(Spring Disease continued)

"baby" symptomatic areas with additional water and fertilizer to relieve stress and promote recovery. Unfortunately, in many cases **Poa annua** and other turf weeds recolonize take-all patch infected areas.

If this problem becomes recurring, there are several courses of action to take over the long term. One course is to utilize ammonium-based acidifying fertilizers spring and fall. These fertilizers may decrease disease by stimulating bacteria in the rhizosphere that inhibit *Gaeumannomyces*. Also, core aerfication promotes rooting and microbial competition and breakdown of thatch, which can lessen the impact of take-all.

Finally, we have seen some success with repeated applications of DMI fungicides such as Rubigan. However, the best timing for fungicide use is a question, and the expense of multiple applications to several greens or many acres of fairways makes this option less palatable. Research on possible cultural and biological controls for take-all continues, as do fungicide timing and rate studies.

A final note — the hot and dry conditions we saw in June also caused a number of complaints about dark rings on putting greens. These rings are very common on older golf courses, and are commonly referred to as "superficial fairy rings". These very rarely cause any damage to the turf, and act as an indication that fertility levels are low. Extra N may be needed this year because of the heavier than normal rainfall we had in May.

How hot does it feel today?

Temperature and humidity are the most important factors influencing your summertime comfort. This table, using figures from the National Weather Service, shows the "apparent" temperature – how the hot weather really *feels*.

AIR TEMPERATURE (DEGREES F.)

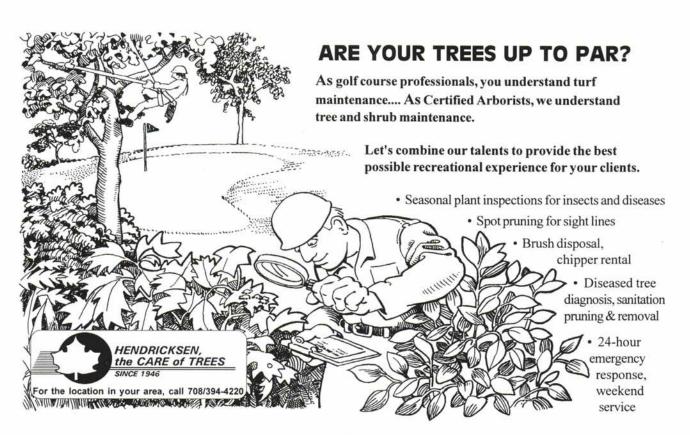
RELATIVE HUMIDITY	80	85 APPAREN	90 NT TEMPI	95 ERATURE	100
20%	77	82	87	93	99
30%	78	84	90	96	104
40%	79	86	93	101	110
50%	81	88	96	107	120
60%	82	90	100	114	132
70%	85	93	106	124	144
80%	86	97	113	136	
90%	88	102	122		
100%	91	108			

The National Institute of Health warns that hot weather can be especially difficult for the elderly and people with heart problems, stroke or diabetes. To avoid heat-related problems this summer, the Institute recommends:

Stay out of direct sunlight.

Wear a hat and light-colored, loose-fitting clothes.

Avoid strenuous exercise, and drink plenty of liquids.



Golf & The Fight for Discretionary Dollars

Part II - Fueling the Growth of Golf by Gregory E. Martin

As golf development continues to boom, current golf course construction remains at a record pace. So far, there have been more course openings in the 90's than in all of the 1980's. Why has golf, in spite of economic cycles and leisure activities so available, enjoyed such rampant growth? There are two specific reasons, I believe, that have fueled the recent growth of golf. They are: television and golf course maintenance techniques.

Primarily, golf's growth in popularity can be traced to television and its implications. Television remains the fuel of the golf explosion. It has exposed us to a variety of appealing aspects of the sport. Each week, we are engaged by the lonely business of the golfers while exhilarated with the surroundings of the golf course architecture. Golf rejuvenates us; we see beautiful courses, hosting million dollar tournaments that attract the finest golfers in the world accomplishing what each weekend golfer can only dream in a perfectly manicured arena.

