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PRESIDENT'S REPORT

Here we are about halfway through the golf season and from most reports, everyone is busy both with the amount of play and doing projects and course grooming.

Our spring field day was a great success. The Tournament played at Victoria Park Golf Course had superb playing conditions. The one and only other time I had played there was in 1975, the year it opened. Carmen Decorso and his staff deserve congratulations for a fine job. Ron Craig and Turf Care graciously donated his rental fleet of Yamaha golf carts and proceeds went to the GTI Building Fund. Annette Anderson, Norm McCallum and the University of Guelph staff also deserve a big thanks for hosting us again at the turf plots. This year's theme was sprayers and spreaders and again thanks to the suppliers for their demonstrations. On a personal note, if anyone found a PGA LCG Concept 9 iron could you please please call me.

I would just like to comment on our code of ethics and some disturbing incidences that have been happening. Fifteen years ago when I graduated from University, I looked at joining the OGSA because it represented both professionalism of the industry and the competitive camaraderie with other superintendents which developed real friendships. Part of the unwritten benefits of the Association was the ability to phone other course superintendents to play their course. What seems to be happening in that respect for other superintendents is eroding. A quick phone call in advance to say that you will be visiting his place whether to play or consult, visiting on your own or asked by a member, is what our code of ethics is all about. It was developed before I joined the Association, I believe, to promote courtesy and friendliness amongst superintendents. If this is lost then this business could become very cut throat as members are always asking for opinions. An off-the-wall remark by a visiting superintendent may be misinterpreted by a member and used against his superintendent.

Finally, a note on our lifestyle. We take it for granted so much. This spring my mechanic, Gary Frank, had a heart attack at the age of 43. Fortunately he will be alright after taking the summer off. Also, Steve Holmes, Donalda Golf Club's assistant superintendent at 25 is experiencing some blackouts and is under doctor's medication and cannot drive for 3 months. Sometimes we push ourselves too hard and we should know our limit. The long hours and high pressure to maintain tournament conditions year long can often give us burn out, physical exhaustion or strained family ties. Remember, life is too short; so take the time to rejuvenate yourself and reintroduce yourself to the family.

Enjoy the summer.

Gord Nimmo, CGCS

FROM THE EDITOR

Posting has begun. You are now required, by law, to post your property when you apply pesticides. The general concensus so far is that there hasn't been much reaction. Most clubs have sent covering letters to their members to try and explain. The tone of most of the letters has been that we are not doing anything different than we have done before and that all pesticide applications are made in the safest manner. A low key approach seems to be the best.

Superintendents are generally complying with the legislation and putting up the signs. The extent to which posting is being done is subject to interpretation. Most Superintendents are posting the main entrance and first tee. Some are following the regulation right to the letter in hopes of stirring up their members enough so some complaints will be lodged. Government inspectors have been out and golf courses have been visited so take note. It is an impractical regulation but never the less it is law and therefore some effort must be made to comply. With any luck we will at least see some changes in the wording.

On a different note I would like to welcome Simon George as the new editor of *Green is Beautiful*. This will be my last column as Simon now takes over. I have enjoyed doing this newsletter very much even though it has been very frustrating at times. It requires a lot of time and effort to locate and gather material and assemble this magazine. I thank all those who have submitted articles and encourage all those who haven't to please consider writing something. The 1990's will see even more sweeping changes in our industry and the best way to keep up is to exchange information and "*Green is Beautiful*" is a great way to do just that.

Evolution of the Modern Green

A look at the engineering and inner workings of our game's often unpredictable and sometimes precocious "dance floors".

By Dr. Michael J. Hurdzan
President American Society of Golf Course Architects

The regal perfection expected in modern golf greens demands the fine art of compromise between the golfer and the golf course superintendent.

The superintendent, armed with modern chemicals, maintenance equipment and caretaking procedures, continually walks a tightwire between guaranteeing the best turfgrass possible and the best playing conditions . . . while also coping with the idiosyncrasies of Mother Nature.

Meanwhile the golf course architect enters into the equation by trying to design greens that have the best possible chances of thriving . . . indeed surviving . . . under heavy play and the elements.

Due to limited budgets, knowledge and equipment, early golf greens were a far cry from the finely manicured putting surfaces we expect today. Extensive golf course research did not begin until after World War II; particularly in the area of green construction.

Almost all golf greens built before 1960 used native soils found within a few yards of the construction site.

Often, these were structurally or texturally poor soils and frequently subsoils. Also, surface drainage systems were rare. The result were greens in which optimized turf growth was unobtainable, even under the most ideal conditions . . . let alone when subjected to environmental stress, compaction and large numbers of golfers. However all golfers, especially today, expect perfect playing conditions no matter how or when the greens were constructed. During the decade from 1910–1920 this lead to modest experimentation into special soil mixes for greens by golf course architects like C.B. Macdonald, Donald Ross and F.W. Taylor.

