They've worked hard and it's paying off." I heard those words, or words to that effect, over and over, from countless Superintendents from around the country, during numerous conversations I engaged in at the recent GCSAA 57th International Golf Course Conference and Show. I heard those words and I couldn't help feeling proud.

The letter writing, the telephone conversations, the hospitality rooms, the time spent at the printer, the hand shaking and all the other activities that go along with participation in GCSAA's election process have culminated in success. I've reflected on all that effort and time spent and I am appreciative to those who accomplished that myriad of tasks that is essential.

More importantly, however, I've been allowed the opportunity to participate in the pursuit of a goal that has solidified what were some very strong friendships to begin with. I've worked with some individuals who shared my disappointment in 1985, buckled up and came back in 1986. That I wouldn't trade for anything.

Space limitations won't allow for individual mention of all those involved. Be assured that I am appreciative to the entire membership of the Wisconsin Golf Course Superintendents Association for

support and encouragement over the past two years. I am compelled, however, to mention, in a way I feel is somehow inadequate, those who have had the greatest direct impact on me and the realization of a dream I've had ever since I got into the "business" fourteen years ago. That is, participating in GCSAA as a member of the Board of Directors.

My thanks to Jeff Bottensek, my neighbor, who "insisted" I be introduced to the Wisconsin Golf Course Superintendents Association eleven years ago and who has quietly urged me to pursue this goal ever since. And who really got me going four years ago when, during the course of a conversation in a local Atlanta establishment, he asked, "So how are we going to get you elected to the Board?"

My thanks to Dale Marach, another neighbor, who has been supportive of this effort from the beginning and who proved to be an excellent "sounding board" during shared rides to WGCSA meetings.

My thanks to Wayne Otto and Danny Quast for quiet, unpretentious support and consistent "legwork" when they could have been doing something, somewhere else.

My thanks to Randy Smith and Pat Norton who went about the business of "handling" things and did so with a "top-shelf, no-nonsense" approach. Arrangements were made and details attended to and now everyone knows that Wisconsin, and they, are a tough act to follow.

My thanks to Roger Bell who continually "plays the devil's advocate" and makes me galvanize my opinions into valid, consistent beliefs and who has pushed me to articulate those beliefs without a lot of rhetorical "prattle." Good friends don't always agree or tell you what you want to hear but they do insist you think beyond yourself. . in spite of yourself.

My thanks to Monroe Miller for the "air of confidence" that said since 1985 didn't work out, 1986, without a doubt, would. Through the anxiety of two campaigns, he projected a sense of assurance and stability that implied it was, quite simply, a matter of taking care of business and success would follow. That has also been his approach as President of WGCSA and we have all benefit-

ted.

My thanks to Rod Johnson. What can I say? A candidate and a delegate become inseparable through this process and I have had the benefit of the very best in Rod Johnson. His ability to approach other Superintendents and delegates in a candid, effective manner has been amazing to watch and be a part of. A delegate works harder than any candidate and Rod has worked harder than that. Through phone calls back and forth (everyday and sometimes two, even three times a day), through my constant badgering about "How are we doing?", through counting votes, through "proofing" speeches and election brochures, through phone calls to others, through all the correspondence, he was there and he did it with a sense of purpose, a sense of integrity and a sense of humor and for that he has my gratitude and respect. He's a player. Another player is Janell Johnson, who didn't see much of her husband at the last two conferences, took it in stride and redefined "class." Thanks, Janell.

Finally, special thanks to my wife, Pat, for "hanging in there" this year, last year and the years before that. Missed dinners, taking the kids by herself to where they had to be, listening to "politics" and reading speeches and everything else are all part of it and she did it. It's easy for me to get into something and pay less attention than I should. It is, quite simply, good to know I can count on a partner though it all who gives me the true perspective I need.