Television gave us access to the competitors and the courses they play. Television has also given us the opportunity to see exotic places and courses that are sited in the most intriguing and beautiful locations. We can now watch golfers play the enchanted and barren linkslands of St. Andrews; we can witness the "back nine" beauty of Augusta with its towering pines, flowering dogwoods and immaculate conditions; or the majestic seaside links at Pebble Beach. This year we saw the simple elegance of Shinnecock Hills, demanding the best from the best.

Television coverage of these courses and their events captured our fascination and prompted an evolution in golf course design. Modern era designs from Dye, Nicklaus, Fazio, the Jones family and others gave us new visual sensations with their concoctions. While these older courses, like Pebble Beach, Shinnecock Hills and Pine Valley were designed using little or no manipulation, modern day architects use sophisicated landform artistry to create distinct 'golfform' features from less attractive and even unusable sites. This evolution of Golf Course Architecture has transformed the industry.

As a result, the most potent "fuel" of the golf industry was borne to accommodate these highly visual and recreationally challenging courses. The era of the televised championship medal play on Tournament of Players Championship Courses has fostered a wider appreciation of the golf environment and with that came the greatest evolutions in the past two decades: golf course maintenance techniques. Each of us see perfectly manicured courses weekly and expect those same conditions at our local municipal or country club.

Maintenance costs have soared in order to produce better conditioned fairways, quicker healing tees, wall to wall irrigation and 'fast' greens. As a result, golf course



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(continued page 24)

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(Golf & Dollars continued)

superintendents have a greater understanding of turfgrass requirements that require more sophisicated equipment, irrigation techniques and more elaborate maintenance operations. It is this rising quality and condition "expectation" of the average golfer that has propelled the growth and evolution of the golf industry.

While the standards of the average golfer continue to be raised, golf course architects and superintendents must look to develop more unique challenges with sustainable landscapes. Creative design and maintenance is needed by reducing maintained turf and establishing wet and dry meadows, wildlife refuge areas and more diverse water systems. A positive first step is the Audubon Sanctuary Status. This should be the goal of each and every superintendent, architect or golf manager. The environmental and economic benefits generated by Audubon Sanctuary Status is lasting and will be seen by the golfing public as environmental leadership, aiding the long term interests of the golf industry.

We are certainly intrigued with the sport, too. This game, which was intended for recreation and leisure, gets in our blood. While wrestling with our game every week we are comforted, somewhat, with pleasing pace and the course environment. Because of its relaxing pace, its relationship to the outdoors, its unique challenge and the camaraderie that golf can provide, this sport has become popular across generations and particularly, with masses of baby boomers.

So golf has become a big business. The largest segment of the population is now reaching middle age when earning power is at a peak. It is believed that business conducted on the golf course is second only to the board room. The average player is well educated, has an above average income and is, maybe, most importantly, willing to spend it on golf gadgetry of all shapes and sizes. 15 billion dollars were spent last year on golf related products. This translates into more access to products and a wider requirement for the availability of the sport.

What was once a recreation, a sport afforded by an exclusive leisure class, is now an industry available and demanded by most segments of society. Most professions within the golf industry were learned trades. Colleges now offer studies in Club Management, Golf Course Architecture, and Turfgrass Sciences. It was noted recently, at a Midwest State University, which graduated 30+from the Turfgrass Science Department 10 years ago now have over 80 in the senior class curriculum. It is clear that golf has developed into an industry.

Maybe the past two decades reflect a second "Golden Age of Golf". While this growth continues, it is necessary to deliberate the inevitable changes that are necessary to sustain the industry through the coming years. As professionals within this industry, we must be acutely aware of the cycles of the sports world. Look at tennis or even baseball. As stewards of the sport we should encourage wider access and greater expectations, but understand that this can encourage scrutiny.



