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## OGSA PRESIDENT'S REPORT

Gord Nimmo CGCS

With Golf for the decade of the 90's just about to begin I look forward with great anticipation and some uneasiness. Changes in the golf maintenance field in the 80's were large scale and non stop. Golf course equipment improved dramatically and older automatic irrigation systems became computerized. Staff education and payroll shot up in hopes of employing well trained people. Suddenly there were new golf courses being built and what was almost a stagnant industry became a revolving door as Superintendents moved around in search of greener pastures. If the 90's continue where the eighties left off the golf industry will remain an exciting business.

But there is a dark cloud on the horizon. Government restrictions on pesticide use will have a major impact on not only golf course conditions but also the environment. I may be partial but I feel the golf industry is a leader in chemical safety. Respirators, coveralls, rubber gloves and boots are all standard equipment for spraying. Many clubs are putting computer controllers on their spray equipment for more accurate applications and better records. New maintenance buildings that are built now include in their design proper chemical storage facilities and government standards are being followed. All courses are to have one licensed applicator but many clubs now have as many as 4 or 5.

Unfortunately the Ministry of the Environment chose to ignore the industry lately and brought out new legislation regarding posting. Greencare Ontario was formed last year when the ministry first proposed this legislation. Greencare is a joint venture of the lawn care industry, the golf industry and many other associated groups. It was formed to combine forces and act as one voice for the industry as a whole. Through the fall and winter correspondence from the ministry seemed favorable but this spring common sense was thrown out, in favor of the politically safe clean environment decision. This is just the tip of the iceberg as more changes will be on the way.

The 90's will be exciting and the OGSA looks forward to continually provide its members with education, job referrals and good fellowship: but don't forget that the key to a successful organization is participation.

## FROM THE EDITOR

ROD TRAINOR CGCSSS

Here we are, a new decade and many changes appear to be in the wind. Environment is the key work. We as Superintendents know that our ability to provide perfect turf conditions is going to be severely strained in the coming months and years. Alternative methods for disease and pest control will have to be found.

Most people are now environmentally aware. Golfers will now take a second look at that sprayer or spreader and wonder what is being put on. Those of you who have newsletters at your club have a great opportunity to communicate to your members your concerns. You can tell them how safe the products you use actually are and let them know that your application methods are the very best. You should be informing them about the new legislation regarding posting so that when they see those signs they will know what they are about.

In my opinion what will have to come is golfer's acceptance of a golf course which may not be immaculate from time to time. Instead of telling your members you are not going to mow that area anymore, tell them we are going to "naturalize" that area.

This is a fast moving business and the only way to keep up is to stay informed, so come out to the meetings and get involved.

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# Evolution Of The Modern Green – Part 1

By Dr. Michael J. Hurdzan

President, American Society  
of Golf Course Architects

## The Author:

Mike Hurdzan is uniquely qualified on the subject of the evolution and construction of greens. He holds a Ph.D. in environmental turfgrass physiology, a Masters in turf studies, a Bachelors in turfgrass management, and has completed three years of work toward a second degree in landscape architecture.

His practical experience has come from eight years as a greenskeeper, two years as a golf course superintendent and the owner of his own consulting and landscaping business. For the past 14 years, he has worked as a golf course architect during which time, with partner Jack Kidwell in Columbus, Ohio, they have designed and constructed more than 1,200 greens.

He was elected president of American Society of Golf Course Architects in 1984.

Space-age technology has given us artificial turf for football, baseball and soccer ... plus all too many playing fields with square dimensions and noticeable lack of character.

True, synthetic grass has eliminated many of the problems that have plagued groundskeepers in the past. But these "magic" carpets would prove to be poor substitutes for the putting surfaces of golf course greens. Gone would be the golfer's challenge of getting the line on a match-winning putt, as well as the opportunity of the golf course architect to give the golf course its own distinctive character with the shapes and slopes of the greens.

Armed with modern maintenance equipment and procedures, today's golf course superintendent enjoys matching wits with mother nature, and would surely miss the challenge of keeping the greens in their best playing condition possible.

No one has understood the critical role of greens play more than A.W. Tillinghast, one of America's most prolific golf course architects. Asked to describe his work at Winged Foot, four-time site of the U.S. Open, Tillinghast declared:

"The holes are like men, all rather similar from foot to neck, but with the greens showing the same varying characters as human faces. If the shots home are wide of the green centers, the boys will be using niblicks rather than putters."

So Tillie (as well as other architects, superintendents and golfers) appreciated the dual role served by greens. Not only are golf greens visual elements, they are also functional elements ... for they receive the most concentrated foot traffic of any area on the course, absorb a great deal of physical abuse and must provide a true playing surface for golf's most delicate shots; as Tillie demanded at Winged Foot.

