An Adventure in Life–

(Continued from Page 20)

life. You are expected to live with and care for your parents until they pass away. At 18 years of age you do not leave home, you live at home until your parents pass away. I believe this tight family structure is a major reason why few gangs are evident in Hong Kong. Children all are required to attend schools in a school uniform. To cut down on the number of schools needed, schools operate under the two-shift program. The school day starts at 6 am, and ends at noon, or starts at 1 pm and ends at 7 pm. Twice as many students are able to attend a school under this program. Which program the student attends is determined by the school administration, and not subject to change. Students are required to learn and study the English language; most university classes are taught in English. Being able to speak the English language is very important to the Chinese, especially the young Chinese population.

Most middle class people live in flats; we would call them apartments. Most apartments average less than 700 square feet in size. Appliances are small to accommodate the small room sizes. Without a lot of storage, little food is kept or stored in the home. Thus, most Asians shop at a local market or fresh food market on a daily basis. The standard procedure is for someone in the household to shop at the local market on the way home from work. Local grocery stores stock very few frozen and pre-packaged food products. You decide on the meal based on what looks good in the marketplace. The Chinese use going out to eat as a form of entertainment. Eating out is very inexpensive, and with the long workdays, eating out is very popular. For many, a social event for the evening is eating at a small local eatery or restaurant. Most small eateries have less than 12 tables total. The food is fresh, very good, and very inexpensive. Two people eating out at a small restaurant can have an entire meal including drinks for less than $10 US.
Televisions and computers are not widely used by the Chinese as a source of entertainment, so eating out is the social event in most of their lives. Most Chinese people are unhappy and seldom smile due to their work situations. The Chinese are very serious; most must work at least 10 to 12 hours a day, 6 days a week. Humor and any type of teasing is in short supply. One of the first days on the job I was touring on the courses with one of my assistants, and after two hours of conversation, his comment was I don't understand your American humor. It takes quite a long period of time for the people to warm up to any type of teasing and humor. They take the spoken word very, very seriously. The only time I have witnessed much laughter was when our shop dog, Rambo, a Black Lab, was seen chasing a small brown monkey across the 18th fairway on the New Course. The monkey had decided to visit a dumpster at our maintenance area until encountering Rambo. Seeing a Black Labrador at full speed chasing this brown monkey across the fairway was funny indeed. Never knew monkeys could move so fast!

Meeting, working with and learning about the Chinese people has been pleasurable, interesting, sad and at times frustrating. But a very important and critical part of managing golf courses in Hong Kong.

MINNESOTA IN THE CROSSHAIRS

The New Patch In Town and EAB Revisited

By Paul Diegnau, CGCS, Keller Golf Course

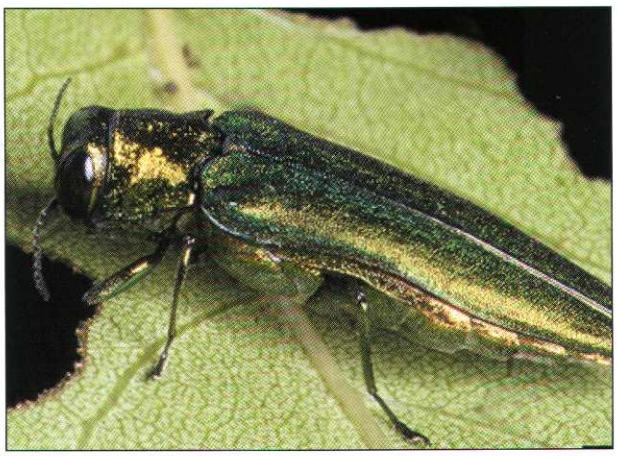
Emerald Ash Borer continues its unstoppable move westward. On June 13 of this year, EAB was found in a suburb of Chicago, Illinois. On July 13, a second infestation was found north of Chicago. Illinois is now the fifth state to succumb to the advance of this insect. The other infested states include Michigan in 2002, Ohio in 2003, Maryland in 2003, and Indiana in 2004. Currently there are approximately 40,000 square miles of infested land in the U.S. and Ontario, Canada. Potential costs of EAB are estimated to be in the hundreds of billions of dollars if this exotic pest continues to spread across the U.S.

