"Green is Beautiful"

Ontario Golf Superintendents Association

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JUNE 1986

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CINDI CHARTERS

"Green is Beautiful" Editor, Neil Acton C.G.C.S., seen here accepting Best Format Award from James M. Taylor, Sr., C.G.C.S, at the International Turfgrass Conference and Show in San Francisco.

From the Editor

This dry and early spring has been a real salvation for those superintendents (myself included) with construction projects on the go. It has also resulted in most courses being in optimum shape quite early in the season, a great bonus for the golfers.

All in all, all indicators seem to point to prosperity for the golf industry in Ontario. Let's ensure that we, as professional golf course superintendents, stay on the cutting edge of this growth, participate in your associations and stay current.

Neil Acton C.G.C.S.

"Play Ball"

30 O.G.S.A. members, wives and guests attended the Blue Jay outing organized by Scott Dodson and Thom Charters. The weather co-operated as did the Blue Jays, soundly thumping the visiting Indians 10-2. It was a most enjoyable outing and it should receive even better support next season. My only suggestion would be to put an elevator in our section if they make us sit that high again. The beer was warm by the time we got it back to our seats.

Weather in Review

		February	March	April
Average Daily Low Temperature		-9.2	-4.8	3.8
Averge Daily High Temperature		-2.9	6.1	13.0
Mean Temperature		-6.0	1.1	8.4
Normal Temperature		-4.5	.4	7.1
Percipitation	rain	4mm	7.2mm	38.8mm
	snow	16cm	8.4cm	5.5cm

Region One News

By Ron Heesen

On April 15 Ontario and Michigan Superintendents gathered at Dominion Golf Club in Windsor. It was a little rainy in the afternoon, but that didn't dampen the spirits of the 110 who attended or the 75 who played golf. Dan and Dorothy Uzelac, always the perfect hosts, outdid themselves again. We were treated to a super lunch, greens that were like mid-summer condition wise, a steak dinner and a Dominion Golf Club golf shirt. We can't thank the Uzelacs enough for their hospitality.

Labatts Breweries sponsored this event by supplying beer and prizes for all the participants. Ernie Bezaire of Labatts, our thanks to you.

This meeting is a great way to start the season and is always special because of the comaraderie shared with our fellow Superintendents from Michigan.

Good luck to all the Superintendents in Region One in the upcoming season.

OGSA Fixture Sheet

Thurs. June 12	Spring Field Day	Victoria Park
Thurs. June 26	O.G.S. WOGSA	TBA
Thurs. June 26	Region 1 Meeting	Strathroy
Mon. July 14	Pres. G.C. Super.	Credit Valley
Tues. July 22	Region 3 Meeting	Caledon
Tues. July 22	Region 4 & GBSA	Midland
Thurs. July 24	Region 1 Meeting	Thames Valley
Thurs. Aug. 7	Region 2 & WOGSA	Beverly
Mon. Aug. 11	OTRF Tournament	National Boff
Thurs. Aug. 21	OGSA Super/Pro	Peterborough
Wed. Sept. 10	Best Ball	Uplands
Mon. Sept. 15	Region 1 Meeting	Huron Oaks
Thurs. Oct. 2	CGSA Fall Field Day	Kanawaki
Mon. Oct. 6	McClumpha	Maple Downs
TBA	GCSAA seminar	Brampton
Wed. Nov. 5	Region 2 Election Meeting	Beaverdale
Wed. Nov. 5	Region 3 Election Meeting	Derrydale
TBA	Region 1 Election Meeting	TBA
TBA	Region 4 Election Meeting	TBA
Thurs. Nov. 20	William Sansom Day	B of T
Tues. Dec. 2	OGSA/OTRF Annual Meeting	Wyldewood
Sat. Dec. 13	OGSA/WOGSA Xmas Dance	

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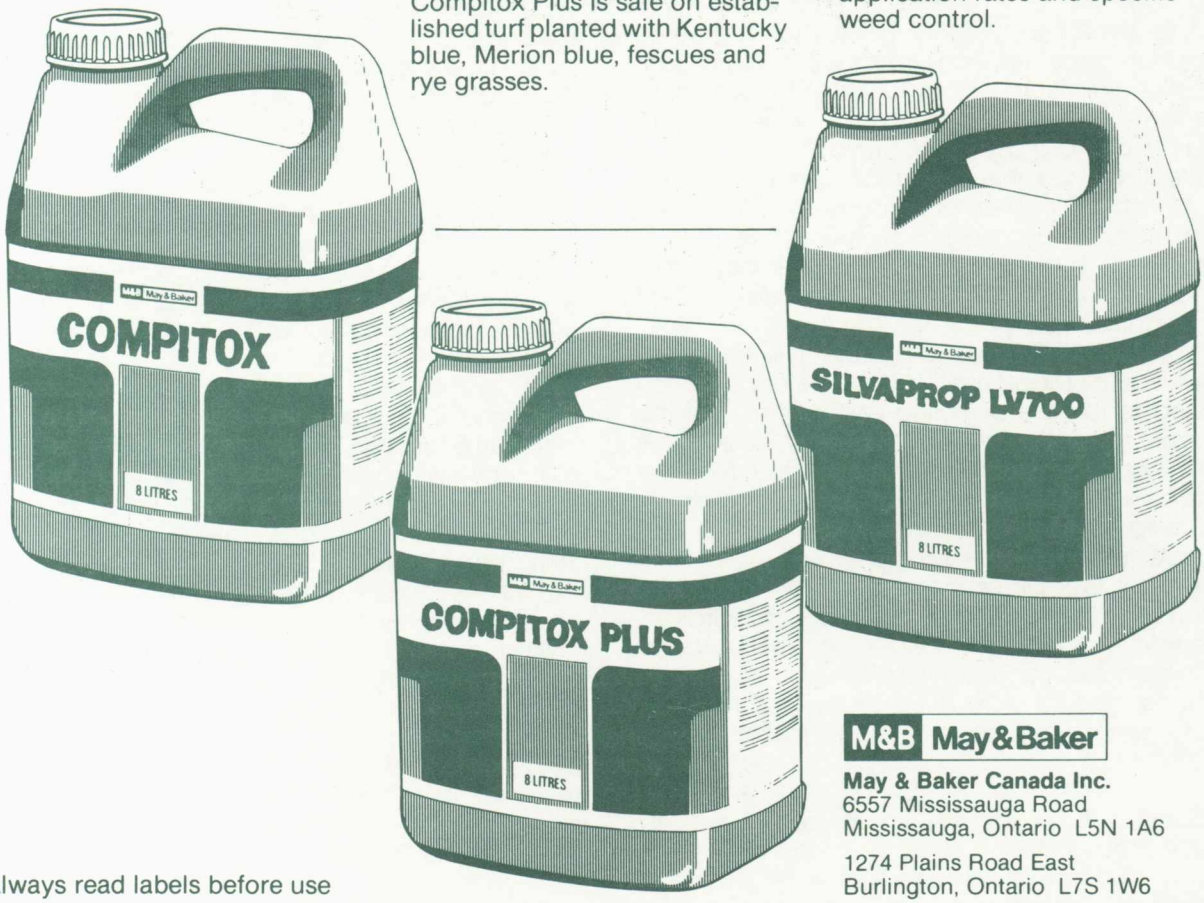