This would be a difficult task even for high-tech synthetic materials. But instead, we expect tender, young grass blades to do the job with the help of the superintendent. In recent years, golfers have demanded fast greens, which means growing turfgrass under unnatural and therefore stressful conditions. Cutting heights are shortened to less than that of the print on this page, reducing leaf area to a fraction of what is considered optimum.

Thus, the modern golf green has become a complex system of engineered growing, shaped by soil physics, soil chemistry, and constantly evolving turfgrass technology. Modern greens are built without soil. And the turfgrass that covers them has been genetically selected, and maintained via procedures that are products of laboratory research.

In 1888 (when golf became established in America) and for the next 30 years, golf courses were maintained with grazing sheep, goats, or cows. Sometimes horse-drawn carts, sickle-bar mowers, and heavy rollers were used. Greens were fertilized with manure and compost. There was little or no irrigation. The only treatment for diseases and insects was a mixture of sulphur and lime. A few courses mowed greens with man-pushed mowers. Although superior to horse-mowed greens, they were poor compared to any standard used for even tees today. Until the mid-1920's, putters had a couple of degrees of loft, indicating the putt was not always a roll but often a very low, short golf shot.

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Every superintendent after 1900 had a compost pile with at least two years of top-dressing material. Each man had his secrets that made his compost better than the next. When mixed with sand and manure and applied as top-dressing by shovel and dragged in with a flexible drag, compost produced excellent turf in terms of color and growth. Popularly-used artificial fertilizers around 1900 were bone dust, blood meal and other natural organics.

Weed control was done with a knife, a hoe or by applying a pinch of "weed crystal" to the crown of each plant. This weed crystal was presumably some sort of acid that ate into the crown of the unwanted weeds. However, work on chemical control of weeds, (begun in 1886 by a professor Bolley in North Dakota) discover that mustard could be killed selectively when spraying with sulphate of iron.

Many golf courses with low budgets had grassless sand greens, but they were not the type we know today. Those old sand greens were usually laid flat on the ground and built by removing three to six inches of natural earth and replacing it with heavily oiled sand. Before putting, a player would use a leveling board provided at each green to smooth down any footprints that may have been in his line. There are still many golfers today who can tell you about playing on this type of green, for up until a few years ago there were oiled-sand greens in Ohio and some also exist the mid-west.

Most courses during the 1900's relied on natural rainfall. Some exclusive clubs did however have irrigation systems consisting of underground pipe and above ground hose connections.

Although a few diseases were recognized, none was adequately treated except by applying a lime and sulphur mixture. Fairy Ring was handled by digging up the infected area and replacing it with fresh earth. Insects were a problem too. Earthworms and ants that made casts or mounds in the green were chief culprits. But there was no selective cures.

The primary maintenance tool was the heavy iron roller, weighing 1,500,000 pounds, and pulled by a team of horses that wore special boots. The boots were the early superintendent's answer to high flotation.

Given these conditions, golf was played differently during this period. With rock-hard greens, the full pitch shot straight at the pin was possible only when soil conditions were soft, such as in the Spring or Fall, or following a long, slow rain. At other times, the prudent shot was the run-up, or as I was taught, the "pitch-and-run" or "bump-and-run". This situation gave the golf courses added variety and interest, for the same golf hole may have required a different type of approach shot, depending on the soil moisture.

When the American Society of Golf Course Architects played the courses of Scotland in May, 1980, it had not rained significantly for seven weeks. The fairways were brown and the greens were blue from lack of water. Even the sandy soil types were hard as concrete. Within the first few holes, and after some angry words from our knowledgeable caddies, we all learned the futility of the full pitch shot and the virtue of the "bump-and-run". Out of necessity we became masters of the shot. Even now, four years later, many of my colleagues still retain that shot in their arsenal, often playing a putter or straight-faced iron chip shot from over 100 yards off the putting surface... and with great skill as my billfold will attest!

In the early 1900's, cinders instead of sand were used because they were believed to discourage earthworms. Greens were seeded with New Zealand Fescue, Redtop, Crested Dog's Tail, Bluegrass, Rhode Island Bent, and yarrow. Some greens during this period of experimentation were planted to 100 per cent yarrow. Later experiments developed the South German Bent mix. The first experimental turf plots were built at Arlington Gardens in 1910.

Perhaps the greatest experimentation and improvement came in the area of greens construction. Everyone realized that greens ideally should be velvet carpets of uniform color and texture. But lack of water and compaction were major limitations and no one knew what to do about these problems.

A forgotten pioneer in early greens research was a wealthy Philadelphia lawyer by the name of Fred W. Taylor. He had a keen interest in understanding the principles of growing fine turf on putting greens. Purely for the love of the sport, he started experimenting in 1904 with hundreds of greens construction methods and maintenance procedures. He focused on the scientific production of a growing medium for greens that had a high water-holding capacity (since irrigation systems were rare at the time). At the same time, these greens had to provide perfect drainage of excess water that contributed to compaction.