EAB Adult Beetle

Obviously this little borer is a big deal, especially with ash species comprising a significant portion of the urban landscape in Minnesota. Most experts, using currently available information, believe this pest will not be stopped. The biggest problem we face on the EAB front is keeping infested firewood within quarantined areas. The female EAB can only fly about one-half mile on her dispersal flight so the natural spread of this pest is relatively slow. Man, on the other hand, can move infested firewood great distances in a short amount of time. The key to slowing the spread of EAB is containing the movement of firewood.

Larval channels from EAB

Raising public awareness can also be effective in slowing the spread. Current thinking suggests that EAB was in the Detroit, Michigan area for possibly ten years prior to discovery. As some "experts" have speculated, EAB may already be in Minnesota. Do what you can to educate and inform the people you come in contact with. An informed public brings many eyes into the outdoor world. The Asian Long-horned beetle outbreak that occurred in the Chicago area several years ago was contained with the assistance of informed city residents. Press conferences, beetle hotlines, and a massive public education campaign did the trick.



D-shaped exit hole of EAB adult

For my final point let me quote Mark Stennes, plant pathologist and ISA Board Certified Master Arborist with S&S Tree Service. At a recent MTGF board meeting, Mark made an emphatic plea to the board members to "STOP PLANTING ASH TREES!!!" His position is simple…EAB will eventually get to Minnesota and the impact this insect will have on our ash trees will rival, if not exceed, what Dutch Elm Disease did to elm trees in the 1970's. Plant other species on your golf course and avoid the eventual removal costs, replacement costs, and heartache. Mark highly recommends 'Princeton' Elm as an alternative. If Mark's comments didn't get your attention, here are some comments off of "Turfnet" from several Michigan golf course superintendents who are currently in the thick of things:

"It has devastated Michigan and you can count on every one of your Ash trees getting infected. It's worse than DED for sure."

"I watched every Ash tree at my golf club get infected and die in less than 2 years. Don't buy the hype that insecticides will work ... they don't."

" The park system I now work for has taken down nearly 9000 ash trees to date in the thirteen parks that we have. It is a destructive insect that kills an untreated tree quite rapidly."

Waitea What?

This summer, a new turfgrass disease has been showing up all across the U.S. It made itself known here in the great state of Minnesota in June. I believe Keller GC experienced an outbreak in late June (see photo) and I know at least five other golf courses dealt with it, several having its identification confirmed by a pathology lab. It is a relative of the Rhizoctonia family and goes by the common name of Waitea Patch. The scientific name of this pathogen is, depending on whom you talk to, Waitea circinata var. zeae, Rhizoctonia circinata var. zeae, or simply Rhizoctonia zeae. The rings are between four inches and two to three feet in diameter and the centers of the patches are usually green and healthy. The primary turfgrass affected is Poa annua but it can be found on creeping bentgrass. The symptoms can resemble yellow patch (Rhizoctonia cerealis) but this pathogen occurs under much warmer temperatures. It may also be mistaken for fairy ring but diagnostic results from across the country are not finding fairy ring fungi.

Waitea Patch?

The good news is that standard Rhizoctonia fungicide treatments are effective in controlling this disease. Banner MAXX, Medallion, Endorse, and Heritage showed the best control in trials conducted at Torrey Pines in California.

(Editor's Note: For additional information, check out: www.paceturf.org (Pace Turfgrass Research Institute) http://hcs.osu.edu/sk/

PART I

What Kind of a Toad is a Nematode?