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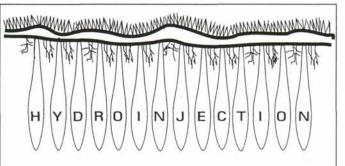
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"Lighten Up!"

by John Gurke

"Temperatures Soaring to Record Levels" ...

"Stalled High Pressure" ...

We read these headlines on the weather page (for us early-risers, it's typically yesterday's paper), and isn't it interesting how they describe - to a tee, if you'll pardon my pun — our own dispositions during these "hot times?" Those rare opportunities to sit in an air-conditioned office for reflection and recharge are welcome, indeed. I find myself attempting, as all of us should and via any means possible, to LIGHTEN UP - to look at things with a sense of humor. My air-conditioned mind passes through stages, beginning with stage 1: The oxymoron phase. Terms come to mind such as, "Automatic irrigation," "Summer vacation," "Pythium control," and "A fun game of golf." I have to chuckle. Given a few extra moments of 64-degree splendor, stage 2 sets in: The anecdote phase. In this stage, I reflect on the many stories I've heard (and told) of strange occurrences on the golf course which, with benefit of hindsight, are truly funny.

A close personal friend of mine in the business related to me the tale of Sunday, July 5th, 1980-something, when, just hours before the final round of a relatively major PGA tour event, he arrived at work directly from a Fourth of July celebration. Feeling confident that his youthful mind was capable of carrying out his assigned responsibility of changing cups (I'm told they even paint a spot where the cup should go), he proceeded out onto the course. All went well, so thought he, until the panicked chatter of tournament officials over his radio aroused his attention. "The flag on number two is set at a forty-five degree angle!" was followed minutes later by, "There's two # ★ ® © % \$! holes on the seventh!" and then, "There isn't ANY hole on number nine!" My close personal friend had done the impossible, according to the PGA, and wasn't even allowed to atone for his mistakes, Definitely NOT funny on July 5th, 1980-something, but a downright hilarious mindelixir on June 23rd, 1995.

Other stories briefly pop up, sharing the common bond of being serious problems at the time, but less serious over the long haul. From the employee who was directed to dump the load of topdressing at the twelfth green, and proceeded to dump it ON the twelfth green, to the employees who were hauled away (thankfully on a Monday) from work by the DEA; from the guy who constantly puts diesel in gas tanks and gas in diesel tanks (we all have one), to the fellow who seems to find water hazards with whatever piece of machinery he is operating: These are the things which try our ability to LIGHTEN UP.

Is there a point to all this? An underlying theme? I guess the point is that we're all human — we are, by our nature, prone to make mistaks. With this in mind, it's not only possible to learn from them, but to laugh at them. Take a few minutes, turn the a/c on, and try it — JUST LIGHTEN UP.

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Insect Control Products Take New Direction in '95

by R. L. Brandenburg North Carolina State University

As I look at new turf insect pest control options for 1995, I see a continuing effort to produce new products that are both environmentally and socially acceptable.

Odor is a consideration. The public often becomes alarmed about pesticide use if they can smell the product. Some feel that if they smell a strong odor they are receiving an unhealthy exposure. Others simply don't want to smell such products. Even a modest odor from pesticides uses is, therefore, less than desirable.

Consider the DowElanco Dursban product. This 2EC formulation of chlorpyrifos is a lower odor formulation that will make it more acceptable for some uses and users.

The new formulation will replace other Dursban formulations and features a special low-odor carrier system. a "Caution" label signal word, and an expanded label for broader spectrum insect control.

Use of synthetic pyrethroids has been heavily researched in recent years and is resulting in numerous new products. Tempo 2, by Miles Inc., chronoicotinyl. The broad spectrum product controls a number of soil pests in both turf and ornamentals.

It also controls by both contact and ingestion, A granular formulation is planned for release in 1995.

Merit 75WSP offers long residual activity at low use rates, low mammalian toxicity, and a "Caution" signal

Merit appears to be most effective when used as a preventive treatment applied during egg laying or early egg hatch of such insect pests as white grubs.