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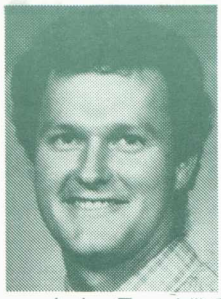
NEW DIRECTORS FOR '86

REGION 1

Rod Trainor - St. Thomas Golf and C.C.

Rod was introduced to the profession while living with his armed forces family at Canadian Forces Base Greenwood. He worked summers at the Annapolis Valley Golf Club before packing up his bags and trekking points west where he joined Sid Puddicombes staff at Mayfair Golf Club in Edmonton. Not one to sit still, Rod moved to Toronto the following season to work at Bayview with Ed Ortlieb. An Assisstants position under John Smith at Wyldewood lured him away for a few seasons. His first Superintendents position was at the Chippewa Country Club Estates in Southampton. Rod moved to St. Thomas to take over from Tom Unsworth in 1982.

REGION 4



Dave. W. Gourlay Jr. - Ladies Golf Club of Toronto

Growing up on the grounds of the exclusive Thornhill Golf Club certainly influenced Dave's decision to make Professional Golf Course Management his career. Since working as a youngster for his father at Thornhill, Dave has amassed a very impressive scholastic and work record. He completed the Guelph Short Course in 1976 and went on to receive his Associate Diploma in Agriculture in 1979 from Guelph as well. That same year he went to Penn State for one year before transferring to Texas A&M where he completed his B.Sc. in 1981. Along the educational route, Dave received scholarships from the CTRF, GCSAA and Trans Mississippi Turf Foundation.

His work record is as equally varied. He has worked at Thornhill C.C., Glen Meadows G.C. in Calgary, Bayview, USGA Green Section, Hamilton C.C. (Assistant) and his present position as Superintendent at the Ladies Golf Club of Toronto.

Dave and Barbara, herself being experienced in professional turf management, have 2 young children, Lindsay and Matt.

GREEN SLICK AS GLASS?

LOF Puts Old Expressioin To The Test

Every golfer knows what it means when a green is "slicker than glass". It means trouble. But Golf Digest, with a little help from Libbey-Owens-Ford Co., tried to put some precision in the golfer's cliche by comparing glass and grass mathematically.

For its June issue, the magazine commissioned a series of tests on a variety of surfaces: marble ("faster than a marble staircase"), pavement ("like putting on concrete"), a billiard table ("smoother than a billiard table"), and a tub of molasses ("slower than molasses in January").

To get comparative speed figures for its tongue-in-cheek test, Golf Digest used a Stimpmeter - a device designed to release a rooling golf ball so that the distance it rolls indicates the "speed" of the surface. Most golf greens allow the ball to roll 6 to 8 feet, the magazine said, but some very fast greens might register up to 14 on the Stimpmeter.

So, how fast is glass versus grass?

To find out, Golf Digest contacted LOF's corporate headquarters in Toledo, and after some consultation, the company's management decided there was no harm in the project and allowed the test to take place on a huge sheet of glass at its Rossford plant.

An LOF employee, Leonard Klaege, performed the Stimpmeter test, and the magazine recorded the result:

Reading: 468.7. Summary: For this report, we rely on our correspondent, Mel Barger, who supervised the tests . . 'The ball travelled fast out of the Stimplmeter and did not appear to be slowing down much by the time it reached the edge of our 26 foot, 8 inch piece of glass. According to our stopwatches, the ball travelled this distance in 5.001 seconds, so you can relate that to the speed of other surfaces. We also noticed that golf balls don't roll smoothly on glass. The dimples on the balls apparently make them sort of bounce along.'"

The magazine concluded that molasses in January is indeed slow. The ball travelled only two inches. "What's appealing about the surface, however, is it putts so true."

The magazine's "scientific" findings were clouded somewhat by circumstances.

The 68.5 reading for a marble staircase, for example, was expurgated to keep the ball from rolling through thd 300-year-old Chinese vase.

The billiard table only rated 5.9 because "the Stimpmeter scored a Titleist 3 in the corner pocket".

And the slopping of the New Jersey Turnpike could have accounted for its high reading of 17,462. "Following in a car we observed the ball accelerate near the Newark, N.J. exit on the turnpike, then roll steadily to a point opposite several Elizabeth, N.J. chemical plants, where it passed through a patch of lavender mist and disintegrated."

The results of the tests, the magazine said, "suggest that the poetry of putting and the science of speedometry cannot be mixed."

Credit: Divots

1986 Canadian Turfgrass & Trade Show

By Alex La Belle

The main reason, as I understand it, that the Canadian Conference hasn't been held in Ottawa before was because of the lack of facilities. Well that problem has been most formidably addressed. There are so many positives to the Ottawa Congress Centre that it may serve as a model for future shows. The fact that it is centrally located and is easily accessible from any area of the city is just one advantage. The hotel and major shopping complex adjacent to the centre reduce the hassle and expense of travel to a minimum. There are many fine restaurants and scenic attractions within easy walking distance providing a variety of diets and vistas. The proximity of lecture halls and show room made it easy to pass back and forth from one to the other quite leisurely.