The next two years will be busy. We have a solid organization in the Golf Course Superintendents Association of America. We are a progressive, professional organization built by concerned, dedicated and conscientious members who take a great deal of pride in what they do. I have never seen a group that is so involved and so directed to making a contribution. I am grateful for and proud of the chance to participate as a member of GCSAA's Board of Directors and I'm grateful and proud that the Wisconsin Golf Course Superintendents Association helped give me such an opportunity.

You are the best and 1986 will be our best.

Sterol Inhibitors: What do they do?

By Michael Semler

Within the last decade, Golf Course Superintendents have been introduced, on a widespread basis, to a relatively new class of fungicides — the sterol-inhibitors. They are a welcome addition to our arsenal for battling turfgrass diseases and will give us another alternative to rotate into our disease control programs. I hope to shed some light on the subject matter involved, including information on what sterols are, their role in eukaryotic organisms and how the sterol-inhibitor fungicides help prevent disease.

The sterol-inhibitors are a unique class of fungicides with several characteristics which differentiate them from other systemics. They are the largest group of compounds with the same mode of action and they are a diverse group of compounds with respect to their chemical structures. Although they are quite different structurally, their antifungal spectra are similar.

Sterols are required for growth and reproduction by eukaryotic organisms. Although a complete understanding of the functions of sterols in the cells has not been achieved, their importance in membrane structure and function, and their role in sexual reproduction has been partially exposed.

Sterol biosynthesis is one aspect of general lipid metabolism in which acetate, the basic starting chemical unit, is transformed thru a series of reactions into squalene. The cyclization of squalene to the first sterol intermediate, lanosterol, is the first step in a series of complex reactions leading to the synthesis of ergosterol, the major sterol in the cell membranes of the higher fungi.

The biosynthesis of sterols occurs in the smooth portion of the endoplasmic reticulum. The endoplasmic reticulum functions as a communication system in the cell and also as a means for channeling materials — such as proteins and lipids — to different parts of the cell.

Figure #1 gives an illustration of the general pathway of ergosterol biosynthesis in fungi. Many of these steps have not been completely elucidated and the precise steps may vary with different species of fungi.

Various assays and analyses on the toxic actions of the sterol inhibitors on fungi have revealed certain characteristics. The general characteristics of the fungi are: "they fail to inhibit spore germination or initial cell growth and dry weight increase; they alter cell morphology, causing abnormal growth patterns, swollen hyphae, and/or excessive hyphal branching; and the accumulation of free fatty acids and sterol intermediates in the cell. They have no immediate effects on respiratory metabolism or macromolecule syntheses."¹

These characteristics are produced by an interference in the sterol biosynthetic pathway caused by an accumulation of the sterol inhibiting

fungicide. The results are the inhibition of ergosterol synthesis and the accumulation of some sterol intermediates. The primary action site of these fungicides in sterol synthesis is the c-14 demethylation. (Figure 1, reactions 1 and 2).

With the inhibition of ergosterol by C-14 demethylation, marked accumulations of some sterol intermediates is noted, namely, lanosterol, obtusifolial and 14 α methyl 8,24(28)—ergostadienol. This accumulation indicates that only specific aspects of sterol synthesis are inhibited. It also suggests the failure of some control mechanism governing sterol biosynthesis, and that in normal cells some end product gives feedback to stop the synthesis. When the mechanism is absent, synthesis continues on a limited basis and an excessive amount of intermediates collect.

Even though ergosterol biosynthesis is quite sensitive to inhibition by these toxicants, mycelial growth and various aspects of metabolism are only slightly affected for a short time after the synthesis of ergosterol is prevented. The levels of ergosterol do not decline rapidly after synthesis stops. However, once the ergosterol level is depleted, an interference in membrane synthesis occurs, growth inhibition, and changes in metabolism and morphology are noted.

In the synthesis from squalene to ergosterol, sterol carrier proteins bind the water insoluble intermediates, enabling enzymatic conversion and then the transfer of the sterol of intercellular sites. "It has been suggested that the inhibitions of sterol biosynthesis bind to the carrier proteins and prevent enzyme interactions with the sterol carrier protein — sterol complex."¹

The ultimate toxicity undoubtedly results from the lack of proper sterols for membrane synthesis. Although the sterol-inhibitor fungicide structures vary considerably, their seemingly similar modes of action probably result from their movement in the cell by the endoplasmic reticulum, where they inhibit sterol synthesis and possibly other synthesis as well.