Before Taylor died in 1915, he had patented several methods of golf greens construction which absorbed water from the sub-surface to the upper soil layers where the turf plants were actively growing. His research and patents are nearly identical to the PURR-Wick system which was revived and perfected by Dr. William Daniel of Purdue University in the 1960's and 1970's.

The famous and futuristic golf course architect, C.B. MacDonald, tried a different approach to achieve the same results. He subirrigated greens with a tile system, a control valve and an underground water supply piped to each green. He and Seth Raynor, his engineer, tried this method in 1910 at St. Louis Country Club. They felt that when the tile was flooded, the water would be absorbed up to the green's surface, thereby irrigating the turf. The success of this system is reflected in the fact that St. Louis CC today is the only course in the world with this type of green construction.

Donald Ross also experimented with greens construction methods in 1916 at Scioto Country Club, where he worked with Prof. Vivian of Ohio State University on a method of layering soils to conserve water and yet resist compaction. This Ross/Vivian method employed a perched water table concept that was later refined by Dr. Marvin Ferguson in the 1950's and became the USGA method of greens construction.



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Greens built before irrigation became common in the 1920's were different both above and below ground. The golf course architects of that period knew that with existing watering limitations they had to do everything possible to conserve whatever rain fell on the greens. Thus, greens built with clay (which holds water better than sand) could be given more surface character than greens employing materials that would not hold water. We saw greens built on the punch bowl theme which collected water from the fringes and banks and drained it toward the putting surface. These early greens were surrounded by high banks that served as wind breaks to cut down on the amount of water lost to evaporation and transpiration.

Bunkers were placed further from the putting surfaces than today because they had learned that superheated sand trap faces caused great water loss from adjacent soils, with subsequent loss of turf. In short, many of the styles of architecture of the pre-1920's were more in response to conserving water than to providing the best possible playing conditions. Although charming in form, such golf greens do not fare well when subjected to the high volume of irrigation commonly used today. And this accounts for many of the turf problems I find on those older courses where automatic irrigation systems have been installed. It is like putting a racing engine in a Model T. If the substructure of the system doesn't match the required performance characteristics, something is going to go wrong.

Modern irrigation is not the only reason that many older greens need to be rebuilt. There are also the problems of not enough cupset space to handle today's high volume of play; the buildup of unknown chemicals and top-dressing from years of trial and error maintenance, and, the need for internal drainage.

After 1921, almost every golf course had an irrigation system for at least the greens. Snap valve systems were common. The greatest limitation to large volume and pressure irrigation systems was the lack of technology in electric motors to run economically.

Sprayers were refined and more chemicals were applied in solution than ever before. Proportioner systems were also introduced during this period but, as now, they did not gain wide acceptance. With a great deal of money to spend on cheap labor, golf during this boom period became elegantly manicured in much the manner we see today.

During the Great Depression almost all research was on sociological or agriculture topics, with little left for golf courses and turf management. From 1929 to 1936, about the only real improvements were made in machinery which became more efficient and more reliable. In the late 1930's, we saw more experimentation with chemicals for insect and weed control. Chloropicrin (tear gas) was first used as a soil sterilant. Also in this period, work was done selecting improved grass varieties.

Then came World War II, and with its long duration, we saw accelerated research programs on all topics, especially chemistry. During this period, we also developed the industrial technology that allowed men more time to play golf and with lower-cost equipment. America needed diversions and golf became a national pastime that was popularized by men like Byron Nelson, Ben Hogan and Jug McSpaden.

Golf raised \$600 million in war bonds and it was a respected, patriotic pastime that blossomed greatly. Immediately after the war, Hogan and Nelson were the top golf attractions as they battled it out in the company of Sam Snead, Lloyd Mangrum, Cary Middlecoff, Frank Stranahan and Ed "Porky" Oliver.

The Fifties came quickly and with them came television, a golfing President Eisenhower and Arnold Palmer. On the horizon was a young man named Jack Nicklaus who was to further the national interest in the game at a time of great social prosperity that favored sports like golf.

With this accelerated growth of golf in America came the recognition that scientific research was needed in turfgrass management, particularly in golf green construction.

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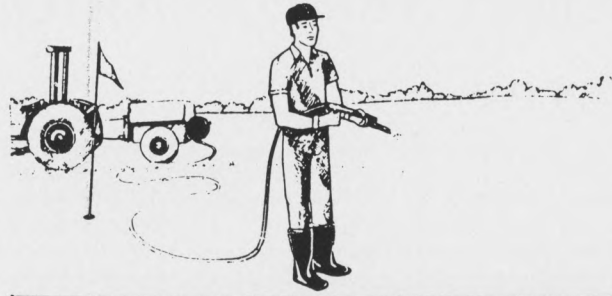


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# GREEN CARE ONTARIO UPDATE

by THOM CHARTERS

It has been thirteen months since the Ministry of the Environment declared its intention to implement amendments to Regulation 751 of the Pesticide Act. It has been twelve months since representatives of numerous associations first met to discuss the possibility of a combined response. That ad hoc group has since developed into a fourteen member (and still growing) "association of associations." The spirit of co-operation that has developed is most encouraging and bodes well for the future success. Without a doubt, this type of organization has a significant role to play with its member associations, various government ministries & public interest groups. Our industry has been collectively complacent about increasing public sympathy for the causes presented by groups such as "Friends of the Earth." We shouldn't be surprised by government action because the environmental activists have been working diligently for years to nurture a public opinion that demands it. Our silence on the issues has allowed this to occur, in fact, we've made their job rather easy.