Although there was much interest in soil modification for golf green construction for over 50 years, credit must given to Dr. Marvin Ferguson, A.S.G.C.A. who began research in 1953, with his graduate student Raymond Kunze. Their studies culminated in the USGA method of greens construction in 1960. Drs. Ferguson and Kunze, now at Michigan State University, knew the key to growing good greens was a compaction-resistant growth medium that could also produce an optimum soil water content.

In simple terms, we all know that sands compact less than soils and that coarse sand holds less water against gravity than do fine sands. The trick is to find that right combination of sands that also permits optimum turfgrass growth.

After years of research sponsored by the USGA Green Section, Dr. Ferguson developed a system of three layers of distinctly different textural materials, of various prescribed thicknesses, that became known as the USGA method of greens construction. To build such a green requires many specialized steps which makes them somewhat expensive compared to less sophisticated methods. Although the Ferguson system is a most highly researched and theoretically sound method of construction, few USGA greens are properly built. Donald Ross' attempt at soil modification for Scioto's greens built in 1916 – described in Part 1 of this series – was roughly similar to the USGA method and probably influenced F.W. Taylor's work.

The theoretical basis for the USGA green construction method is to provide a compaction-resistant growing medium, composed of sand particles of specified size, and selected organic matter that drains down quickly to an optimum soil moisture level. The key to the effectiveness of the theory, and the construction step that causes most concern, is a "perched water table effect" caused by the installation of texturally different layers.

In other words, soil physics tells us that water will not move from a small hole or pore into a large pore unless there is enough free water to break the force of capillarity. In everyday life this principle is shown by a household sponge that can absorb free water until saturated, and then for each additional drop of water added to the top of the sponge, a free drop of water will run out the bottom.

If the sponge is thick, you can look at the edge of it and see that there is more water in the lower portion than in the top due to gravity. This is known as the "perched water table effect" – saturated conditions at the bottom of the soil profile and near optimum growing conditions at the top.

Thus the top layer of USGA green is like a 12-inch thick sponge. When the green is saturated by irrigation or rain, the water is allowed to drain down from the putting surface to an acceptable soil moisture level. However, the materials that make up this 12-inch thick "sponge" must be precisely selected by the laboratory tests, and uniformly blended and installed for the system to function. This is one reason why an experienced golf course architect is essential in greens construction where a small mistake can cause big problems.

Our household sponge example is a good way to explain what happens to this excess water that gravity drains out of the USGA top layer. Water will not move out of small pores into larger ones until there is free water available that is not held by capillarity. But once the soil profile or sponge becomes saturated, the water is free to move. Usually that is downward in response to gravity if there is a place for it to go, or sideways to a place of less water. (This is how springs and artisan wells are created). Immediately below the top layer in the USGA green is a .5 to 2–4 inch layer of sand, coarser in texture, and hence larger pores than the top layer. This is like another, thinner sponge but with bigger holes. It is as if you were to put a thick household sponge with small holes on top of a thin sponge with large holes, and then place both on a layer of quarter-inch gravel. You would than have a USGA green.

If you saturated this system and allowed it to drain down, you would find that the surface of top layer is at an optimum soil moisture level to grow turf; i.e., water being conserved and available to the plant from the perched water table with the layers of fine pores determining the system's performance characteristics.

The critical elements, therefore, in USGA greens construction are:

- The top layer made with only laboratory selected materials that are uniformly blended together to produce the soil pore size required.
- The top layer installed over a uniform intermediate layer of coarser material that is also laboratory selected. Some professional turfgrass experts would disagree, but despite rumors to the contrary, this intermediate layer is essential and spun fiber cloth is not an acceptable equal.
- Both of these layers must lie uniformly over a laboratory selected gravel layer that is drained.

The only problem, from a practical standpoint, is that USGA greens must be precisely engineered. They demand a finely tuned system that allows for little or no construction error. This costs more because it requires additional construction steps and more hand labor than other less sophisticated methods. The sand-organic matter for the top layer must be blended off-site in a central mixing area which means handling 400 tons of material per green several times. The intermediate layer must be installed carefully either by hand or a small bulldozer which can grade a perfectly uniform 2–4" layer of coarse sand over gravel.

Finally, a hand-placed plastic liner must be placed between the top layer materials and the native soils if the native soils are high clay content or very fine.

In theory, any USGA method constructed green anywhere in the world would perform consistently, similar to any other USGA method green. The cost to install USGA method greens for an 18-hole course is about 25 per cent higher, or from the $100,000–$150,000 more than for less sophisticated methods. In the Midwest, the cost of a contractor-installed USGA construction method green is $4.00 per square foot.