Bobbie Gee has a presence that compells attention. Mrs. Gee's keynote address brought a sense of pride to the surface in a group of modest individuals who tend to hide their light under a bushel. It's okay to think you're great, you're wonderful and vitally important. It is up to us to find a method to subtly advertise this fact.

The French-English translation that was available and close association of Quebec more than doubled the participation from that province making it a truly Canadian Conference. I felt that the lectures provided a wide range of topics satisfying a variety of needs.

The equipment show was up to its usual high standards and excellent service. I had an opportunity to speak with some people and find out their impressions of the facilities. The main concern seemed to be the fact that the smaller equipment couldn't be lifted from the low trailers up to the docking platforms. The result was a lengthy wait for the service elevator. Once inside though, the ramps made for easy access to the spacious show room. The other fly in the ointment, once you learned your way around the confusing traffic pattern, was the $24. a night parking fee for the trailers. With so many golf courses in the area, perhaps arrangements could be made to park the trailers at the courses as Bill Rowat suggested.

Much credit must go to the Ottawa Valley Turfgrass Assoc. and the Quebec Superintendent's Association for their help with the organization of events and sponsorship of the Monday Night Bash. Perhaps it is time to look for a jointly hosted Bash represented by more than one company. When you consider the $4,800. spent by our hosts on Monday night with no avenue of recovery; it really is a lot to ask of two small associations.

I'm looking forward to New Brunswick next year after Blake Palmer's inviting slide show. Ottawa was a good experience and I for one, will definitely go the next time the capital rolls out the welcome mat.

Georgian Bay

Superindent's Association Golf Days 1986

June 17	Brooklea Golf & Country Club Host-Neil Action, C.G.C.S. Tee Off - 1 p.m. Guest Speaker - Thom Charters
July 22	Midland Golf & Country Club Host - Alex La Belle Tee Off - 1 p.m. Joint OGSA Region 4 Meeting Guest Speaker - Teri Yamada
August 19	Circle Pine Golf & Curling Club, Borden Host - Ray Richards Tee Off - 1 p.m. Guest Speaker - Ted Hartwell
September 16	Horseshoe Valley Resort Host - John Hughes Closing Event Tee Off - 1 p.m. Guest Speaker - T.B.A.

All events carry a $15 fee which includes golf, prizes and dinner.

Late-Season Nitrogen Fertilization

John R. Street, Ph.D., Associate Professor, Ohio State University

It has been pointed out that heavy nitrogen fertilization during the spring and summer is undesirable for cool-season turfgrasses. Nitrogen fertilization has proven beneficial during the late fall (late season) on cool-season turfgrasses (Powell, Blazer and Schmidt). Decreased disease, improved stress tolerance, and increased rhizome and root growth are among several of the claimed advantages to the "late season" nitrogen fertilization program. The late-season program is based on differences in optimum temperatures that exist between (1) root-rhizome growth versus shoot growth and (2) photosynthesis versus respiration.

Shoot and root growth of cool-season turfgrasses occur most readily in the temperature ranges of 60-75°F and 50-65°F, respectively. Root growth of cool-season grasses will continue at soil temperatures close to freezing (Koski, 1983). Shoot growth will cease at higher temperatures than that for root growth. Late-season nitrogen fertilization capitalizes on this differential. Under late-season fertilization, nitrogen applications should be made when vertical shoot growth has stopped, but the turf leaves are still green to produce carbohydrates via photosynthesis. Air temperatures of 45-50°C are usually necessary for vertical shoot growth stoppage. *It is important to understand that since temperatures will be at a point causing stoppage of topgrowth, roots, rhizomes and stolons will capitalize on any applied nitrogen.* The carbohydrate produced will be more efficiently used for root, rhizome and stolon growth during the late fall and winter periods. It is critical that the nitrogen be applied prior to dormancy for maximum efficiency of applied nitrogen. Once the tissue has turned brown, photosynthesis will no longer occur. "Late-season" fertilization is not dormant fertilization.

During late fall, photosynthesis is higher than respiration for cool-season grasses. With green tissue, photosynthesis will occur readily at low temperatures. The high net photosynthesis during late season leads to maximum carbohydrate production and carbohydrate storage for reserves. The positive carbohydrate balance favors root and rhizome growth over topgrowth since air temperatures are well below that considered optimum for shoot growth.

Nitrogen applications during the late season if timed properly will extend the greening of the turf later into the fall and winter. Spring green-up will normally occur earlier. The green turf is photosynthetically active favoring a positive carbohydrate balance. Late-season nitrogen fertilization increases the "green-growing" period of the turfgrass plant later into the fall and earlier in the spring. Physiologically, this is a positive agronomic practice.

The most efficient nitrogen fertilizers for use in late-season fertilization programs are those independent of temperature for nitrogen release. Soil temperatures and microbial activity are low at this time of the year resulting in less efficiency from methylene urea and other temperature-dependent fertilizers. Urea and IBDU are fertilizers that are independent of temperature for nitrogen release and, therefore, make for excellent late-season nitrogen sources. IBDU, having a slow-release characteristic, will not cause surge growth even if misapplied (e.g. too early) in the late-season program. Nitrogen is a key component of turfgrass fertilization programs. It has an influence on both the morphology and physiology of the turf plant. High quality turf exhibiting acceptable green color and density requires periodic applications of nitrogen. Nitrogen, however, is frequently referred to as the "TNT" of turfgrass fertilization programs. It can be just as detrimental as beneficial if it is mismanaged. Physiologically, the turf manager must maintain a good carbohydrate reserve. Proper timing and rate of application are important in successful long-term programs. Always remember: greener is not always better. A happy medium must be reached between agronomics and aesthetics.

Credit: Our Collaborator

New Method Controls Birch Leaf Miner

The birch leaf miner, known for its damage to the health and beauty of birch trees, now can be controlled more effectively through a new use for a proven systemic insecticide, Cygon 2E.

Because the larvae of the birch leave miner sawfly burrows inside the birch leaf, it is protected against conventional sprays and dusts. Consequently, the most effective method of controlling the insect is with a systemic insecticide which is absorbed into the tree's sap system.