Well GREEN CARE ONTARIO has, in its infancy, taken the first steps to bringing a voice of reason to the forefront. Our response to the proposed amendments was a responsible one. We endorsed the concept of the "public's right to know" throughout posting. Our formal submission made specific recommendations that enhanced the government's intentions while making it a workable piece of legislation for industry. We were disappointed, to say the least, that our significant effort was all but ignored. This rather dramatically confirms the fact that we have a long way to go. This is not to suggest, however, that our time and expenditures to date have been wasted. We can hold up the contents of our formal submission as a shining example of industry's willingness to address the issues. The profile of our industry is being elevated, important contracts are being made and I am certain that time will prove that we addressed the posting issue more responsibly than government.

But where does that leave you come June 2 when you will be expected to post signs that advise your golfers to "KEEP OFF." GREEN CARE ONTARIO is producing two pamphlets to support you in your personal endeavours. The first is a handout that can be mailed to your golfers or distributed to players from the Pro Shop. It addresses the inevitable question, "What does this sign mean?"

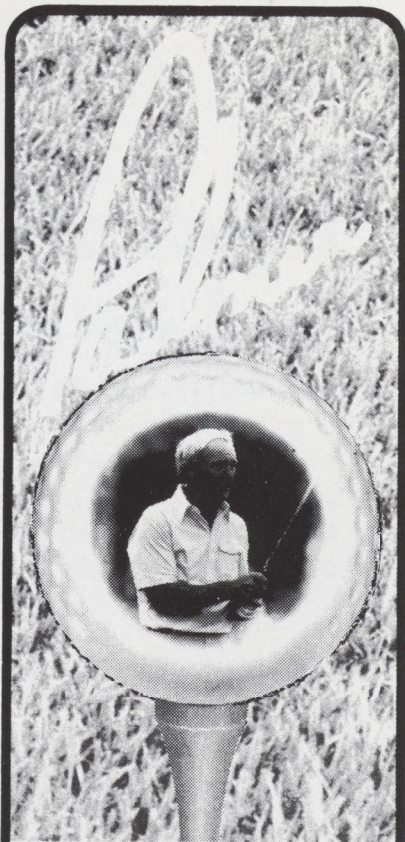
It will be an envelope sized, one page flyer printed on recycled paper, boasting the Green Care emblem. Under a sample of the actual sign will be the following copy.

The Ontario Ministry of the Environment has amended Regulation 751 of the Pesticide Act. It now states that licensed pesticide applicators must post these signs for 48 hours following a pesticide application and in the case of public areas, for 24 hours prior to an application. For an explanation about the "KEEP OFF" directive, please contact a Ministry of the Environment official at one of the regional offices listed on the reverse.

It must be our position, to comply with the Pesticide Act and to treat the posting matter with utmost seriousness. You should be most cautious when answering questions about the signs and the matter of safety/risk. We recommend that you do not attempt to interpret the meaning of the sign. You might suggest that the government has made it mandatory to post the sign, that you are taking the necessary precautions to protect your staff and golfers from undue risk and that people with concerns about the implications of the sign should follow the recommendations of the GCO handout. It is likely a good idea to prepare your staff, the pro shop staff, and other club officials as to the best way to handle inquiries. Copies of this article may do the trick.

The second handout will present the benefits of a healthy landscape in a manner that will be embraceable by the general public. We must emphasize the positive impact that our efforts have on the environment while presenting the facts about the products we use and the responsible way we use them. We've got a good story to tell, so let's tell it. You will receive notice from your association about these materials and how to order them when they are available.

With the involvement of every member of each member association, GREEN CARE ONTARIO can effect some influence. We will strive to make in-roads with the legislators, but individuals must make use of the information that will be ultimately, public opinion.