Another notable contribution to the field of golf green construction was made by Dr. William Daniel of Purdue University, who perfected Taylor's 1916 idea of a closed drainage system. This system recognizes the uniformity of capillary water in a uniform sand profile and strives to keep greens always at a consistent soil moisture level by draining off only excess water by means of a controlled underdrain system.

This system also requires using laboratory-selected sands that are placed over a plastic liner to form a closed cell. A simple example would be to take a child's wading pool and fill it with fine sand. Then fill it with water so that the sand is fully saturated. To obtain the desired soil moisture in upper portions of the sand profile, you would punch holes in the side of the pool to drain off excess water. Or better yet, you would install a drainage hole into the bottom of the pool and you would control the water in the pool by raising or lowering the outflow end of the hose.

Thus, we come to the PURR-*Wick* system of greens construction which uses a series of water holding cells that have their optimum water levels maintained by a series of outflow pipe. The cost in PURR-Wick construction is the hand labor required to build the cells, placing and sealing the plastic liner, building the central overflow pit, and installing the sand around the cell barriers.

Although comparable in cost to USGA green construction, many golf course architects feel the requirement for a uniform depth-of-sand profile inhibits some design expression. However, in areas of limited water availability, or in ecologically sensitive areas where ground water pollution is an important issue, PURR-Wick construction is a logical solution. This is also the basis for athletic fields where it seems to be better adapted because of the more level playing surface.

The most common method of green construction today is known as the "alternate" or "improved" method. This system uses an extensive tile drainage system, and gravel backfilled directly under a 75–80 per cent sand top layer that is 12–14 inches thick, with no intermediate layers or plastic liners. Instead of trying to make a universally consistent playing surface, as do the USGA or PURR-Wick methods, the "alternate" method only strives to provide consistent playing conditions over each particular golf course. The idea is to produce a compaction resistant growing medium with good internal drainage characteristics, but without regard to conserving excess water as the other methods. The "alternate" method costs less to build (usually $1 per square foot less) because it uses tested but locally available sand and organic matter sources; requires very little hand labor; is prepared on-site to reduce handling operations, and can be done with reasonably sized machines.

In the Midwest, the contractor-installed price for the "alternate" method is about $3 per square foot. Our firm has built more than 1,500 "alternate" method greens in the Midwest and New England and each one has performed up to design expectations.

Although this method is less well-researched and less precise than PURR-Wick or USGA, it does account for the vast majority of golf greens constructed today since most golf course architects are using this or a similar method.

Based on bids submitted by golf course contractors, "alternate" method greens save a minimum of $100,000 per golf course over USGA or PURR-Wick type construction. If construction budgets are not limited, then the more exact methods are recommended.

Some years ago, Scotts Seed Company, Marysville, Ohio, recognized that while universities were building USGA type test plots, other golf courses were being constructed with "alternate" type greens. Therefore, they decided to build an "alternate" method test plot so that their results would more closely parallel the conditions faced by golf course superintendents. More such sensitivity to the real world by research facilities would be appreciated.

But even with these high tech methods of golf green construction we still see bad greens. Who's fault is it?: golf course architect, the golf course contractor, the superintendent, the golf professional pro, the membership, or Mother Nature?

The answer is any or all of the above depending on each individual situation. Dead or dying turf can be caused by so many compounding factors resulting from so many conflicting reasons that, as long as we have putting surfaces covered with live plant material, we will occasionally find bad greens. The goal is to reduce the probability of the situation whenever and wherever possible. This requires an understanding and appreciation for the complexity of the golf green and its management.

First the superintendent must be constantly compromising between doing what is best for the turf and what is best for the golfer. The best conditions for the turf is a long height-of-cut, infrequent and deep-watering, little fertilization, minimum amounts of other pesticides and chemicals, and continual aerification, topdressing, and spiking. This maintenance regime makes for strong healthy turfgrass plants that resist weeds, insects and diseases and is able to survive adverse spells of weather through cultural manipulation.

However, golfers expect a short height-of-cut, generally soft soil conditions to hold pitch shots, and lush green carpets with no surface imperfections caused by pests or maintenance equipment. Thus, the very conditions desired by the golfers predisposes the turf to weeds, insects and diseases, and contributes to compaction.

The only alternative for the superintendent is to substitute management tools and techniques – such as chemicals, hand watering, topdressing and spiking – for the best cultural condition. The superintendent constantly is walking a tightwire between providing the best turf possible at the expense of more natural plant growth management. This is such a fine balance that the slightest additional stress put on the plant by climate or chemicals may cause the plant to die.