Cygon 2E is the systemic used most often, either as a foliar spray for absorption by the leaves, or as a concentrate painted in a band around the tree's trunk, for absorption through the bark. In each method, applications are required twice each year and are approximately 60 per cent effective.

Now, a more effective application method has been developed; small holes are made in the soil under the drip line of the tree. Undiluted Cygon 2E is poured into the holes and the area thoroughly drenched with water so that the insecticide is carried to the tree's feeder roots and up into the tree's sap system to control birch leaf miners throughout the tree.

This method is needed only once each year and is completely effective. Versatile Wilson Cygon 2E may be used also as a foliar spray on roses, ornamental, and most vegetables.

Published in the Kitchener-Waterloo Record

New 'El Nino' May Shake Up Weather Again

by Bob Alison, Thompson Newspapers

A new El Nino is brewing. You might recall the last one. It made a real mess of global weather in 1982-83.

The last El Nino was a record breaker. It was the most intense disturbance in 100 years. And, it triggered torrential rains in South America, violent storms in the United States, and floods in many places. Severe hurricanes caused $1.4-billion in damage in the U.S. alone. And, droughts in Mexico, India and a dozen other nations resulted in a $6.9-billion price tag. That El Nino was a nasty one.

Locally, it really upset our weather. We had a very warm spring. And, there was a record number of tornadoes across southern Canada. June and July were about normal, though June was cooler than May. There followed about six months of autumn weather, not ending until early January. December was like September. And, winter did not really get organized until well into January.

Scientists are not prepared to predict what effect this next El Nino will have on our weather. But, considerable abnormalities are anticipated.

Among the signs that a new El Nino is in the works are rapidly rising ocean temperatures, particularly off Peru. Temperatures west of the date line are above normal. And, atmospheric pressure in the southern hemisphere is following a typical El Nino pattern. There is also a telltale tilt in sea level between the eastern and western Pacific.

Climatologists are so convinced that a new El Nino is coming that the U.S. Climate Analysis Centre has just put out an El Nino advisory. And, climatologists at the Lamont-Doherty Geological Observatory in Palisades, New York have calculated it will strike this year, and peak next winter.

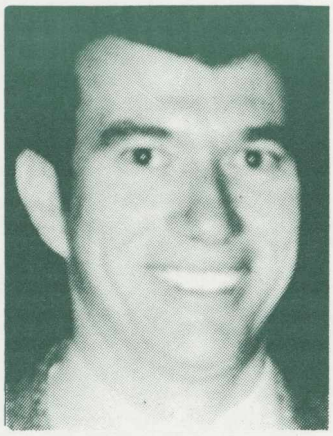
It is a sure thing. And, global wildlife is already responding. For instance, seabird production at Christmas Island in the Pacific Ocean is falling just as it did before the El Nino of 1982-83.

Nobody seems to know what causes an El Nino. There is one theory that violent volcanoes are partly to blame. And, some scientists think that a particularly powerful volcano in Columbia last November might be largely responsible for the El Nino which is now forming.

All El Ninos share some features. The most prominant one is that the top layers of the Pacific Ocean are much warmer than usual. And, the piling up of warm water triggers abnormal weather, world-wide, encouraging more storms.

Some biologists think El Ninos are major evolutionary forces. For one thing, on Christmas Island, the last El Nino wiped out 99 per cent of all birds (about 16.8 million). And, in places, sea mammals deserted their young.

Nobody wants to speculate on what this newest El Nino will bring. We can expect just about anything – at the very least, weather that is not normal.



15 Years Ago Today

by Barry Endicott

In 1971 the Board of Directors were as follows: John Arends (pres.), Bill Hynd (vice.), Ross Haines (sec.), Bob Heron (treas.), R. Allen, Frank Dunn, Bernie Mcdonald, Bob Lamb, Helmut Kopp, Jim Wyllie, John Grightmire (past pres.). The newsletter committee consisted of Bill Hynd, Dave Gourlay, Ross Haines and Bob Heron.

A meeting was held at Thornhill Country Club on February 22nd and Dave Gourlay was the host. The winning curling team of Al Beeney, Roy French, Bob Hall, and Jack Kostegin defeated John Stoughton, Paul Dermott, Bob Heron and Doug Heron in a close game.

On April 20th there was a meeting held at Port Colborne Country Club hosted by Bill Robertson. The guest speaker was Bert Henning from the Niagara Parks Commission. 27 played golf after lunch and the low gross winner was Bob Hall of Georgetown Golf and Country Club and the low net was Keith Nesbit of Westview Golf Club. 1st low gross for associates was Doug Heron and low net went to Jack Wilson.

On May the 10th there was a meeting held at Donalda Country Club hosted by Ron Allen.

On June the 10th the OGSA and the Western Greenskeepers Association had a meeting hosted by Paul Scenna and the Galt Country Club and at University of Guelph turf plots with 48 players playing golf. 1st low gross winner was Bill Bond followed by Bob Heron, Bill Hynd and Whitey Jones. Low net winners were Dan Uzelac, Loyde Reilly, Vince Piccolo, and Keith Nesbit. Commercial low gross was Doug Heron and low net was E. Tremble.

The 4th Annual Greenchairman/Superintendent Day was held at the Chinguacousy Country Club on July 22nd hosted by Paul Dermott. Mr. Bruce McLaughlin was the guest speaker and the cost of the day was $25.00 per person. Low superintendent was Bill Bowen and low net was R. Reilly.

There were also meetings held at York Downs hosted by Kimmo Salonen and at Summit hosted by Bob Lamb.

The Pro/Superintendent Day was held on August 22nd at Meadowbrook Golf Club with 33 teams competing. Whitey Jones and Pro Bruce Butterworth from Aurora Highlands won the event hosted by Arther Uens. An interesting point noticed at this tournament was that a power rake was used in the sand traps with favorable results.

It was also noted in that year that the tri-plex greens mowers were here to stay but the problem of burst hydraulic hoses must be rectified or we are likely to have shattered nerves. Surely a bright colored dye could be added so an operator could notice a leak immediately or better yet an alarm system with a red light to prevent this catastrophe.