By D.H. MacDonald, Department of Plant Pathology, and
D.B. White, Department of Horticultural Science, University of Minnesota, St. Paul

That was a question that I really was asked years ago by a lawyer who, to his credit, was trying to make polite conversation while trapped at his wife's Paulson family reunion. How would you have answered that question? Would it have been sufficient to have stopped after saying something about the large roundworms that parasitize insects and animals? Would Jerry have been interested in hearing that nematodes are really very abundant organisms occupying second place after insects in terms of the number of different kinds? Could I have kept his attention long enough to tell him that if the physical and all other biological characteristics except nematodes of Planet Earth were to disappear, that an image of the planet would still be present? That image would be composed of nematodes had inhabited the seas, fresh waters, other organisms including plants, and soils of the planet. Would he have been interested in learning that one type of plant nematode, the root-knot nematode, has been identified as being one of the top five pathogens that is limiting food production at least in the warmer parts of the world? Well, I suspect that any response of any substance would just have elicited a big yawn from Jerry.

Nematodes have been and remain pretty much "second class pathogens" even in Departments of Plant Pathology and certainly with northern golf course superintendents for whom the fungi have typically been considered to be the most important causes of plant diseases. So why did the University of Minnesota choose to hire its first plant nematologist rather than a turfgrass pathologist back in the 1950's? There weren't any plant diseases in the 1950's in Minnesota that were recognized as being caused by plant nematodes! And there would not be any until 1978 when the presence of the soybean cyst nematode in the state was finally recognized. The answer to that question at that time was based primarily on the premise that every well-rounded graduate of the U's Plant Pathology Department really needed to have had the opportunity to receive hands-on instruction in the relatively new academic area of plant nematology. And by hiring someone who had been trained in plant nematology and who could provide that kind of instruction it was assumed that that person would also eventually uncover some aspect of the subject that would be an appropriate area for study even here in Minnesota where plant nematodes really were believed to be unimportant. In Chapter II you will see how that belief helped provide some of the motivation that got Dr. White and me started with our studies dealing with turfgrass nematodes. And the answer to the second question is related to a recurring theme that permeates these "What Kind of a Toad is a Nematode?" discussions. Compared to the present, it seemed like it was easier to take care of turfgrasses back then in the 1950's, 60', and 70's when the need to achieve adequate green speed was not such a big factor and mercury compounds took care of the snow molds and perhaps other fungi as well. The question about why a Turfgrass Pathologist was not hired at that time is at least partially answered at this point in Chapter I because that answer hopefully describes the situation in the 1950s and beyond that opens the door for us to try to build a case for a special kind of worm, the plant parasitic nematode. And finally, why did two members of the MGCSA give us the opportunity to fill more than a few pages of *Hole Notes* with information about "worms"? Has something pertaining to or affecting plant nematodes changed or is something possibly changing?

Plant nematodes are non-segmented roundworms totally unrelated to "toads." They have inhabited the soils of our planet for a very long time. This past spring a former student took the time to contact me to say that a program recently shown on Public Television contained a segment dealing with plant parasitic nematodes that had been trapped and preserved in plant resins some 40 million years ago. We can recognize a nematode that has or had the potential to be able to feed on living plant cells because it has a protrusible and typically hollow ("a micro-hypodermic needle") mouth spear or stylet. (Figure 1) Presumably that is what the student saw or possibly even what the narrator tried to call the viewers' attention to in that PBS presentation. Not all nematodes that possess stylets are plant parasites but many that do have stylets must feed on living plant cells. The anterior portion of the nematode, officially its stoma, that is "armed" with a stylet is said to exhibit the greatest amount of morphological diversity. Stylets may be "short", "long" or something in between. The nematode pictured as Figure 1, which would be much more likely to be present around the roots of woody plants in foundation plantings around the clubhouse than it would in a golf green, would be described as having a long stylet. Stylets may also be "strong", "weak" or something in between. The plant nematode that is the most often found in Minnesota's golf greens is commonly called the "stunt" nematode even though it has a moderately weak stylet (Figure 2). The vast majority of the plant nematodes have stylets that terminate in three enlargements called knobs. Muscles attached to the stylet knobs enable the organism to protract and retract its stylet. The nematode pictured as Figure 1 has rather prominent stylet knobs while the stunt nematode (Figure 2) has somewhat weaker ones. A person who identifies and counts the plant nematodes that have been separated from a soil sample will use stylet shape and size to help in the identification process. And although the ability of a plant nematode to mechanically and perhaps biochemically penetrate plant cell walls and plant membranes is essential to its survival, there does not seem to be much of a relationship between the "rigor" of a nematode's stylet and its ability to cause plant disease. The stunt nematode (Figure 2) with its rather weak stylet