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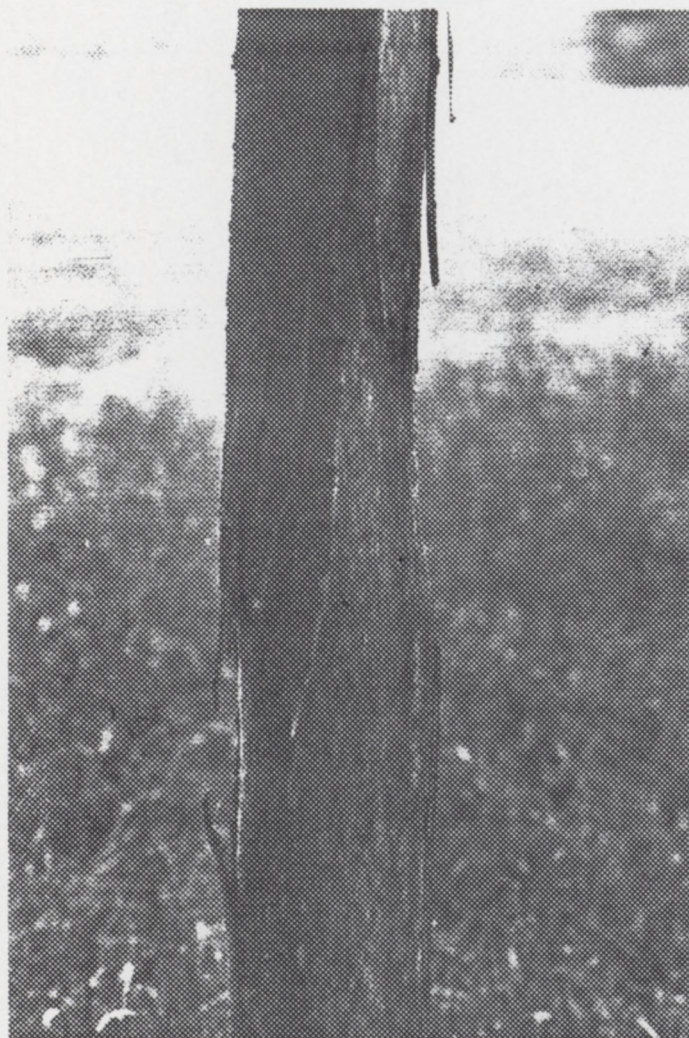
# Too Many Squirrels at Westmount

This past June many of our trees, especially the Sugar Maples were damaged by squirrels. The damage was tremendous! Some small trees were stripped completely of their bark and in some cases they were only partially girdled. Even large mature trees were affected. In the large trees the damage was restricted to the limb wood.

When the damage was first noticed we had our arborist assess the situation and he confirmed that it was caused by squirrels and that many of the trees would not survive. He recommended that we consult with a licensed trapper to see how the problem would best be handled. We immediately started to trap the animals in an attempt to reduce the population. We also treated any salvageable trees with a rodenticide to prevent further damage.

It was the trapper's opinion that because of our urban location the balances of nature were out of wack, (i.e. there was an abundant food supply, probably from bird feeders) and there wasn't enough of the squirrels' natural predators to keep them in check. When the homeowners stopped feeding the birds in the spring the large population of squirrels began starving and they turned to the sweet sapwood of the trees as a replacement for their normal food supply.

It was hard to believe how emotional people could be over the trapping of the squirrels. Once we had shown the members examples of the damage they accepted it as a necessary evil. We





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even had the arborist and the trapper write articles for our newsletter. There were many times that squirrels were let out and even traps destroyed, but in most cases I feel that this would likely have been done by non members walking the course. The traps that were used were "passive traps" and didn't kill the animals. They were removed by the trapper in a humane manner. During the past year the trapper has removed over two hundred squirrels from the course and we still seem to have plenty around. The trapper had warned us that as the squirrel population was lowered on the course they would likely be replaced by the over-abundant population surrounding us. The trapper is also looking into the feasibility of introducing some of the squirrels natural predators to the golf course.

In all there are probably over one hundred 4-6 inch caliper trees that will have to be removed, many more with extensive damage and many of our large mature trees are going to require extensive pruning to remove the branches that are going to die.

**Hugh Kirkpatrick**



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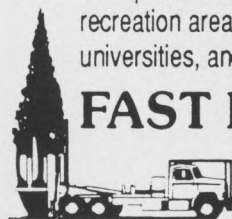
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## SUPERINTENDENTS ON THE MOVE

After a relatively quiet 1989 things have picked up and we now have a column to write again. Most of the action has happened since Christmas. **Rick Serrao** has moved from Ingersoll Golf and CC to a new course in St. Catharines called Rockway Glen Golf and CC. Rick's happy to be in the construction again. Taking over for Rick at Ingersoll is **Dan Lavis** formerly from Kleinburg. Yours truly, Rod Trainor, is settling in to his new duties at Hamilton Golf and CC. Taking over from me at St. Thomas is my able assistant **Ryan Beauchamp**. St. Georges Golf and CC also has a new superintendent in **John Gall** who left Oshawa Golf and CC in the capable hands of his assistant, **Gord Somerville**. Another OGSA Director, **Bruce Burger** has left Galt Country Club to take over the reins at a new course under construction near Milton. And once again another capable assistant, **Jordan Lucas** takes over from Bruce at Galt. Former Superintendent at York Downs Golf and CC, **Kimmo Salonen** has gone north to another golf course under construction but rumor has

it, the real reason is for better snow conditions for cross country skiing. **James A. Wyllie and Assoc.** have been awarded the contract for maintaining York Downs and former assistant at Board of Trade **Al Schwemler** will be the new Superintendent.