On November 9 there was a meeting at Uplands Golf Club hosted by Helmutt Kopp.

The annual meeting, on December 14, at Aurora Highlands, was hosted by Whitey Jones. Bill Hynd (pres.), Jim Wyllie (vice pres.), Bob Heron, Ross Haines, Paul Dermott, John Stoughton, Ed Charman, Paul Scenna and Roy French were elected.

The Tam O'Shanter Club House was wiped out by fire on October 3rd.

Doug Suter at Credit Valley was clearing brush in the valley in preparation for a new 18 hole golf club. The 13 holes in the valley and 5 on top will be completed in two years.

Don Coles of F. Manley and Sons died as a result of a car accident on October 15.

Gordon Witteveen was nominated as director of the GCSAA.

New members were Don Nason, Glen Abbey Golf and Country Club, Dave Holmes, Derrydale Golf Club, Kimmo Salonen, York Downs Golf Club, Tom Simpson, Newcastle Golf Club, Albert Kooper, Rio Glen Golf Club, John Konarowshy, Grandview Golf Club, Tony Wozniak, Malton Golf Club and Rusty Warkman, Stratford Golf Club.

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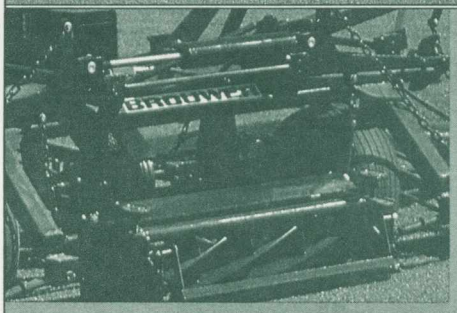

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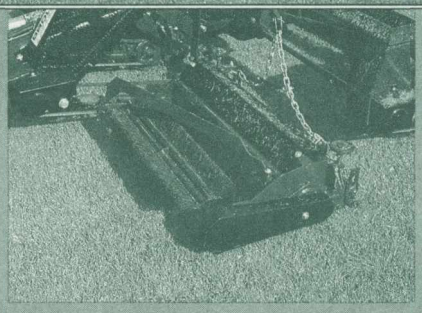

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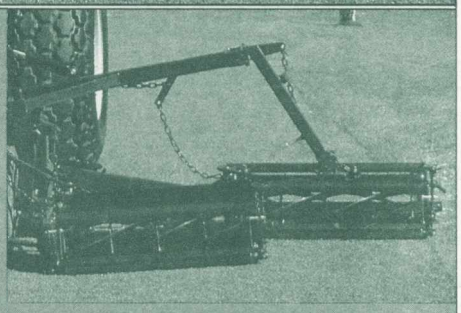

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A Rolling Stone. . . and Healthy Turf

by James T. Snow

Director, Northeastern Region,
USGA Green Section Record

What do rocks and putting greens have in common? Not much you might say, although we always have the local golf cynics who will claim that the greens are as hard as rocks at certain times of the year. More and more commonly, though, putting greens in northern climes experience vegetation growth of the kind normally associated with rock outcroppings, tree tunks and the spaces between patio blocks ... that is, moss growth.

The number of golf course greens experiencing moss encroachment has risen dramatically in recent years, fed by teh unquenchable thirst of some golfers for the golfers' ultimate grail, *fast greens.* In other words, in providing the turf conditions that inspire fast greens, golf course superintendents have unsuspectingly hit upon the formula for promoting moss growth. Perhaps a look at the environmental conditions that favor moss growth will shed more light on this subject.

If you think about where you've seen moss growth occurring, at least one feature is almost always true. That is, such growth usually occurs where nothing else grows well, where there is no competition, and in what most people would probably consider a hostile growing environment. It seems to be able to become established on rocks, tree trunks and other inhospitable locations during cool, damp periods, surviving hot, dry spells by becoming semi-dormant, and resuming growth when weather conditions are again favorable. Moss reproduces by emitting spores into the air, which can be carried long distances by the wind. The spores that land on moist or damp substrates can develop into new plants, especially where there is little other competition for space from other plants.

Though there are hundreds of species of moss in nature, only a few are common in turfgrass stands. The most important, particularly where putting greens are concerned, is the group of upright types which commonly occur under dry, infertile conditions. Formerly found primarily on bunker banks and on thin, unirrigated rough mounds, these types of mosses are apparently finding growing conditions on putting greens in some areas.

Since moss initially establishes itself on substrates with adequate moisture and light, and in the presence of little other competition, it follows that moss encroachment on greens occurs first in the persistently thin, weak areas during the spring and fall, when growing conditions are favorable. Moss is often first seen on high mounds that suffer from repeated scalping and thin areas resulting from triplex ring. As long as other turf areas on the green remain vigorous and reasonably dense, moss will generally remain confined to the persistently weak locations. If turf growth can be improved in the thin areas, the moss will often disappear altogether.

So what does the quest for fast greens have to do with the sudden, increased incidence of moss on greens? To digress for a moment, for many years greens were cut at a height of 3/16 to 1/4 inches, fertilized somewhat heavily at rates of six to ten lbs. N/1,000 square feet per year, and mowed three or four times per week whether they needed it or not. Under these conditions, turf growth was dense and vigorous, affording too much competition for moss to become established. As technology became more sophisticated, as demands for improved playing conditions increased, and as our understanding of turfgrass science improved, cutting heights and fertilization levels were reduced and mowing frequency was increased, but not to the point where moss could become competitive with the turf. Wide use of the Stimpmeter in the mid-1970s, however, and the subsequent over-emphasis on green speeds by some golfers have placed heavy demands on golf course superintendents to produce consistently fast greens, regardless of the consequences.

To satisfy golfer demands for greater and greater green speeds, superintendents have pushed turfgrass science, and the turfgrass plant itself, to the limit. Cutting heights and fertility levels have been reduced, irrigation schedules have been cut back, mowing frequencies have been increased, and the turf is routinely thinned by means of verticutting, brushing, combing, etc. It is not uncommon to find greens today that are cut seven or more times per week at 1/8 inch or less, fertilized at less than one pound N/1,000 square feet per year, double verticut once per week or more, and receiving irrigation schedules designed only to keep the soil firm and the grass alive.