Figure 1

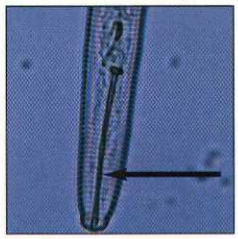
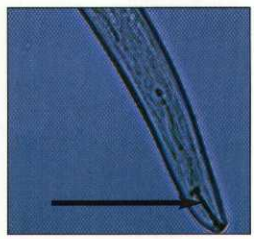


Figure 2



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Nematodes-

(Continued from Page 23)

may be able, according to Nelson (1995), to damage cool-season turfgrasses when there are 300 or more of them present in about four-fifths of a cup (100 cm-3) of soil. But 1,500 ring nematodes despite their rather impressive stylets and larger body diameter, need to be present in 100 cm-3 of soil before they can damage cool-season turfgrasses. Or, in other words, a plant nematode has to have something else going for it before it can cause plant disease. And that "something else going for it" is the "chemistry lab" that is part of the nematode's pharynx or esophagus. The pharynx or esophagus (Figure 2) occupies the remainder of the clear area of the nematode's body posterior to the stylet knobs and anterior to the typically dark and granular-appearing intestine. A gland or perhaps more than one gland produce secretions that are introduced into plant cells through the stylet that can alter the functioning or even cause the death of those cells. And if the mechanical capacity of the organism's stylet coupled with its even more important biochemical potential were not enough to be able to cause plants to "become sick", some authors even call our attention to the ability of some plant nematodes to release waste products that can elicit unwanted plant growth responses. I know some of you who are reading this article well enough that I can almost hear you saying: "Oh, come on! I have never, ever seen bentgrass, Poa annua, or any other kind of grass plant that was SICK due to the activities of plant nematodes! And furthermore, I don't expect to ever see such plants!" Okay, let's end this paragraph by rephrasing that "sick bit" for bentgrass and Poa annua by asking you to accept the fact that plant nematodes are one of the important reasons why plants can not live up to their genetic potential or, more simply, why plants can be stunted. But what about the corn plants visible in Figure 3. You would not have to wander too far on to the Anoka Sand Plain in May or June of most years to find grass (corn) plants that are "sick" due to the feeding of plant parasitic nematodes! And while we are concentrating on those sick plants, please note that healthy plants can be present right next to the "sick" ones. The needle nematode, which "all by itself" was the cause of the "sick" corn plants pictured in Figure 3, feeds on the root tips of seedling plants causing characteristic "stubby-root" symptoms (Figure 4). Plant nematodes range in size from about 0.3 mm (.01") to a maximum of 5 mm (0.2") in length. The vast majority of them remain wormlike through their entire 30 day life cycle. A thirty day life-cycle is just a starting point. During a beast of a summer when you may be having an awful time even maintaining somewhat healthy grass, the average plant nematode is probably in its ideal environment being more active, feeding more intensively, and with its life-cycle shorter than it would be during a summer when "growing grass is just a piece of cake." Their body diameters are measured in microns (1/1000 of a millimeter) making them essentially microscopic even when suspended in clear water where they will appear somewhat analogous to "flecks of dust". Some important plant nematodes like the cyst and root-knot become sedentary and enlarge. The living female cyst nematode breaks through the epidermis of an infected root becoming visible as a pin-head size lemon-shaped white body (Figure 5: five of them attached to a rotten soybean root are visible). The cyst nematodes, one species of which has been considered to be one of the most significant pathogens of soybean, are not of significance as parasites of turfgrasses in the Minnesota-Western Wisconsin environment. Although the root-knot nematode (Figure 6: the forked carrot root with the little galls or knots is diagnostic for the presence of the Northern root-knot nematode) is not one of our most common nematode turfgrass pathogens, it may be one of the more damaging. The female nematodes are present in the galls or knots. And those succulent galls that are stimulated to form by the nematode are very suitable for colonization by other kinds of soil-inhabiting organisms. If our ideas about the significance of plant nematodes on northern golf courses are in fact changing, then it is, I believe, appropriate to recognize that root-knot and other plant nematodes can and do interact with other causes of plant disease to facilitate the development of those diseases.But how can anything that small that takes so long to complete its life-cycle be significant to you, a plant person, if not to Jerry, the criminal