In addition, turfgrass researchers identify new disease strains or organisms each year that can cause loss of turf with no known control. The best recent example was the mysterious disease called "C-15 Decline" which wiped out the greens at Butler National before the Western Open. Since that time, the problem was identified as a bacterial organism that plugged up the water passages in the plant. Not only is this one of the first bacterial diseases identified to injure turf, it only occurred on Toronto Bentgrass.

The intelligent golf course architect is sensitive to the concerns of both the golfer and the superintendent. And during the design and construction phases he tries to address both interests. The golf course architect specifies methods and materials which attenmpt to expand the margin of tolerance of turf desired by golfers, yet withstand most environmental or artificial stresses.

He does this by insuring the best possible surface and subsurface drainage of all turf areas: provides the most agronomically sound root-zone possible, and specifies the most genetically adapted plant material. Plans are also made for the expected long-term maintenance regime by matching the irrigation system to the soils, providing for rapid machine maintenance on most of the course and removing confounding influences like dead-air pockets, excessively low areas, or confined traffic patterns.

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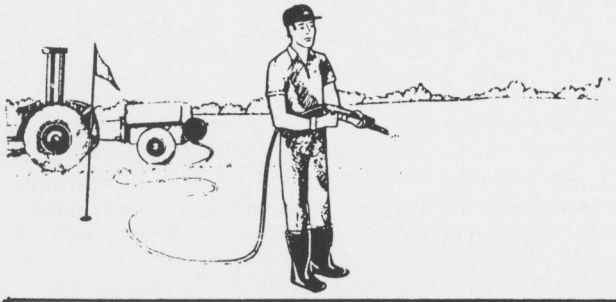

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Something is Killing Toronto's Trees: Can Parks Planners Turn Over a New Leaf?

by Pat Ohlendorf-Moffat

On the western edge of Queen's Park stands a tall, once magnificent white oak. Older than the Parliament buildings to its south, this tree was probably a seedling in the mid-1700s; it survived the early 20th century pressures of industrialization, which killed off the more sensitive pines, and even survived the construction of the University subway beneath its roots in the 1960s. But now its prematurely balding crown is a collection of naked twigs where a full dark green canopy should be rustling. In midsummer, its leaves are brown and curling, their stunted size contrasting oddly with the tree's magnificent height. Yet the tree is not dying of old age: In the wild, this species attains truly venerable ages of 500 years or more. No, something is killing this oak.

The ailing oak is not alone. Many of the city's trees are in trouble: here, thin crowns, there, discolored or stunted leaves, and, too often, young trees that are skeletal. Last year, almost every Scots elm in the city suffered as leaf-eating beetles transformed their leaves into ghostly lace. By August, all the horse chestnut leaves had turned brown, and many maples were showing premature yellows, oranges and reds, which scientists say is a sure sign of distress. Evergreens, especially, were thin, often with browning lower branches. And experts have grown worried. Says Willem Morsink, North York's manager of arborist services, "The trees are a barometer for our own health. If they are dying from drought or pollution, we are also suffering from heat and respiratory problems."

The urban forest – composed of thousands upon thousands of trees in ravines, parks and residential streets, back alleys and empty lots – plays a critical role in the city's environment. It takes in prodigious amounts of carbon dioxide (the main culprit in global warming) and gives off the oxygen on which animal and human life depends. At no small cost to themselves, trees filter the city air of carbon monoxide, airborne lead, sulfur dioxide, hydrocarbons and other chemicals. Because a mature tree pulls up hundreds of gallons of water each day through its roots and releases it in microscopic droplets through pores in its leaves, it produces moister air as well. Shelter and windbreak in winter, in summer a tree can cast shade that could reduce air conditioning bills by as much as 20 per cent. And a celebrated 1984 University of Delaware study found that, over a nine-year period, hospital patients with a view of trees out their windows "had shorter postoperative stays" and took fewer painkillers – a finding that has since been incorporated into hospital design. As city life becomes increasingly hectic, the ravines, parks and street trees become an ever more valuable antidote, reminding us of our natural roots.

To diagnose what's plaguing Toronto's urban forest, just look more closely at the Queen's Park oak. University of Toronto botanist Tom Hutchinson studies the tree thoughtfully. "It certainly looks like it's got problems of the nutritional and air pollution type," he says. Trees like this skirting major streets bear the full brunt of traffic fumes: hydrocarbons, ground-level ozone, nitrogen oxides and lead. "And," he adds, "I would guess the root system is now in trouble." A tree's roots are actually closer to the surface of the ground than most people realize – within the top two feet of soil – and they're seriously affected by what experts call "compaction": people and vehicles stamping the earth down, hardening the soil and making it less permeable to water. That's just the situation in this well-trodden park; worse, the oak is encircled by four City of Toronto park benches sunk in asphalt.