Credit must certainly go to the superintendent who has the skills to keep the turf alive under these conditions, but in the process of keeping the grass thinned and subdued to such an extent, moss is able to become established and thrive on putting greens. Ultimately, the turf is so lacking in vigor that it can't compete successfully with the moss!

Have we reached the limit? Most would agree by these descriptions that we have, and that the pendulum must now begin to swing the other way. The quest for faster greens must now be tempered by the need to maintain adequately vigorous turf to ward off moss invasion and other problems.

Finding the proper balance between cutting heights and fertility levels seems to be the key to solving the moss problem. On experimental plots at Penn State University, moss encroachment was one of the first observations made on plots cut at 1/8 inch or less. Thus, if close cutting heights are desired, then greater amounts of nitrogen fertilizer should be used to maintain a reasonably dense, vigorous stand of turf. Where higher heights are utilized (approaching 3/16 inch), the use of lighter rates of nitrogen fertilizer should be inconsequential as far as moss encroachment is concerned.

On putting greens where moss is already well established, a change in the maintenance program is certainly indicated. If possible, the cutting height should be raised to 3/16 inch and the nitrogen fertilization schedule should be increased to 1/2 to 3/4 pound N/1,000 square feet/growing month, or three to five pounds N/1,000 square feet for the season in northern areas. During this timne, regular verticutting, brushing, etc., can be utilized to help keep the greens smooth, true and reasonably fast. Once the moss has been eliminated, the ultimate balance between cutting heights, fertility levels and green speeds will have to be determined.

Interestingly, despite what you often read, pH seems to have little to do with moss establishment. Throughout the northern range of states, moss has been as great a concern on greens measuring seven or eight on the pH scale as it has on greens with a pH of six or below.

On greens where moss has gained a substantial foothold, chemical treatment may be desirable to suppress the moss while the turf becomes reestablished. Hydrated lime and several commercial moss-killers have been used, but the most consistent results have been obtained with an old standby, iron sulfate. Iron sulfate crystals can be mixed with sand, for ease of application, and put down at a rate of four pounds iron sulfate/1,000 square feet. Ammonium sulfate is sometimes mixed with the iron sulfate and sand at a rate equivalent to one pound N/1,000 square feet. The mixture should be watered in soon after application. These materials have a scorching effect on the moss, and the ammonium sulfate also provides nitrogen, which encourages the turf to grow and fill in the voids left by the dying moss. A single application of this witches' brew will probably not produce a complete kill of the moss, so several applications may be required over a period of several years. Verticutting the green prior to the application sometimes improves the effectiveness of the treatment. When applied during the cool fall or early spring weather, the iron sulfate turns the grass a very dark color, but does not actually harm the turf. It would be wise to try this treatment on a small area first, before treating large portions of the greens.

Though iron sulfate treatments for moss control have been successful on many golf courses, moss will almost inevitably return to the greens unless a change is made in the cultural management program. Thus, chemical control is only a short-term solution, with best long-term results occurring only after the proper balance of cutting height, fertilization rates and irrigation is reached. A wise turf manager once said, "a rolling stone, and healthy turf, gather no moss." Amen!

Dealing With Divots

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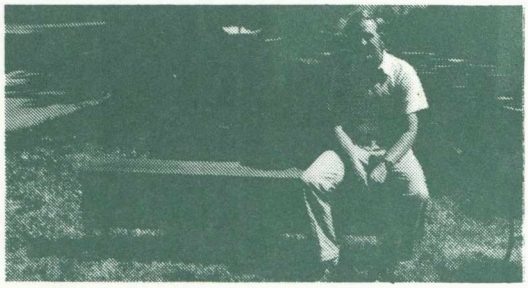
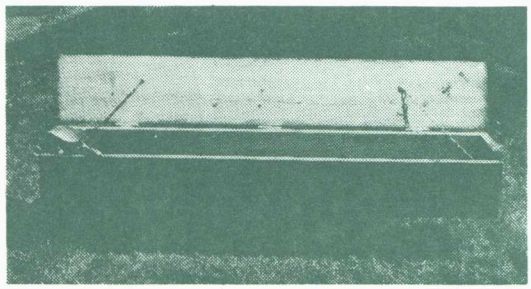
by Patrick M. O'Brien
Agronomist, Mid-Atlantic Region, USGA Green Section





What to do about divots? This is one of those little things that every golf course superintendent must contend with but can never overcome.

Small wonder! The National Golf Foundation reports that the average seasonal daily play today on an 18-hole course is about 150 rounds. That's about 30,000 rounds of golf a year for each of the nation's 18-hole courses. That adds up to a lot of divots and a lot of repair work.

When golf was young, the teeing ground was a small area. Since there was not a great deal of play and the tees were mowed by hand, a good grass cover was possible. But in time, as the number of golfers increased, good grassy tees became more difficult and more costly to maintain. The only answer to the problem lies in larger tees and a constant divot repair program.

Next to providing a level stance for the golfer, size is the most important tee consideration. Without enough ground, grass cannot recover from heavy divoting and traffic. Luckily, it is easy to calculate how much area is needed. For par-4 and par-5 holes, 100 square feet of usable area is required for every 1,000 rounds of golf annually. For par-3 holes, 200 square feet is needed. Tees meeting these general guidelines will have a better chance of keeping a dense cover throughout the playing season. This is an important consideration for anyone planning to rebuild old tees or designing new ones.

The use of fast growing grasses on tees with divot problems is another aid. In northern climates, some favor Penncross bentgrass while others prefer improved perennial ryegrasses. In southern areas, various burmudagrass and zoysiagrass varieties are the choice. Obviously there are growth rate differences, even among grasses of the same species. For example, the faster growing Vamont bermudagrass is preferred over the slower growing Midiron bermudagrass for tees where these varieties are adapted.

Good tees, regardless of the grass species, absolutely require very close attention to fertilization rates, irrigation needs and pesticide protection. These needs are even greater when cutting heights are lowered and grass clippings collected. Many tees have become an intensive management area.