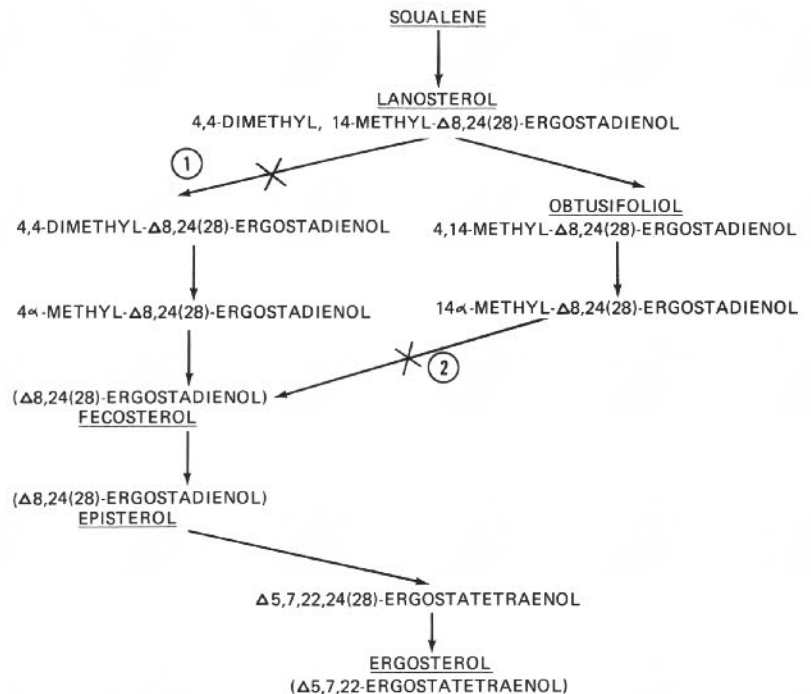
Many of us realize the growth retarding effects the sterol-inhibitors exhibit on turfgrass. The slight greening and plant growth retarding is due to the effect the fungicides have on the plant growth regulator — gibberellin. This is due to the similarities that exist between the initial stages of gibberellin synthesis and of sterol synthesis, both of which involve portions of the isoprenoid pathway. Also, many of the cyclizations and oxidations that occur in the latter stages of sterol synthesis are similar to those in gibberellin synthesis.

It appears the inhibition of gibberellin or sterol synthesis could involve one another through membrane function. Sterols are an important part of membrane structure and gibberellins effect the membrane properties. However, the relationship between these two is not entirely understood.

Much of the research on the roles of ergosterol in the higher fungi is still going on because their func-

1. Malcolm R. Siegel, 1981. Sterol Inhibiting Fungicides: Effects on Sterol Biosynthesis and Sites of Action. *Plant Disease*. 65:986-989.

tion is only partially understood at this time. This article has only covered the generalities involved for a few reasons; one is that the organic chemistry involved is quite technical and may cause more confusion than necessary, the second is that I did not intend this to be a be-all or end-all on the subject matter. If you are like me, there was always some confusion as to how the sterol inhibitors really worked. I hope I have given some enlightenment on the subject without causing confusion.



In the last issue of the Badger Broadcast, our lead article was entitled “Who’s in Charge Here?” A Case for the General Manager Concept. This concept is not only supported and promoted by CMAA but also by NCA.

Since this article came out, the Wisconsin Golf Course Superintendents (or Managers) Association had an editorial in their “Grass Roots” publication responding to our article. After reading it, I felt like the bully on the block picking on all the small guys that couldn’t defend themselves.

First of all, I feel that the General Manager concept is a good one and I for one support it whole-heartedly, but I also realize that the G.M. concept does not apply to all clubs; all clubs are not the same, for a large city club,

athletic club, yacht club and your larger country clubs you have, in most instances, a General Manager.