Moreover, to maintain Queen's Park weed-free turf, the city must spray on herbicides several times a year, which kill dandelions but may also harm other broad-leafed plants like trees. Then there's road salt: Metro transportation scatters 60,000 metric tonnes of it on streets such as University Avenue every winter. What's good for grass and streets is terrible for trees, but Metro and city officials say that wherever they've reduced spraying and salting, they've gotten complaints from the public. (At least Toronto's urban forest is largely spared one pollution threat: Here, nonacidic soils neutralize acid rain somewhat.)

Trees on residential streets lead an even more precarious existence than the Queen's Park oak. They're subject to overpruning to make room for hydro wires, and their deeper roots are damaged whenever anybody creates a basement entrance or front yard parking. But the very worst urban stress on trees is drought; city pavements, parking lots and patios, combined with gutters and storm drains, withhold water from the soil and move it quickly into the lake and rivers. And lawns compete with trees for water – and win – but retaining moisture in the top inch of soil. "Urban trees are struggling with almost desert conditions," says Jerry Zuchlinski, a private consultant who until last summer was City of Toronto parks and recreation forestry coordinator (east division). "Because of the way we've designed the city, where we might be getting 30 inches of rain per year, the trees are getting only about an inch of that."

The most endangered trees are the ones on main roads, either plonked into cement boxes or directly into the sidewalk with only a few inches of soil exposed. Bill Granger, director of urban design in North York and until recently the city's arborist, says such trees are "on life support." His city's crews regularly sink tubes into the hard earth to water and feed their charges. But says Granger, "Conditions are so harsh that their life span is only about 10 years."

Air pollution, traffic fumes, earth compaction, physical damage to roots, herbicides, road salt, drought . . . It's amazing that city trees survive at all. Yet just as the ills of the city trees are caused by humans, so their healing lies in human hands. What holds great promise for the future of Toronto's urban forest is a whole new way of understanding city trees now being advocated by a loosely connected group of environmentally sensitive urban planners, radicals within traditional parks departments and forward-looking landscape architects. A U of T forestry professor, Erik Jorgensen, coined the term "urban forestry" back in 1968, and now the concept has become a buzzword among planners in major cities throughout North America and Europe.

"The old way of looking at trees was as individual horticultural specimens," explains Bill Granger. In large part, it was his contact with Michael Hough, a Toronto landscape architect and author (*City Form and Natural Process* and *Out of Place: Restoring Identity to the Regional Landscape*), that transformed Granger into one of Metro's most effective advocates of the new holistic view. "Michael lifted my sights from individual trees to the whole ecosystem: from the herbaceous plants on the forest floor, to trees, to the animals and birds that are an integral part of the forest. That was a quantum leap in my education."

To grasp this concept demands the viewer put on new lenses. Then one does not see residential streets or a downtown enlivened by decorative trees, but rather the whole city existing within a forest of connected ravines and river valleys, parks and street trees. To parks managers trained in the 1950s and 1960s with that era's emphasis on recreation, it can be an unsettling concept. David McCluskey, an urban forest advocate in the Toronto planning department, elaborates: "In traditional parks

maintenance there's a high degree of manicuring, achieved by extensive mowing and spraying. You go in, you plan, you maintain nature in a static fashion. The new view places an increasing importance on encouraging natural vegetation in the city."

Naturalization of parks and the introduction of native trees on city streets are high on the urban forester's priority list. Under Bill Granger, North York parks crews have stopped mowing in broad areas of many city parks, allowing prairie grasses and native undergrowth shrubbery to return. Toronto parks has also started a native species greenhouse in High Park, growing seedlings of neglected red oak, black oak and hickory, which in 10 years will be hardy enough to plant on streets and parks. Such indigenous trees, points out Willem Morsink, are actually better suited to stressful urban conditions – and better equipped to to withstand city drought – than many of the European imports that now dominate.

What alarms planners today is the relative lack of variety in Toronto's street trees. "Most North American cities had about 80 per cent elms, and when the Dutch elm disease swept through, they became devoid of trees," says Jerry Zuchlinski. "You'd think that would have taught people a lesson, but rather than diversifying, they replaced the elms with maples." In fact, Richard Ubbens, forestry program planning administrator at Toronto parks, reports "almost half the city streets are maples, the majority Norways and silver maples." Another epidemic could wipe out this group.

Ubbens recently completed a computer inventory of Toronto's 90,000 street trees in order to manage the urban forest more rationally – to monitor their health, direct crews for pruning and pest control, and to distribute new species more widely. At least 20 species are now available for homeowners who request a city tree, says Ubbens. Meanwhile, as the High Park native seedling mature, they will be turning up in parks throughout the city.