Although there are no set rules for divot repair programs, the greatest hope of all remains with the golfer himself. If every golfer would only repair his own ball marks and replace his own divots, the nation's golf courses would be conspicuously improved and noticeably less expensive to maintain. Proper etiquette calls for this, but too few hear the call. Surely, if golfers would limit their practice swings to off-tee areas only, a tremendous leap forward could be made.

The practice of placing topdressing containers on par-3 tees has made a small comeback in recent years after being commonplace in the 1920s and 1930s. A few clubs use the topdressing containers as tee markers and some have also included small topdressing containers on every electric golf cart. Each container holds the divot topdressing mixture, seed and a scoop. The scoop is used to place topdressing over the scar left if the divot is destroyed.

The self-repair approach, unfortunately, receives only mixed reviews. Many golfers are apathetic. Agronomically, it doesn't take long for the seed to germinate in the mix and the helpful golfer may find a mass of vegetation in the container. One solution is to place the seed in a dispenser, like a salt shaker, to keep it dry and prevent germination. But each new step in the self-repair process only seems to complicate and discourage its use even more.

The best approach to divot repair is a regular program by the professional grounds staff. The professional staff is more proficient than most golfers in judging how much topdressing to place over an old divot hole. Usually, doing the work once or twice a week is enough if the tees are sufficiently large. Most often, one or two crew members apply the divot mixture by hand to the injured areas. The next step is to smooth the area with a shovel and then off to the next tee. Devoting time to divot repairs pays dividends. The golfers, too, become more conscientious about repairing injured turf when they see that the professional staff is devoting time to it.

The divot mixture used by the professional staff is usually one of seed, soil, and/or sand. Seed germination of cool season grasses such as bentgrass, is more difficult in sand alone. On the other hand, actively growing warm season grasses will readily spread in pure sand and rapidly cover without the need of additional seed and soil.

Good tees and a dense, uniform turf cover undeniably add to the enjoyment and attractiveness of every golf course. Good tees don't just happen. They must be of adequate size, have the proper grass, and follow a conscientiously planned management and divot repair program. Good tees cost money. The enjoyment they bring and the impression they leave make it all worthwhile.

Credit: USGA Green Section Record.

Ontario Update

by Gordon Witteveen

The first golfing meeting of the year for Ontario Golf Superintendents took place at the Dominion Golf Club near Windsor. This was a joint meeting with the Michigan Superintendents and it is always an excellent opportunity to trade secrets with our American colleagues who maintain some of the finest golf courses in North America.

Dominion Golf Club is short and relatively easy and, therefore, a great place to start the season. Most everyone had a good score and was in a happy frame of mind. No doubt the great hospitality of our hosts, Dan and Dorothy Uzelac, added greatly to the success of the day. Dominion has been a family business for almost fifty years and is now into the second generation of management. Dan Uzelac, who calls himself "Owner-Superintendent," is one of the most popular characters in the golf course business. Dan is convinced that the success of his business at Dominion is in no small way attributable to all that he has learned from his association with golf course superintendents, both in Canada and the United States. To show his appreciation to his friends, Dan put on a special for the day: The $25.00 entry fee included a golf shirt, lunch, a steak dinner, and all the beer one could drink. The Uzelacs don't limit their generosity to visiting friends. They have contributed thousands of dollars to Turfgrass Research at the University of Guelph and also at Michigan State University. Dan proudly wears a gold lapel pin which marks him as a one thousand dollar contributor to Turfgrass Research. Individual members at Dominion also contribute a dollar each with their annual dues. If there were more people like Dan Uzelac in our business, Turfgrass Research would advance with leaps and bounds and we would also have a very good time as we were progressing.

There have been quite a number of position changes this winter and several golf clubs are starting the season with a new Superintendent at the helm.

Bruce Trasher, for eight years the Superintendent at Cedarbrae in Toronto, has moved to the Vancouver Golf Club. His successor is Warren Vout who came from nearby Whitevale.

Ken Nelson, who looked after London Sunningdale for over 15 years, has moved to Saskatchewan where he is in charge of the City of Regina Golf Courses. The new Superintendent at Sunningdale is Murray Finch who used to be at the Kanata Golf Club near Ottawa.

Art Oswald, an Assistant from the Donalda Club, has taken over at Whitevale. George Forest is the new man in charge at Pike Lake and Douglas Black is keeping the greens at Beaverdale near Guelph.

John Gall came all the way from Sault Ste Marie Golf Club to Oshawa to replace former OGSA President Rusty Warkman.

Congratulations to the RCGA for showing well-deserved appreciation to a good turf man! Michael VanBeek was Assistant Golf Course Superintendent at the Glen Abbey Golf Club for five years. He has left that position to go in business for himself as a Lawn Sprayer in the Acton area. As a going away present Michael received a substantial severance and a golden watch for all his toil at the Abbey. Certainly a nice gesture on the part of the governing body in golf. Don McFaul, Superintendent at Glen Abbey, has appointed Dean Baker as his new Assistant.

A Useful Technique in Sand Bunker Renovation

by James T. Snow, Director, Northeastern Region, USGA Green Section Record

Sooner or later, every golf course superintendent is faced with rebuilding sand bunker edges and banks that have deteriorated through excessive sand buildup. One of the msot critical steps in this process is establishing a well-defined border that gives the bunker its final shape and aesthetic appeal. When the sand bunker is on a relatively flat plane, strips of plywood or metal sheeting work reasonably well in establishing these edges. This method doesn't provide enough support, though, where large, elevated capes and mounds are involved.

At the Winged Foot Golf Club, in Mamaroneck, New York, Bob Alonzi has developed a technique for rebuilding the banks around the large, caped sand bunkers that eliminates the problems associated with plywood or metal strips. Thinking back to his days spent filling sandbags in the Army, Bob came up with the idea of filling medium-sized burlap bags with soil and using them to form the perimeter of the new capes and mounds.

Using the burlap bags in this way has many advantages. The bags form a solid, stable edge, yet they can be moved and molded to provide the precisely desired effect. Once the bags are in place and the soil has been used to backfill behind and between them, sod can be laid on the soil and directly over the bags to establish the capes and mounds. Because the burlap is porous and biodegradable, turfgrass roots grow through the burlap and become established in the soil below, and ultimately the burlap will decompose. Thus, there is no need to use artifical support such as plywood strips or metal sheeting for establishing the bunker edges, and there is no need to remove them later. Once the sod is in place and the roots have become established, the job is essentially finished.