Our colleagues, the Golf Course Superintendent (Manager) have this dreadful idea that if a club initiates the G.M. concept that the golf course budget would be slashed in favor of more kitchen equipment or dining room chairs, etc. Can you imagine what the golfing members would do to that G.M. if that was the case; which we all know it isn’t. A G.M. is not going to tell the Superintendent how to cut the fairways or greens or how to design a sandtrap, we didn’t go to college for that and the Superintendent didn’t go to college to write up a 12-course gourmet dinner. We all have our own expertise.

So what’s the big problem? Everyone is hired to do a job, to work with the committees and the Board and let the members enjoy the golf and dining. So whether it’s a Club Manager, or General Manager or Golf Course Superintendent or Golf Course Manager, the most important thing is working together as a team and not as rivals.

To me, friendship is more important than titles, so let’s get on with it and let the members enjoy the fruits of our labor.

*Bernd U. Sturm, CCM
President, Wisconsin Badger
Chapter, Club Managers
Association of America*

Editor’s Note: Even the best of friends sometimes have disagreements, Bernie. You missed several of my points about the Perspectives article:

1) The NCA didn’t qualify their remarks about general managers by indicating they’d best have a place, using your words, “in a large city club, athletic club, yacht club and your larger country clubs.” They put all clubs under their notion. My remarks were directed toward the vast number of average golf clubs where most of us work. The NCA and CMAA are promoting this idea here, as well as for the clubs you mention.

2) The GM is a “false title” in many of the instances where it is used, usually by the man who is only the clubhouse manager. I can give you, right off the top of my head, a number of clubs where the clubhouse manager uses the title GM and yet has absolutely nothing to do with the golf course or the golf shop operation. This is worse than self-promotion, deception or insecurity — It is childish and silly.

3) You haven’t told me what’s so wrong with the triumvirate system or where the GM concept will save money or improve services, a key point in my position.

You don’t need to worry about feeling like a bully. We are fully capable of defending ourselves and our positions. Should this foolish idea become the “new wave,” you’ll find many golf course managers moving in and filling these jobs. We are, however, most interested in promoting ideas that are good for golf and good for golf clubs, and I repeat: “The GM concept is high fantasy. It’s an idea whose time hasn’t come and probably won’t. It’s a bad idea that won’t be instituted, no matter how often it is brought to the table. It doesn’t need to be revised, or refined or resurrected; it needs to be buried.” MSM

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Prelude	5.8	Dasher	5.4
Tara	5.8	Diplomat	5.3
Repell	5.7	Ovation	5.3
Citation II	5.7	Pennfine	5.3
Manhattan II	5.7	Regal	5.2
Premier	5.7	Delray	5.2
All Star	5.6	Barry	5.2
Blazer	5.6	Omega	5.2
Ranger	5.6	Elka	5.2
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Fiesta	5.5	Citation	3.6
Yorktown II	5.5	Linn	
Pennant	5.5		

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Editorial

by Monroe S. Miller

INJUSTICE

Late December brings with it many year-end summaries and wrap-ups in newspapers and journals — news stories of the year, the most popular music and movies of the past twelve months, men of the year, women of the year, and so on. Usually too long. This year in Wisconsin, as in many years past, the Associated Press compiled the “Top 10” state sports stories of 1985. I usually bat about .600 when I compare my list with theirs. And I **almost** always correctly match their top story.

I had no doubt — NO DOUBT — that the top Wisconsin sports story for 1985 was Andy North’s magnificent victory in the U.S. Open at Oakland Hills Country Club. I was totally surprised, after reading the AP list twice, that Andy’s Open victory not only was not the top sports story, it wasn’t even in the top 10. It wasn’t even an honorable mention story. My surprise quickly turned to disbelief and then to anger. Never again will I give a bit of my time to reading AP’s year-end feature. They’ve lost my respect; they have no credibility. The top sports story for this year of 1986 should be the stupidity of Associated Press in leaving North’s victory off the 1985 list.