Natural regeneration is a vital force to urban foresters. One of Michael Hough's favorite spots in Toronto is an abandoned oil refinery off Cherry Street that has literally gone to seed. On a late afternoon last summer, Hough and I walked through a meadow alive with grasses, wildflowers and several nearly mature cottonwoods and "weed trees" such as Manitoba maples that had taken root over the past 15 years. "These plants are ideally suited for this land," said Hough. "There's a place in the urban forest for these survivors, these historical remnants of meadow and marsh, and these hardy newcomers. One of the wonderful things about the urban forest, more intersting in some ways than a virgin forest, is its marvellous diversity."

The urban forestry movement is, of course, part of the larger environmental movement: Repair the damage that has been done, allow nature to do its thing, and inflict no more harm. Like many urban forest enthusiasts, Hough seeks alternatives to lawns (he's creating a woodland garden in his backyard instead, which to a traditional parks maintenance man would surely look like a sorry patch of weeds to be treated with Roundup posthaste). Lawns sap moisture and nutrients needed by trees, require chemicals to maintain, and symbolize the old-think of man controlling nature by brute force. Another tenet of urban forestry is integrated pest management: weaning management away from harmful herbicides, insecticides, fungicides and chemical fertilizers. Under Bill Granger's guidance, North York no longer uses any pesticides on its trees. Instead, crews monitor the 88,000 street trees closely, setting out sticky traps for insects such as gypsy moths, and either remove egg masses by hand or spray them with simple Pine Sol. "We deal with our streets in as organic a way as possible," says Granger. The City of Toronto hasn't gone quite that far yet, but in the last three years, under Zuchlinski, it cut pesticide usage by 80 per cent.

Some day soon, Granger envisions a sustainable urban forest: harvesting the trees, as is done in European cities, and selling useable wood to builders, furniture makers, sculptors, or just as firewood. In fact, over the last decade, neighbors on Eastbourne Avenue in Chaplin Estates, led by Don Williams, an A.Y. Jackson Secondary School geography and environmental studies teacher, have actually been using their trees – tapping the sugar and Norway maples on their street and winding up with a sugaring-off block party in spring.

But alas, even as some people admire and enjoy trees, others consider them a nuisance. Neighbors tell of citizens so eager for front yard parking that they stealthily poison a healthy street tree that the city will then be obliged to remove. "There's a process residents can go through to get the authorities to remove city trees for renovation purposes," explains acting Toronto Parks Commssioner Patricia O'Connell. "We oppose this vehemently but about 25 per cent of the time we lose." City forestry departments receive frequent calls from homeowners complaining that their tree casts too much shade for lawns and flowers, or that the fluttering seeds of maples are clogging their eaves troughs, or that their crabapple trees attract wasps.

Then there's the drain problem. "Yes, roots do get into drains and back up sewage into basements," says Richard Ubbens. "we've even had a report of tree roots emerging through the toilet, growing at a rate of two feet per day." Ubbens maintains that the problem is cracked joints in clay pipes, easily remied by installing plastic, "root-proof" alternatives. "Still, it's pretty hard to convince a guy that his problem is not the tree," adds Ubbens, "when he's clutching a fistful of roots."

Anti-tree sentiments aren't the only obstacle in the greening of the urban forest.

Advocates like Granger, Morsink, Ubbens, Zuchlinski and McCluskey are still a minority within planning and parks bureaucracies. Among Greater Toronto Area governments, only North York, Toronto, Oshawa and Oakville back the urban forest concept with programs and funds. And in Toronto, at least two urban foresters who were brought into the parks department three years ago to change the direction of forestry management have resigned, discouraged by lack of support. Acting Commissioner O'Connell denies retreating from such urban forestry goals as integrated pest management, the computerized tree inventory or native species nursery: "We have simply had personnel problems."

Another disturbing development: Despite the growth of the urban forestry movement worldwide, no Toronto university or college grants a specialist's degree in urban forestry, which would create a cadre of professionals imbued with the new ecological philosophy. In fact, the U of T's urban forestry position – launched by the gurui Erik Jorgensen himself – was cut in 1988. So Willem Morsink has taken matters into his own hands: this fall he'll launch an elective urban forestry course at Ryerson.

Meanwhile there's much the ordinary citizens can do, such as watering their street trees and not trimming lawns too close to the roots. Politicians, consultants and scientists can also help – by seeking alternatives to poisonous chemicals and road salt and by attacking the sources of urban air pollution, which in the end is probably even more harmful to humans than to trees. Last winter, the City of Toronto announced it would cut carbon dioxide emissions (the main cause of the greenhous effect) by 20 per cent by the year 2005. Discouraging the use of cars, thereby reducing noxious traffic fumes, is a major part of that effort.