### NEW MEMBERS

Bruce McDonald	Albion Golf Cars & Turf Equip.	Class E
Michael Patterson	Saw-Whet GC	Class B
Ray Patterson	Saw-Whet GC	Class D
Bruce Vollett	Foxwood GC	Class B
Dean Baker	Glen Abbey	Class B
Geoff Corlett	Turf Drain	Class E
Doug Cherry	Cherry Downs	Class F



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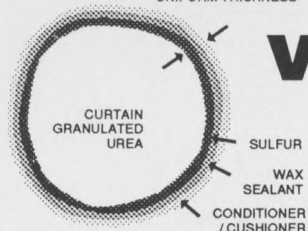
If it is, so is a part of your budget. And in the process, you may be allowing something environmentally wrong to continue.

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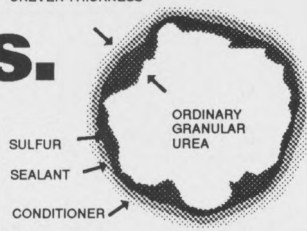
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# YESTERYEARS

Editor's Note: Perhaps some useful information for today's modern superintendent.

1935

Stumpp & Walter Co.'s GOLF TURF

## A Select List of Plant Foods

- AA Country Club Fertilizer.** For Putting-Greens: When the grass begins to grow in the spring, topdress with Country Club Fertilizer mixed at the rate of 20 lbs. to a cubic yard of soil or compost. This to be followed in two or three weeks with another application using 30 lbs. of the fertilizer mixed with soil or compost.
- For Fairways: Apply at the rate of 200 to 300 lbs. per acre as soon as growth starts in the spring and two weeks later make an additional application of 300 to 400 lbs. per acre. Grass is to be perfectly dry when application is made on both fairways and putting-greens. 100 lbs. \$5, ton \$65.
- Aluminum Sulphate.** Makes soil acid, and for this purpose is occasionally used in turf culture. Use at the same rate as Ammonium Sulphate. 25 lbs. \$1.75, 50 lbs. \$3.25, 100 lbs. \$5.
- Ammonium Sulphate.** Widely recommended nitrogenous stimulant, especially for topdressing putting-greens. Its continued employment tends to make soils acid and to discourage weeds. May be used as a liquid plant food, dissolving 2½ lbs. in 50 gallons of water. When applied dry, always mix with compost. Maximum allowance is 4 lbs. per 1000 square feet, and if this is exceeded or if the application is uneven, the grass may be scalded. Scalding is often increased by impurities in sulphate, but the quality we offer is very highly refined, milk-white in its purity and it is safer to use than ordinary grades of Ammonium Sulphate. Price on application.
- Ammo-Phos.** A clean, dry, granular fertilizer. Stimulates the desirable grasses—the Bents and Fescues. Discourages weeds and clover. Apply at the rates suggested for Ammonium Sulphate. Exercise great care, for it will burn if applied unevenly. 100 lbs. \$5, ton \$65.
- Blood, Dried.** Adds nitrogen and a small amount of phosphoric acid and lime. Acts quickly. Price on application.
- Bone Meal Fertilizer.** A widely recommended plant-food, supplying nitrogen, phosphoric acid, and lime to the plants. Promotes a dark, rich growth, but when used to excess it may start into growth seeds of white clover that may be in the land. Bone Meal is usually applied to existing fairways at the rate of 750 lbs. per acre and to greens at 15 lbs. per 1000 sq. ft. Two or three times this quantity is used when preparing new land for seeding. Price on application.
- Castor Pomace.** An excellent plant food and one which is claimed by some users to be helpful in discouraging grubs, earthworms and other animal pests. Price on application.
- Cattle Manure, Shredded.** Use 1 to 2 tons per acre, or 50 lbs. per 1000 square feet for new work; one half these rates for topdressing, mixed with compost. Price on application.
- Charcoal.** Has no plant food value in itself, but excellent for correcting sour soils or those in which there is too much clay. 50 lbs. per 1000 square feet, worked into new putting-greens, and topdressings from time to time, at one-quarter this rate, will be found of great value. Price on application.
- Cottonseed Meal.** Excellent for both greens and fairways, and an especially valuable aid to young grass. Used as a topdressing, apply from ½ ton to ¾ ton per acre, or 20 lbs. to 35 lbs. per 1000 square feet on greens. Price on application.
- Canada Hardwood Ashes.** For new fairways, use 1½ tons per acre; for new greens 50 pounds per 1000 square feet; one-half these quantities for topdressing existing turf. Bbl. (about 200 lbs.) \$6., ton \$45.
- Gypsum or Land Plaster.** Lime Sulphate. From ¾ to 2 tons per acre may be worked into new fairways; for topdressing use ½ ton per acre or 100 lbs. per average putting-green. 100 lbs. \$2.50, 500 lbs. \$10, ton \$35.