North, a native Wisconsinite, has accomplished a feat only two others in the history of golf have — he has won two U.S. Open Championships, the most prestigious title in the world for any golfer. That merits an enormous amount of attention, especially in a state where golf is as popular as it is in Wisconsin. He has chosen the “frozen north” as his home, passing the warmer southern and western climates most other tour professionals choose. He is a club member here, and chooses to spend his very valuable time, gratis, supporting junior golf in Wisconsin, speaking at meetings like the WGCSA Wisconsin Golf Turf Symposium and helping support and promote the Greater Milwaukee Open. And my mind keeps coming back to the incredible, almost unbelievable fact that he is also the 1985 U.S. Open champ. That’s premier sports news if there ever was or is such a thing.

I’m ignoring the ignorance of the AP. As editor of this journal, in a very small way trying to correct a gross injustice, I hereby declare Andy North’s 1985 U.S. Open victory the GRASSROOTS’ “Top Sports Story Of The Year.”

Congratulations again, Andy!

Way back in 1866 Judge Gideon Tucker said, “No man’s life, liberty or property are safe while the legislature is in session.” Well, things have changed a lot since the good judge spoke those words of wisdom — they’ve gotten worse. Nowadays, even when the legislature is **out** of session, we are not safe. A Wisconsin politician has spouted an idea that could spell disaster for Wisconsin agriculture, and that includes our own golf course industry.

Be sure you are seated before reading this recent proposal advanced by Assembly Speaker Thomas Loftus, a democrat from Sun Prairie. He seeks to remove the Wisconsin secretary of agriculture from an appointed position and place it among the elected positions of state government. Such a move would, to me, represent new heights of irresponsibility. There is a rank odor of arrogance in Loftus’ proposal and we have a serious responsibility to help see that this plan gets no farther than it has already. It is an insane idea that is unacceptable in agricultural circles, including ours.

Why? This plan represents withdrawal from principle that virtually all of us involved in Wisconsin agriculture will have reason to regret. It removes this most influential position from a relatively non-partisan stature and places it right in the middle of partisan politics. Don’t you wonder where the logic is? The vast majority of our state residents know little or nothing of agriculture, and yet they will be faced with choosing the department secretary. As too often happens, the most qualified person loses to the best politician. It would be a sad state of affairs. And don’t you have to really question Loftus’ intent as a liberal democrat — what a perfect way to place the department of agriculture and their policy-making and enforcement influence squarely in the hands of “environmentalists.” It would be a clever ploy to do just that, and only a fool would deny that such a situation would be or could be to the detriment of Wisconsin agriculture. Can you imagine the feast such a group would have regulating us? We could return to handpicking armyworms from putting greens.

It is a grim experience to listen to non-agriculturalists discuss agriculture issues — you hear an extremely wide range of views, much misinformation and misbeliefs, absurdities and myths. And these are the very voters who will select the person with so much influence on policies that in turn affect us.

The current situation may not be ideal. Tony Earl, in his political wisdom and with his appointive power to the state agriculture board, has worked and succeeded in ousting LaVerne Ausman as Secretary of Agriculture. But this is the first time in my memory it has happened, and is about what you could expect from the current governor. But although it is imperfect, it is still exponentially better than the plan proposed by Rep. Loftus.

This absurd turkey of an idea deserves a swift and sure death. It is politics and nothing else, and doesn’t deserve another second of serious consideration.



Editorial

PREPARE TO FIGHT THE BATTLE AGAIN, AND AGAIN, AND

By Thomas R. Parent

The fight against excessive pesticide regulation has been going on for many years. The conflict between environmental groups and users of agricultural chemicals is a struggle those of us in the golf course industry will probably always be faced with. The fight for continued use of pesticides in this country will be fought in the courts and legislative bodies at all levels of government. Those of us who use pesticides must be prepared to defend our rights to use these products. We must make it clear that the use of pesticides is one of the most important factors responsible for the quality of life we've enjoyed since World War II.