So is reforestation. That's the real point. One of the best ways to create a healthier city is to plant more trees. At last, some municipalities have begun to plant more street trees than they remove (2,500 versus 180 in North York, and 3000 versus 1,500 in Toronto last year). Meanwhile, a bewildering number of other tree-planting ventures are currently underway, including municipal Arbor Day, Boy Scout plantings, April's Earth Week (which put in seedlings on the islands, at the waterfront and in the Don Valley) and the East York Outing Club.

And in these efforts, nothing augurs better for the future of Toronto's urban forest than the commitment of the young.

On a mild and sunny April morning, an odd sight distracts motorists travelling west of Leslie on Finch Avenue: A horde of teenagers, most in jeans and bright yellow oilcloth slickers, are stationed with shovels and pails on a slope on the East Don River. Waiting in four North York parks trucks at the bottom of the hill are 350 10-year-old native trees (black walnut, sugar maple, autumn olive, mountain ash and high bush cranberry shrubs), plus water, wood chips, gas barbecue and hot dogs.

This is no casual undertaking. Every spring since 1983, North Toronto Collegiate environmental science teacher Janice Palmer has brought her senior students here to help transform the once conventionally mown and sprayed park into a naturalized wonderland. And every fall she troops back with a new group to remulch the young trees, and paint a nontoxic rodent repellent on their trunks.

While the students begin digging holes, Palmer, arborist Bill Granger and I stroll along the river to view the previous years' efforts. "The survival of our 3,500 native trees isn't a matter of luck," says Palmer. "Planting and caring for them has been hard work, but well worth it." Granger adds, "There's no way my staff

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NEW MEMBER POSTINGS

	CLASSIFICATION
Richard Fortier	F
Bruce Alexander Weatherson	F
Robert F. Ackerman	F
Dan O'Connor	B
Mark Piccolo	F
Norman (Brett) Jenkins	B
Steve Conners	F
V-Quip Inc.	E

If any member has an objection to the above persons joining the OGSA, *the secretary must be notified in writing within* 30 *days.*

A PATCH OF GREEN FROM ESSEX –

by S. G. Mills

Spring in the Sun Parlor has been more like Spring in Upper Canada. Cool and somewhat wet. Great for turfgrass – not so great for golfers. All courses here are in great shape and ready for whatever "mom" has to throw at us for the duration. The duration is already considerably shorter but things always average out.

The area newsline has Monty Anderson's Pointe West Golf Club in really good condition and this year part of the CPGA tour will be played there for the first time. The Windsor–Roseland Charity Classic raises over $50,000 annually for local charities and was the brainchild of Essex Professional, Don Harrison. The Tournament is a Pro-Am for two days and Pro only for the last two rounds. Roseland Golf Club has been the annual host until this year when the new Pointe West course was added to the event.

Ken Nelson has the new Sutton Creek Golf Club at the grow stage and will open for limited member only play this Fall. Sutton is a Rob Heaslip design that will add substantially to the Essex–Kent golf scene.

Our Michigan friends had the pleasure of hosting the Mazda Seniors at Dearborn Country Club, a Donald Ross course that was refurbished in the '60's by Robbie Robinson and the Kirkpatrick Brothers. Mark Schneider and yours truly attended the practice round. The course was in excellent condition. Wish we had some of the poa controls that are available across the border.

The month of May marked the foundation of the Essex–Kent Greenkeepers Society. The impetus behind such an endeavor was the fact that many of the most Southern of our profession are so far removed from the central part of the province that they generally only attend the National Conference and the Ontario Symposium. This group has held its second meeting with excellent attendance at both functions.

Westmount Golf Club – This Year's Site of the President, Greenschairman, Superintendent, Club Manager Day

Westmont Golf Club

The Club is located within the cities of Kitchener and Waterloo. The course was designed by Stanley Thompson. Construction was started in 1929 and the course opened for play in 1931. The property is very undulating. Most of the holes were carved out of bush and swamp. The trees consisted mostly of maple, beech and ash.

Many renovations have been carried out over the years: in 1957 Robbie Robinson designed 3 new holes to make room for a practice facility and in the early 60's he also renovated some greens and trees. In the early 70's some greens were renovated and in the early 80's dangerous blind areas were removed from two of the holes.

In 1986 The Club hired Tom McBroom to do a Master Plan for the Golf Course. Since that time renovations to the practice range, the putting green, the 17th tee and some bunker renovations have been completed. The present plan is to do some of the recommendations from the plan annually, i.e. this year we are renovating the 12th green, 12th tee and some more bunkers. the work will be carried out in the fall so play will be affected minimally.