- Humus.** Black muck land which has been cultivated, dug, dried and screened. May be used on sands, sandy loams, or even on heavy land. In bags, ton \$30. In bulk in carload lots (20 tons) \$10. per ton f. o. b. New Jersey.
- Lecco.** Use 30 lbs. to an average size green, applied as received, not mixed with compost, every two weeks. Use 400 lbs. to the acre on fairways. 100 lbs. \$5, ton \$70.
- Lime, Hydrated.** Slaked Lime in an exceedingly fine pulverized state. The quickest results are obtained by the employment of this kind of Lime. Use from ½ to 2 tons per acre. Ton \$27.50. Carload lots at \$16. per ton.
- Limestone Pulverized.** Slower acting and more permanent in result. Use 1 to 3 tons per acre. Ton \$17.50.
- Milorganite.** An activated sludge. Price on application.
- Muriate of Potash.** Apply at the same rate as Ammonium Sulphate. Price on application.
- Mushroom Soil.** Horse manure and fine loam which together have produced a crop of mushrooms; equivalent to half-rotted compost and highly valuable. One to three tons may be worked into the top layer of new greens, and from one-half ton up may, with advantage, be screened and given as a topdressing to existing greens from time to time. In carlots only, (minimum 35 tons). Ton \$4. F. O. B. shipping point.
- Mushroom Soil, Finely Shredded and Screened.** ton \$15., 5 tons at \$12.50 per ton.
- Nitrophoska.** Is a complete fertilizer containing 15% Nitrogen, 30% Phosphoric Acid and 15% Potash, all available. Apply by mixing 4 to 6 pounds with two bushels of compost and broadcast on an area of 1000 square feet of green or fairway, spreading as evenly as possible. Price on application.
- Poultry Manure, Pure Pulverized.** Apply it to new areas at the rate of 1 to 2 tons per acre, or 50 lbs. per 1000 square feet; for feeding existing turf, use 1500 lbs. per acre or 25 lbs. per 1000 square feet. Price on application.
- Prepared Peat Moss.** Has no plant food value of itself, but is a form of humus which remains unchanged in the soil for many years; there it acts as a sponge, absorbing water during wet weather and yielding it to the plant in dry seasons. Worked into the surface, it furnishes a yielding, carpet-like softness. If a hard, fast green be spike-rolled, or perforated with a hollow-tine fork, and some Prepared Peat Fibre worked into it, the result is usually a less fast and more pleasing green. Five bales may be mixed with the surface soil when building a new green of average size and from two to three bales may be spiked and rubbed into an existing green. Bale \$3.50, 5 bales \$3.25 per bale, 10 bales \$3. per bale.
- Raw Rock Phosphate.** Finely ground, containing 25 to 30 per cent phosphoric acid. 100 lbs. \$2, ton \$21.50.
- Salt Hay.** Ideal covering for new seedlings in hot weather, or for exposed greens over winter. Price on application.
- Sheep Manure, Pure Pulverized.** Use it freely—1 to 3 tons per acre, 200 to 500 lbs. per average green for new work. Topdress at the rate of ¾ ton per acre or 35 lbs. per 1000 sq. ft. Price on application.
- Soot, Scotch.** We import this material from the best sources in North Britain. It supplies nitrogen, stimulates the turf, induces a rich, dark color, reduces weeds and repels injurious insects, beetles, etc. Apply 75 to 100 lbs. to an average putting green, mixed with compost or sand, four times a year, twice in spring and twice in autumn. 112 lbs. \$6, ton \$70.
- Super-Phosphate.** A very economical and popular source of phosphoric acid. For topdressing, 750 to 1000 lbs. per acre, or 100 lbs. per average green is the customary allowance. Price on application.
- Tobacco Fertilizer.** Use at the rate of 10 ozs. per square yard and 3000 lbs. to the acre on existing turf and 16 ozs. to the yard and 5000 lbs. to the acre on new land. 100 lbs. \$4.50, 500 lbs. \$20.00, ton \$65.
- Tobacco Stems.** Spread two to three bales on the average green when play is over for the season. Bale (about 100 lbs.) \$4., 5 bales \$17.50, 20 bales \$50.
- Urea.** This synthetic nitrogenous compound contains 46% of soluble nitrogen. Use it always with extreme care, because, like Ammonium Sulphate, it will scald turf when applied unevenly or if used during the hottest months of the year. Use ½ ounce to each 10 square feet in area, 125 lbs. per acre, or dissolved in water, 1½ lbs. in 50 gallons. Price on application.
- Vigoro.** A balanced plant food. Price on application.