In using this procedure, Bob suggests that the sod be brought down directly over the rounded edge of the bag. Final edging can be done when the sod becomes rooted and well established. He also suggests that this technique can be practical for a variety of other uses on the golf course, including landscaping hard-to-work slopes, building retaining slopes for ponds, for outlining walkways, etc.

But soil-filled burlap bags work better.

Excuses Actually Received by Teachers in Schools Via Notes from Home

Credit: Traveller's Insurance

Dear School: Please accuse John from being absent on January 28, 29, 30, 31, 32, and also 33.

Please excuse Kianna from being absent yesterday. She was in bed with gramps.

I had to keep Billie home because she ad to go christmas shopping because I din't know wat size she ware.

Please execute Johnny for being, it was his fathers fault.

Mary could not come to school because she was bothered by very close veins.

Chris will not be in school cuz he has an acre in his side.

John has been absent because he had two teeth taken off his face.

Excuse Gloria. She has been under the doctor.

Lillie was absent from school yesterday because she has a going over.

My son is under the doctor's care and should not take fizical ed. Pleas execute him.

Carlos was absent yesterday because he was playing football. He was hurt in the growing part.

My daughter was absent yesterday because she was tired. She spent this weekend with the Marines.

Please excuse Joyce for P.E. for a few days. Yesterday she fell off a tree and misplaced her hip.

Please excuse Ray Friday. Friday from school. He has very loose vowels.

Please excuse Blanche from jim today. She is administrating.

Please Petro from being absent yesterday. He had dia dya diah, the s...s.

George was absent yesterday because he had a stomach.

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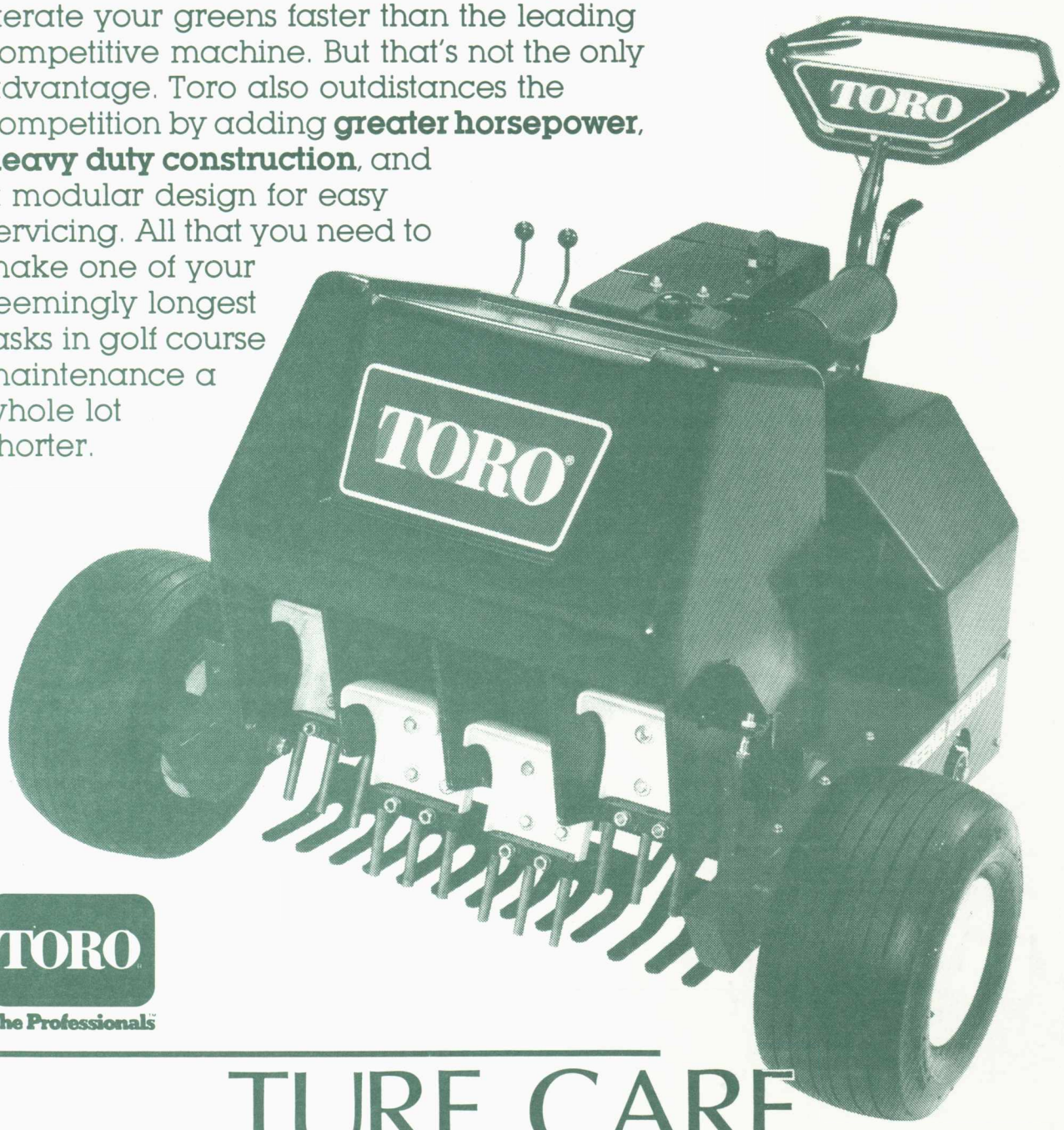

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COMING EVENTS

June 12	Spring Field Day	Victoria Park
June 26	OGSA - WOGSA Joint Meeting	TBA
June 26	Region 1 Meeting	Strathroy
July 14	President, Greenchairman, Superintendent Day	Credit Valley
July 22	Region 3 Meeting Region 4 Meeting	Caledon Midland
July 23-26	Annual Ontario Parks Assoc. Conference	Brantford
July 24	Region 1 Meeting	Thames Valley

"Green is Beautiful"

Ontario Golf Superintendents Association