Over the years the club has hosted numerous golf tournaments including: Canadian Open, Canadian and Ontario Amateur Championships, Canadian Professional Golf Association Championship, Canadian and the Ladies Championships. This year the club is hosting the Ladies Professional Golf Association Tournament sponsored by du Maurier Ltd. from June 25 to July 1.

Hugh Kirkpatrick
Golf Course Superintendent

Something is Killing Toronto's Trees:

Continued from page 10

could do this on their own." As we approach a meadow flanked by a grove of black walnuts the students planted years ago, Granger and Palmer point out with pride the clumps of native wild rose, honeysuckle, dogwood, nannyberry and sumac that have returned since the crews stopped mowing; attracted by the new shelter and food sources, rabbits, finches, woodpeckers and deer have returned as well. The urban forest is greater than the sum of its trees.

One of the tree planters, Miriam Holland, rests on her shovel to talk. Now a 23-year-old U of T student, shes's one of a few ex-students who return each year. "Kids are really encouraged to know that they can do something that matters. Coming back every year, I enjoy seeing the continuing support for this project, and seeing the trees mature."

Despite its problems, what greater promise could there be for the urban forest than people who enjoy seeing, and helping, it grow?

15 YEARS AGO TO-DAY

by Barry Endicott

The Board of Directors in 1975 was Paul Dermott (president), Allan Beeney (vice president), Carl Bennet (secretary), Cameron Cairncross, Dave Gourlay, Robert Hall, John Hutchinson, Whitey Jones, Helmot Kopp, Paul Scenna, Bob Heron (past president and editor).

The CGSAA Turf Conference and Show was held in New Orleans. The RCGA Turf Conference Show was held at the Skyline Hotel in Toronto on March 18–20. The Canadian Golf Superintendents Association took over the administration and operation of the Turf Conference and Show with the co-operation of the Royal Canadian Golf Association.

Graham Shouldice was promoted from assistant to Superintendent at London Highlands Golf Club. Willfred Wallace was the new Superintendent at Erie Downs, Doug Hoskins at the National, Blake McMaster at Brampton Golf Club, Dave Chapman at Victoria Park Golf Club and Ross Thurston at Cambridge Country Club. Bob Hall moved on from Toronto Ladies to Foreman of Parks and Recreation, Markham.

John Stoughton at the Barrie Country Club hosted the Ontario Open. Paul Scenna prepared the ice for the British Consuls Curling Championship at the Preston Arena in Cambridge. Bill Hynd, St. Georges, hosted the Ladies Professional Golfers and Ed Ortleib, hosted the Canadian P.G.A. Tournament.

Bill Glashen, Niagara Parks Golf Course, Doug Brown, Erie Shores Golf Club, Dave Chapman, Cambridge G.C., Dick Ingram, Lido Golf Course, Steve Miller, Dundas Valley Golf Course, Allen Mills, South Muskoka Golf Course, Gordon Orr, Kleinburg Golf Club, Walter Hach, Connestoga Golf Club and A. Murphy Induismin Ltd. were new members. Art Price became a life member of the OGSA. George Drew, Richmond Hill Golf Club, died at the age of 65 on his golf course on October 31. George was 14 years assistant and Superintendent at Oshawa Golf Club, 14 years at London Hunt and 15 years at Richmond Golf Club. Jim Wyllie, Lambton Golf and Country Club was the president of the CGSA.

Monthly meetings were held at North Halton, Al Beeney, Summit (spring dance), Cam Cairncross, Essex, Dave Moote, Westview, Keith Nesbit, Galt, Paul Scenna and Dalewood, Hugh Kirkpatrick. The Christmas Party was held at Chinguacousy, Henry Guertin.

The second annual President-Green Chairman-Superintendent Tournament was held at the Weston Golf Club on August 1st. The Pro-Superintendent Tournament was held at the New Dundee Golf Club. The McClumpha Tournament was held at Chinguacousy Country Club, October 6th.

The Horticulture Apprentice Program with a new Turf Management option at Humber College was finalized under the direction of Paul Dermott, Gord Witteveen, Dave Gourlay, Cam Cairncross, Bob Heron and Ted Hartwell. Interested students will be paid 75% of their salary plus expenses, while attending this course.

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UPCOMING EVENTS

AUGUST 13, 1990
OTRF Golf Tournament

SEPTEMBER 11, 1990
Spring Lakes Golf Club, Stouffville, Ont.

SEPTEMBER 25, 26, 1990
GCSAA SEMINAR, GOLF COURSE
Construction Techniques and Management
Devils Pulpit Golf Course, Caledon, Ont.

DECEMBER 9 – 12
CGSA CONFERENCE AND SHOW
Montreal Convention Centre,
Montreal, P.Q.

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