The extensive use of pesticides has helped make us the most healthy and prosperous nations in the history of mankind. Appropriate use of pesticides elevates quality of life for everyone, with little risk to the environment. Abuses of these products, brought about by ignorance and poor management, has strained their reputation. These abuses have triggered an emotional response based on isolated incidences and fear. Fear is a powerful weapon which can only be overcome by education of the public. Our job is to do just that — educate the public, the courts and lawmakers on the positive aspects of pesticide usage.

Penicillin is an example of a pesticide which has saved countless lives. It can also kill the few who are allergic. No one is suggesting a ban on penicillin. We must compare this example with the use of herbicides or insecticides in this country which have saved millions from starvation around the world. The use of sterilents, rodenticides and insecticides is probably as important to the health and quality of life of our citizens as the advances in medicine.

In the turf industry, we also use pesticides to improve the quality of life for the people we serve. For the golfer or home owner, enjoyment of well maintained turf can only add to mental health. To escape the pressures of urban life on a beautiful golf course or lawn must be a factor in our defense. It's up to us to defend the use of these products. No one is going to do it for us. Further restrictions on the use of pesticides is not only unnecessary, but could be very costly. Legislation proposed in Madison last fall would have driven the lawn care industry into financial trouble and possibly out of the city.

Actions such as those proposed in Madison would have taken the application of pesticides out of the hands of trained and certified professionals, resulting in a larger number of people exposed to the same products at higher rates.

We must strengthen our unity as an industry. The state has two groups that do an outstanding job in protecting our rights — the Wisconsin Agribusiness Council and the Forestry/Rights-of-Way/Turf Coalition. We must give them our support, not only on the Association level, but also on the individual club level. These organizations work to quench the public's fear of pesticides through the educational process. We must make it clear that, like penicillin, the benefit of proper pesticide use far outweighs the risk.

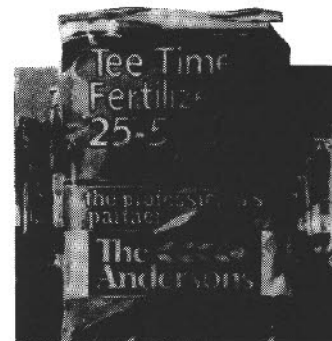
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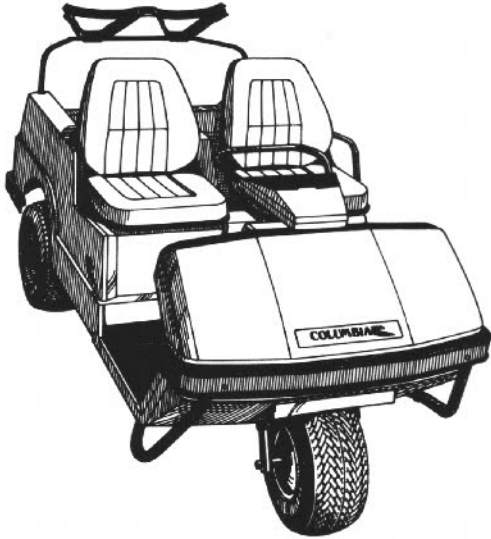
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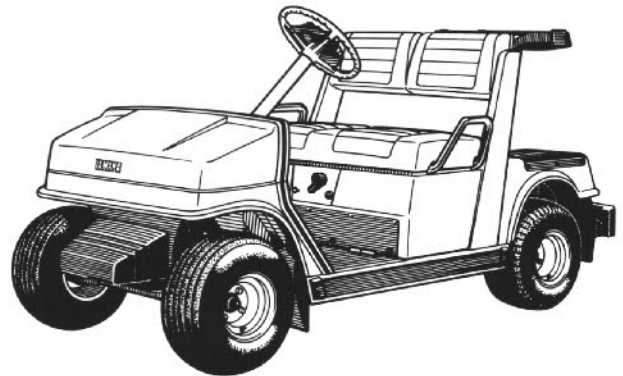
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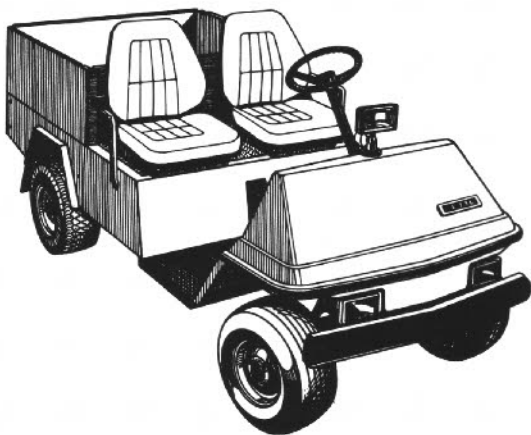
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REFLECTIONS ON A JOURNEY TO SCOTLAND