## TEN YEARS AGO TODAY

by Barry Endicott

The Board of Directors of the OGSA in 1980 was as follows: Paul White (president), Ken Nelson (Vice president), Doug Hoskins (secretary), John Smith (treasurer), Stu Mills (past president), Don Ardley, Bob Brewster, Al Draper, Shorty Jenkins, Blake McMaster, David Moote and Rusty Warkman. Bob Brewster was editor and Blake McMaster was co-editor of "Green Is Beautiful".

There was a March meeting held at Scarboro Golf and Curling Club for the Annual Curling Day. Bob Moote's rink beat Bill Bowen's rink and won the R.F.M. Trophy. The business section of the meeting, lead by host Dave Moote, involved a salary and benefit discussion with Stuart Mills, Dan Ardley and Gordon Witteveen also giving us a breakdown of the wages and benefits paid to their employees. The first golf meeting was held on May 5 at Roseland Golf and Country Club, Windsor, hosted by Bud Hooper. Dr. Vargus paid a post dinner visit speaking on the theories about "Maintaining Turf Not Grass". The Galt Field Day was held on June 12 at Galt with a visit to the U. of G. Turf Plots. Dr. Tom Fisher was the guest speaker. Low gross superintendent was Bruce Vollett 74, low net super was Whitey Jones 64. Low assistant gross was Bruce Burger 72 and low guest gross was Rod Hermitage. The President, Greenchairman and Superintendent Tournament was held Friday, July 25 at the Summit Golf Club hosted by Doug Hoskins. The team from Richmond Hill Golf Club of Peter Barnett scored 109 points for first place. Hugh Kirkpatrick of Westmount had the low gross round for the day shooting 72. Andy Bertoni was guest speaker. On August 12th a meeting was held at Westview, hosted by Keith Nesbit. Low gross scores were Bill Bowen and Hugh Kirkpatrick with 79 and low net winners were Bill Hynd and Niel Acton 70. A discussion started on the rules of golf as Keith was head of the rules of golf for OGA. Ken Wright and Ben Kern won the Pro-Superintendent

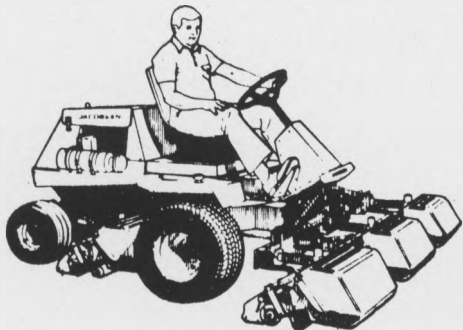
Tournament played at Lake St. George Golf Club in Orillia with a score of 153. Low super gross was Dan Ardley 78, low supers net was Brent McCaffery 69, and low pro Ben Kern 67. The McClumpha Tournament was held at Dalewood Golf Club on September 29 hosted by Dan Ardley. Low gross superintendent was Ken Wright with 74 and low net was Hugh Kirkpatrick 70. A scramble golf day was held at Bayview Golf Club hosted by Jim Wyllie. The winning team was Bob Heron, Shorty Jenkins and Dave Dick with a score of 67. The Christmas Party was held at Lambton Golf and Country Club on November 15.

A GCSSA fall seminar was scheduled in Toronto on Landscape 1 Design Theory for October 29 and 30. Instructors were William R. Nelson, University of Illinois and Mr. C. E. McNinch, Director of Independent Study, University of Guelph. The 1981 GCSSA International Turfgrass Conference and Show was held on January 25-30 in Anaheim, California.

The First Annual Turfgrass Research Invitational Golf Tournament was held on Friday, August 1st at the National hosted by Ken Wright with the barbecue being held at the Board of Trade hosted by Gord Witteveen. The tournament raised \$2,800 for Turfgrass Research in Ontario. Low gross was Bob Cherry with an 84 and low net was Kimmo Solonen.

Tom Lewis ended a 55 year career when he went into semi-retirement after serving as head greenkeeper at Kawartha Golf and Country for the past 22 years. Fred Curra was hired to replace him. Hugh Moulton of Windsor Park Golf Club was killed in a car accident in September.

A Regionalization Committee consisting of Dan Ardley, Bob Brewster, Blake McMaster and Thom Charters was established to study regionalization.

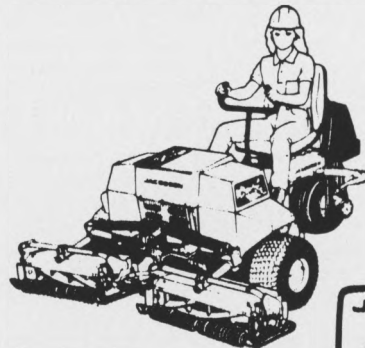


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## UPCOMING EVENTS

**JUNE 7, 1990**

OGSA Spring Field Day  
Victoria Park Golf Club, Guelph, Ontario

**JUNE 20, 1990**

Sport Turf Association, Field Day  
Kitchener, Ontario

**JULY 23, 1990**

President, Green Chairman, Superintendent  
Director Day  
Westmount Golf and Country Club  
Kitchener, Ontario



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