(Continued on Page 25)

Figure 3

Figure 4

Nematodes-

(Continued from Page 24)

lawyer? I would like you to consider plant nematodes to be just one more stress to which plants are exposed. A plant nematode is of interest to a plant nematologist because of how and where it feeds and what those physical and biochemical activities do to the plant root cells that provide the nutrients that sustain it. But individually their effects are usually not too impressive. Yes, one root-knot nematode can conceivable cause a carrot or parsnip's taproot to fork. And the feeding of one needle nematode can conceivable cause a corn seedling to develop a "stub-by-root condition" (Figures 3 and 4). But usually, as indicated by the threshold for damage populations of stunt and ring nematodes, plant nematodes need to be abundant. If it were a straw that broke the camel's back, then maybe enough plant nematodes can combine with other stresses to adversely affect the growth of turfgrasses. And for reasons that are not at all clear at this time, the nematode "straws" that can possibly break the "back" of the perennial bentgrass and the Poa annua can become very numerous in some greens or just portions of some greens. Fred Taylor, the superintendent at Mankato Golf Club, has been interested in plant nematodes for the past three seasons. He initially became interested in them because the technician at a laboratory in New York where Fred had sent a sample to have a root-rotting fungus identified remarked that the soil contained a lot of nematodes and that maybe Fred should have those nematodes identified. He accepted that advice and had our lab and another laboratory in Florida confirm that stunt nematodes were indeed present and possibly significant at the Mankato Golf Club. In October, 2005, he sampled three of the Mankato Golf Club's greens intensively by collecting soil samples from a total of 19 locations on those greens. It turned out that each of those locations contained an average of 994-1527 plant nematodes/100 cm-3 (4/5th cup) of soil. So, you say, what do such numbers possibly mean? Well, how about expressing those population estimates in another way? What if an influential member of Mankato Golf Club's Greens Committee wearing size 12 golf shoes that are about 30 cm long and 9 cm wide is standing on a spot where Superintendent Taylor sampled last fall and where one of those "average" (1260/100 cm-3) root-zone populations of nematodes existed? If the rooting depths of the turfgrasses growing at that location were 5 cm, then the golfer is standing on 2,700 cm-3 of nematode habitat. And that "prime" plant nematode habitat contains about 33,000 plant nematodes that are all trying to feed on any available and suitable grass root epidermal and cortical cells. Luckily plant nematodes are too small and too weak to be able to move soil particles. What kinds of complaints would Fred Taylor get if our influential golfer with the size 12 shoes three-putted that hole because of the wave-like undulations of the putting surface caused by themovements of all of those plant nematodes? The plant nematodes in the root-zone "horizon" actually often represent only a part of the nematode population that is present there. Nematodes that feed on

Figure 5

(Continued on Page 26)

Nematodes-

(Continued from Page 23)

bacteria, fungi, and various soil animals including other nematodes often are even more abundant in the root-zone and typically more active than are the plant parasites.

I would like to use the title of an article that appeared in a gardening magazine many years ago to try to introduce a concept that I think is quite important to remember about plant nematodes. The title of that article went something like this: "If you do everything right and still your garden fails you, maybe its nematodes!" That author did not say: "If you do everything right and still your garden fails you, well then nematodes are what ails it!" Soil samples have to be collected, processed, and the plant nematode populations described before one should even begin to think about making such a statement. Sampling for plant nematodes might be considered by some to be both an art and a science. At any rate, quite a bit was learned as the result of the sampling efforts that eight different superintendents made last autumn. What they did and the information that was gained as the result of their efforts seem to fit best in Part III of "What Kind of a Toad is a Nematode?" Please look there for our thoughts about that important aspect of plant nematology.