By Danny H. Quast, CGCS
Milwaukee Country Club

This pilgrimage started with an opportunity to attend the Scotland International Golf Greenkeepers Association (SIGGA) Conference that was held in conjunction with Ransome's 5th International Greenkeepers and Superintendents Golf Tournament in St. Andrews, Scotland at the Rusack's Marine Hotel. I was accompanied by my colleague Wayne Otto, Superintendent of Ozaukee Country Club, Mequon, Wisconsin.

We flew from Chicago to Toronto where we met Stanley Zontek and Patrick O'Brien, consulting agronomists with the USGA Green Section. We left Toronto at 8:30 p.m. October 5, and arrived 8:00 a.m. October 6th. We were greeted at Prestwick airport with rain and an opportunity to take our lives in our hands by driving to St. Andrews. None of us had had much sleep and to drive a strange car with the steering wheel on the "wrong" side sure seemed like risky business to me. It worked out better than I thought because everyone drove on the "wrong" side.

We arrived at St. Andrews around noon and checked into a Bed and Breakfast called "West Park." Throughout Scotland people open their homes to visitors for a night's sleep and breakfast at a very reasonable cost. We ate lunch, got out cameras and walked to the "Old Course." When we got there, no one was playing golf. Old Tom Morris, Curator of St. Andrew's Old Course from 1865 until his death in 1908, once said to a critic of the custom "The Old Course needs a rest on the Sabbath sir, even if you don't." It has been that way for over a century — golf is not played on St. Andrew's golf courses on Sunday.

The four of us walked down the first hole of the "Old Course" appropriately named the Burn. In front of the green is Swilcan Burn — to our left a landmark, the Swilcan bridge, directly behind the bridge the 18th tee and the famous "Road" hole. The score card says



An old WGCSA friend, Stan Zontek.



The "Old Tom Morris Golf Shop."



A St. Andrews street and shops.



Rugged terrain of Scottish golf courses.

that this 461 yard par-4 is the most difficult hole on the course. The card states that you have to drive over the edge of the out of bounds wall to the center of the narrow fairway. Second shot must be to right hand half of the green to avoid the deep road bunker at the left of the green. To use too much club means playing from the road. Playing this hole is the only way one can appreciate it. Don't let your mind go on vacation, or you will soon have big numbers on your score card. Now, having walked only 400 yards onto the golf course and standing on the 18th tee — we turn around and look back, what a breathtaking view. In our view is the Royal and Ancient Golf Club, behind the first tee and the 18th green nestled along the narrow street and shops of St. Andrews one realizes that there is no other scene on earth like this. The following day we played this great golf course and as we walked down the fairway across "Swilcan Bridge," crossed the road that leads to the North Sea, to the "valley of sin" (the name given to the deep contour of the putting surface, front left of green) — we realized it doesn't matter whether you are a great Golf Professional or sport a 20 handicap — you will never forget such moments in your life.

"The Link was part of the patrimony of the Burgh of St. Andrews bestowed upon it at erection in the 12th century. No one knows the exact age of the Old Course or the exact age of the game of golf, but the inhabitants of the town have been accustomed to playing golf over the Links since the 15th century and the earliest historical reference to the games is in an edict of 1457 issued by James II of Scotland." To play St. Andrews is like entering another time — a journey back in history.