Products such as Turplex bioinsecticide from Scotts Proturf and Agridyne Technologies represent efforts to use naturally occurring insecticides. The active ingredient in this product is azadirachtin, which is extracted from the seed of the tropical neem tree. It is a natural product.

Azadirachtin acts as an insect growth regulator and affects larval stages of insects. It disrupts development. It kills the insect rather slowly, but stops feeding almost immediately. The product is practically nontoxic to people, mammals, and birds.

A final area of interest is use of entomogenous nematodes. New products, including Vector TL and Vector MC, biosys products by Lesco, have become available the past year. These products have gained a lot of attention, not only because of their unique nature, but also because dramatic improvements have been made in product formulations.

Buying living organisms in a jug, pouring them in a sprayer, and applying them to a turf area to attack pest species almost sounds like something from a science fiction movie.

The products do, however, require special considerations in application, the environmental conditions, and expectations. Screens and filters must be removed from sprayers. Products must be applied to moist soils and ir-

(continued page 30)



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rigated immediately after treatment. Nematodes are generally slow to produce results. With mole crickets, up to three weeks may be required before a reduction in damage is evident. However, environmental safety makes them excellent choices in some ecologically sensitive areas.

This is only a brief overview of new directions for insect pect control. Inclusion of trade names does not indicate endorsement nor does exclusion indicate any sort of criticism.

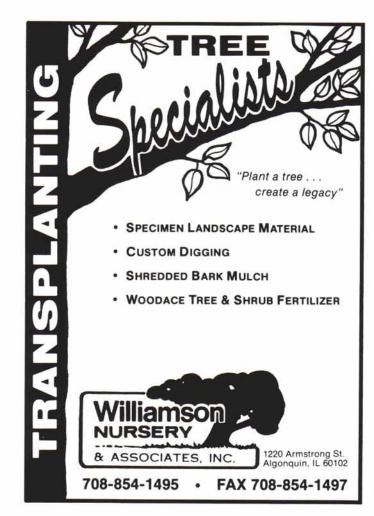
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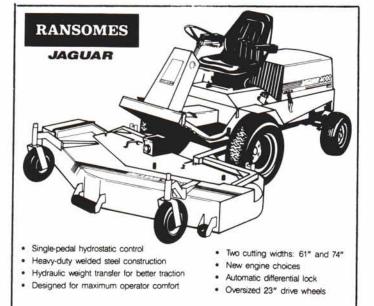
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From a Local Correspondent by John N. MacLeod

During May and early June I played in two annual golf outings; the Golf Collectors Society Hickory Hacker held at Schaumburg Golf Club and the Illinois St. Andrews Society Kilted Classic held at Arrowhead Golf Club. Golf attire was turn of the century nickers and of course Scottish kilts respectively. Nick Hougisto and Jim Roberts of Schaumburg G.C. and Bob Breen and Tom Byrne of Arrowhead G.C. had their courses in great shape for the outings. I know they all got a kick out of seeing me and others in our nickers and Highland dress. And speaking of dress, when hot weather hit this June the problem of proper attire on the golf course became an issue. Dress codes and rules requiring shirts are usual standards for most courses, but many people peel down to beat the heat. This reminds me of a story about two famous California golfers. On a hot August day comedians George Burns and Harpo Marx came to Hillcrest Country Club to play a round of golf. It was very hot, over 100 degrees, and they decided to play without shirts. When course officials heard about this, they hurried to find them. Shirts were to be worn at all times they were told firmly. "Why?" demanded Burns, "we can go to the beach without them." "Rules are rules" was the reply, it's in the rules book ... so the comedians put their shirts back on and continued to play. A little later someone rushed to the clubhouse to say that Burns and Marx were now playing without their pants. Out rushed the course officials, and sure enough the pair had shirts on but were now playing in their undershorts. One official yelled "you can't play without pants". Harpo Marx reminded the official of their rule book. "It says we can't play without shirts, but show me the rule that says we can't play without pants". I wonder what the rules committee would have said about wearing kilts?!!





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