It seems appropriate to repeat a true "Once Upon a Time" story at this point in an effort to introduce you to some of the characteristics of the procedures that are used in nematology laboratories or plant disease clinics to separate plant nematodes from soil. We received a soil sample at St. Paul from an Iowa agronomist who asked that its plant nematode content be determined. This was done and our estimate of the plant nematode population that it contained was sent to him. Not many days later we received a rather critical response back from that agronomist who pointedly told us that he did not have very much faith in what we were doing in our "Ivory Tower" at St. Paul. He explained that we had received only half of the soil sample that he had collected. The other and, in his mind, identical soil sample had been sent to another plant nematology laboratory or plant disease clinic. He claimed that the two labs had sent him very different plant nematode population estimates both in terms of kinds of nematodes that were present and as well as in numbers. Why, he asked, should he believe an apparently erroneous

***Ms. Amy Holm,** chief diagnostician for the U of M's Plant Disease Clinic.*

laboratory report from Minnesota when the report from the lab in Iowa was so different (and undoubtedly more accurate)? I tried to explain to him that there are two main ways of separating nematodes from soil. I went on to state that there is no one best method for separating all of the different kinds of plant nematodes from soil. We used one method that we had found through testing to be best for separating the nematodes that we routinely encountered in Minnesota's soils. It is quite likely that the other lab used a very different procedure. And probably the two laboratories processed different volumes of soil. I tried to convince him that both reports were accurate and informative when each was evaluated on the basis of how the sample was processed.

But let's return to the basics. Most of the nematode population data that are reported in the three chapters of this article were obtained by using an "active" method to separate nematodes from soil. A nematode that is successfully going to exit a soil sample has to be able to move if the extraction method is an "active one". The plant nematology laboratory and the Plant Disease Clinic at the U of M at St. Paul use the Cornell pan (piepan) modification of an earlier technique that is known as the Baermann Funnel Procedure. Ms. Amy Holm, chief diagnostician for the University of Minnesota's Plant Disease Clinic, is shown above using the Cornell piepan equipment. The bottom of the top piepan has been removed and replaced with a coarse screen. Three layers of porous filtering materials (milk filter and 2 layers of facial tissue) are placed on the screen. A thin layer of 50 cm-3 of sieved and mixed soil is placed on top of the filtering materials. The modified screen-bottom piepan that contains the filters supporting the soil sample is placed in an intact piepan that contains cool tap water. The layer of soil becomes saturated and open spaces between soil aggregates and particles are flooded. Plant nematodes are sluggish animals and do not move fast enough to swim. They can move by pressing against solid surfaces. When they reach water-filled spaces they slip, slide, and settle under the influence of gravity. e more active plant nematodes like the stunt nematode (Figure 2) begin to exit the soil layer and pass through the filtering materials into the bottom or intact piepan within about 12 hours after the "system is activated". More sluggish individuals like the ring nematode may take several days to exit the system. Plant nematodes are given a total of 7 days to make their exit from the layer of soil through the layers of filtering materials into the bottom piepan in our laboratory. The liquid in the bottom piepan containing soil-inhabiting nematodes and other animals is then decanted into a beaker where the nematodes are concentrated. I then take a representative 8-milliliter subsample from the liquid in the beaker to provide the nematodes that are to be identified and counted.

A passive method of extraction is used by many nematology laboratories and plant disease clinics. Nematodes contained in a soil sample are suspended in a quite concentrated (about 3/4th pound of sucrose/quart of liquid) sugar solution. Nematodes are only slightly heavier than water and will remain suspended in the sugar solution while heavier soil components may be "pulled down" by centrifugation or by the actions of a flocculating agent. The nematodes that remain in the clear "supernatant" are then separated from that toxic sugar solution (it would plasmolize them if they remained in it too long) by sieving. Sieves that are used to "catch" the plant nematodes have openings of about 35-54 microns. I call these rapid procedures that take only 10-15 minutes to complete, passive methods because dead or inactive as well as live nematodes may be "floated-out" of soil without their having to move at all. There are a number of procedural variations of these two main (active and passive) methods and/or combinations of the two that various nematologists have developed to meet their own particular needs. It is not surprising that different estimates of the kinds and numbers of nematodes that are present in even "identical" soil samples can be obtained when such different procedures are used.