That night we attended a wine tasting reception, a kick-off for the SIGGA Conference. At the reception I met Walter Woods, Links Superintendent of St. Andrews. Walter is Vice President of SIGGA and a most gracious host. Not only was Walter hosting the Greenkeeper Conference and Tournament — he made each individual feel welcome. In addition to all this, he was preparing the course for the Dunhill Classic to be played

the following week. Just to say Walter is a remarkable person is an understatement. When meeting Walter one soon realizes that these great golf courses are in caring hands. Just like Walter's hospitality, the playing surfaces at St. Andrews were of "top quality."

James Neilson, President of SIGGA, Greenkeeper at Murryfield; the Directors and Committee people did an excellent job of putting this conference and tournament together. We were flattered by being invited to Ransome's Greenkeepers/Superintendents Golf Tournament banquet. The Tournament was played on the "Old Course" and was won by Canada. Scotland was second and the USA third.

Prizes were presented by Sir John Carmichael, KBE Chairman at St. Andrew Links Trust. A toast was proposed by Mr. F. Guy Catchpole, Sales and Marketing Director of Ransome's. Reply on behalf of the guests was made by Mr. Keith MacKenzie, OBE, MC., past secretary of the Royal and Ancient Golf Club. In his reply he stressed the importance of young people being involved in the game of golf — a cause that all of us connected with the game should easily relate to. Mr. MacKenzie pointed out we all share a responsibility in this ongoing goal.

Every course and club we visited we found people were proud of its heritage and in love with the game of golf. This was exemplified by Mr. Tom Shiel who took us for a walk through the history of Carnoustie Golf Course after we played there. Mr. Shiel, a native of Scotland who lived some years in the United States, is the Professional at Panmure Golf Club and teaches and is a member of Carnoustie. He remembers and can relive each tournament, every great shot. Carnoustie is the site of five Open Championships.

Our next stop was Glen Eagles — a great golf course in superb condition. Glen Eagles is set amid 610 acres and is surrounded by unspoiled countryside. We played the Championship Kings Course. The beauty of the course is beyond description — something you must experience for yourself. After golf we met Jimmy Kidd, estate and golf course manager. After a tour of the hotel and grounds it is

readily evident the large responsibilities he has, and the fine job he is doing.

Anyone who has been to the Midwest Regional Turf Foundation meeting at Purdue University has met John Souter. John, a Landscape Architect involved in sports fields and golf course remodeling, has now designed and is building a golf course in Ballindalloch, Scotland. John showed the design to us over refreshments at Glen Eagles. We all share his enthusiasm and it appears to us that this course will take its rightful place in Scottish golf.

The next course we visited was Royal Dornoch — home of Donald Ross. A great golf course you must see — great designs, entrenched in history. This was not just a round of golf — it was an adventure.

We played many great golf courses and could easily write an article on each one — such tradition we found at Muirfield, Royal Troon, Prestwick and Turnberry. We played 16 rounds of golf on 15 golf courses in 14 days. We played 288 holes of golf, never found a weak course or played a poorly designed golf hole.

Turf in Scotland

The turf in Scotland is bentgrass on greens; bentgrass, annual meadow grass (**Poa annua**) and fine leaf fescues on tees and fairways. Bentgrass was predominant over **Poa annua**, this should tell us something about our fertilizer program as very little is used in Scotland. Soil pH was 4 and this seemed to be a goal that many try to achieve. We understood this was a level they wish to maintain. Lies on fairways were tight. Greens were not as fast as we were accustomed to but many courses were spiking and/or top-dressing. Much rain had fallen in the previous weeks. They were still very good and when dealing with the severe contours of the surfaces and the approach shot required to the greens — the greens were in keeping with the average golfer's ability.

Golf Course — Predominant Features

Bunkers on the golf course were magnificent. They were mostly deep bunkers with straight faces made with stacked sod. To hit a ball in them was a lost stroke.