(Editor's Note: Part II of "What Kind of a Toad is a Nematode?" will summarize what we did beginning in 1969 when we first attempted to learn something about the plant nematodes that inhabit Minnesota's golf greens.)

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Musing the Minutes

By MATT McKINNON, MGCSA Secretary

The MGCSA Board of Directors met on June 19 at Somerset Country Club.

Paul Eckholm, CGCS reported that the expenses for the association are below what was budgeted. Paul also reported that there is a CD that is going to mature and he would like to look at other opportunities to help this money get a better return for the association. Scott and Paul will look into it.

Scott Turtinen reported the Turf Tourney brought in $14,000 this year. Scott also presented a list of clubs in Minnesota that do not have someone with a MGCSA membership. A motion was made to send a letter and a copy of *Hole Notes* to all clubs on the list. There was an amendment to the motion that since 2006 is half over that the dues would cover through 2007. If you know someone at another club that is not a member of the MGCSA, please talk to them and let them know the benefits of the association.

If you know someone at another club that is not a member of the MGCSA please let them know the benefits of the association.

President James Bade reported that Paul Diegnau has done a great job in setting up the speakers and seminars for the upcoming Green Expo. James also reported that the MGCSA has purchased a rain shelter and is loaning it to the U of M for research in the field.

Eric Peters reported that there were 32 teams for the Scholarship scramble. MGCSA took in $3,000 to $4,000.

Eckholm mentioned that the MGCSA website has links to everything in the Environmental Report from the association.

I hope everyone is surviving the hot, dry season that 2006 has brought us. I think the last two years we were asking for a warmer spring but not a drought to go along with it. Fall will be here before we know it.

Membership Report

June 19, 2006 - New Members and Reclassifications

Rochel Kuske
Class C - GCSAA
Bristol Ridge Golf Course
Somerset, WI
W: (715) 247-5778

Michael Copley
Class D - GCSAA (pending)
North Oaks Golf Club
North Oaks, MN
W: (651) 484-0528

Charles J. Fischer
Student
The Minikahda Club
Minneapolis, MN
W: (612) 926-0602

Hannah Orr
Class D - GCSAA (pending)
Oak Ridge Country Club
Hopkins, MN
W: (952) 938-6900

Mark Christianson
Affiliate
Tiziani Golf Car Corp.
Bloomington, MN
W: (612) 963-5331

Joe Edberg
Affiliate
Tiziani Golf Car Corp.
Bloomington, MN
W: (952) 445-0943

Drew Ekstrom
Affiliate
Tiziani Golf Car Corp.
Bloomington, MN
W: (612) 853-9836

Ross Pudenz
Affiliate
Pudenz Irrigation, LLC
Durand, WI
W: (715) 672-3364

Jim Stoller
Affiliate
Greenjacket
Genoa City, WI
W: (888) 786-2683

Doug Suttor
Affiliate
Quali-Pro / a division of Makhteshim-Agan Ind.
Seattle, WA
W: (616) 403-3983

Reclassifications

Jason M. Ruhoff
Koronis Hills Golf Course
Paynesville, MN
SM to A

Michael Tusa
Brooktree Golf Course
Owatonna, MN
C to D

Guy Lohman
A to Retired
H: (715) 259-7825

- Respectfully submitted by
Jeff Vinkemeier. Membership Chair

In Bounds: Perception is Key

By JOHN "JACK" MacKENZIE, CGCS
North Oaks Golf Club

As a child I remember road trips from sea to shining sea inside a Country Squire station wagon smooshed between my brothers Curt and Rob. The blend of body odors (roll down the windows please), loud radial tires (a new product at the time) and many stops at Stuckys (for peanut brittle) made time zip by, as did the 75 mile per hour speed limit upon the interstate freeways. As a child in the late sixties I perceived that we were almost flying from city to city.

Then in 1973, shortly before I earned my driver's license, President Nixon put the kibosh on speed and dropped the limit to a 55 maximum in order to conserve gasoline, a precious resource. Wow, did it suddenly take a lot of time to get anywhere! Courtesy of fuel efficient cars, the limit was raised in 1986 to as high as 70 MPH dependent upon the road traveled. And there it remains today.

Compared to the mid-seventies, we are again moving quickly to our destinations, but compared to last week and the month before that and the year before that, 70 miles per hour has become a very standard and often perceived sloooow speed, especially judging from the many who drive in excess of the limit. But in reality, 70 miles per hour is 70 miles per hour.

Sometimes the journey goes fast, and sometimes slow dependent upon the weather, the travel into or away from the sun, the company kept and the fellow travelers upon the same highway. However, 70 miles per hour stays at 70 miles per hour. Maybe it is the perception of speed that changes dependent upon the attitude pf the driver?

The seventies brought about another speed change. In 1977 the USGA introduced a tool to measure the speed, or how far a ball would roll from a furrowed, yardstick like device that releases a ball when tilted to a given pitch. Called a stimp meter, it was intended to be used to gauge the differences in speed from green to green in an effort to improve consistency. It has since been used to determine how fast a green will roll.

When first introduced, the range of speed broke down this way: slow = 4.5 feet, medium = 6.5 feet and fast = 8.5 feet. Remember that was during a day when greens were mowed at .25 inches and cultural practices were not as intense as they are today. In fact, player expectations were at a much different and lower level than they are now.

The current stimp meter ratings are slow = 6.5 feet, medium = 8.5 feet and fast = 10.5 feet. For the past several years and on a day to day basis during peak golfing periods, we have maintained a speed of 9.5 feet to 10.5 feet. Of course if weather conditions generate a surge in growth or we are forced to skip a day in the mowing cycle the greens will be slower than when we are on schedule.

We maintain our greens at a speed considered pretty good by the USGA. Our height of cut is less than one eighth of an inch. We top dress regularly and roll the greens almost every day. Even through the implementation of these programs I still hear from some the comment that the greens seem slow. How can that be? Ten feet is ten feet. And to be honest, I am very conservative in my readings.

I believe that perception is the key to green speed. Green grass equates to slow speed. High humidity equates to slow green speed. Slow play equates to slow green speed. Tall rough equates to slow green speed. A bad round equates to slow green speed.

And just as relevant is the converse perception, tournament play equates to fast green speed, guest days equate to fast green speed and a good round equates to fast green speed.

It is funny how times have changed. For events such as guest days, championships and other special times, I can't just go out, double cut and or double roll and get the dramatic speed increases I could a decade ago. In the 1990's I could squeeze at least a foot or more from my surfaces in a pinch using a variety of methods. Then again, nine feet on the stimp was our daily goal.

Player perception and expectations have certainly raised the bar. By maintaining the greens at their limits we have lost our wiggle room, our ability to twist them up at a moments notice. On one hand it is nice to have reasonably consistent green speed, but on the other I sort of enjoyed putting the screws to the players, er I mean greens.

I remember hosting my first State Amateur back in 1985. Our "fast" nine foot greens were slow mowed and double cut starting four days ahead of the event. According to my journal the speeds topped out at 12 feet and almost every one of the proposed final day cupping locations were lost. Two scores broke par during the whole event. Afterward I backed off of the greens and brought them quickly to somewhere around nine feet again.

Could I do that today with normal stimps somewhere around ten feet? Probably, but at what cost to the plants. Unlike in '85, I would not be allowed to decelerate them back to nine. What kind of a risk would I be willing to take for a short term boost in my ego?

Thus in reality, we don't do a whole lot different to our greens on a day to day basis to speed them up for special events. At the height of cut we maintain and the negative impacts upon the turf high speed creates, it isn't worth the short term gain. Especially since the long term health of the plant could be compromised. And any set back when managing on the edge is too risky for me. Besides, player perception of a "special event" adds six inches to my speed without taking a machine out of the shop

Speed is like time. All too often perception overcomes reality. Sometimes my drive home seems to take an hour, but actually it only takes around 22 minutes. And at times when I cut cups the greens look slow, but after I stimp them I am brought back to reality, they are just fine.