

ers Almanac. They predicted that Wisconsin would be under water in 1988 instead of covered with dust. Consider their forecast for southern Wisconsin:

"... colder than normal temperatures and heavy rains are expected through most of May, with brief mild spells. Sunnier and more seasonable weather is in the offing for the end of May and the latter one-half of June, interrupted by cold and wet periods during early June."

Gee, that's not what we experienced in Madison!

For northern Wisconsin, their forecast went like this:

"May and June will have more frequent and prolonged cold periods, with heavy rains slated for the last week of May and the first half of June."

Someone from up north will have to tell me how accurate that forecast turned out to be.

Generally, I am not a highly superstitious person. But even I flinched

when the UW-Madison Meteorology Department named a new director to the school's Space Science and Engineering Center. He's Francis Bretherton, former director of the National Center for Atmospheric Research. His qualifications are impressive, but the thing that caught my eye was that we hired a man who forecasts a "Dust Bowl" for the central U.S., which includes us. I call that a bad omen!

The downside of such a catastrophic event can get to be depressing. The misery of the farmers in drought areas was overwhelming. It was made worse by watching the millions of dollars made by grubby traders on the futures market, profiting from that farm misery. Who wasn't disgusted by the gouging attempted by supermarkets, placing all the blame for unjustified and unrelated price increases at the feet of the drought? Who wasn't saddened to see so many urban plants, especially city trees, struggle from stress inflicted by the heat and lack of rainfall? Who

among us didn't cheer when suggestions to divert water from the Great Lakes to the Mississippi were laughed at by key officials? Who failed to notice that at times it seemed the only prosperous plants on golf courses were the weeds?

Finally, the whole world gained something valuable from our drought — a more clear understanding of the "greenhouse effect". Although it was first described almost a century ago, the time has really come when we must more carefully consider action/reaction equations. We need to be worried about how drastic this would change life for our children and grandchildren.

Yet, despite the gloom such a summer brings and the frightening harbingers that it conjures up, I'm optimistic. The time has not yet come to abandon our planet. As we say so often in our business of managing golf courses, "Next year will be better."

I sure hope so.

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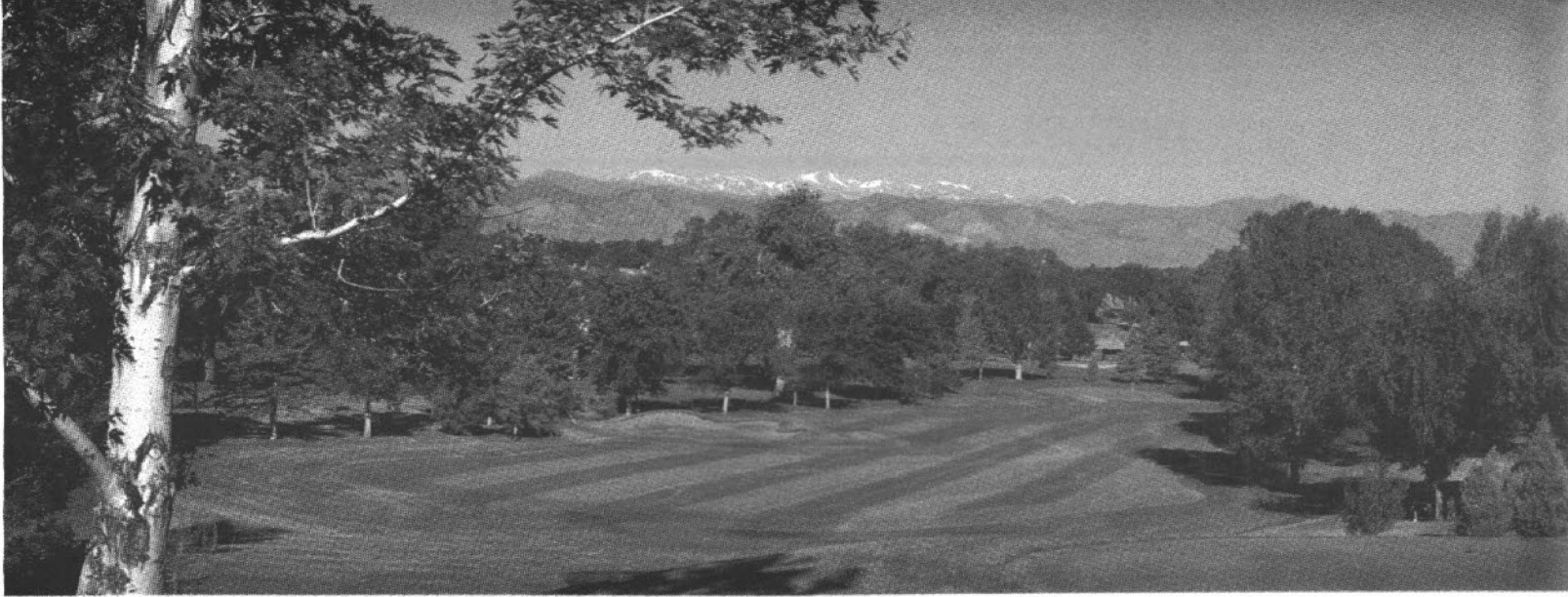
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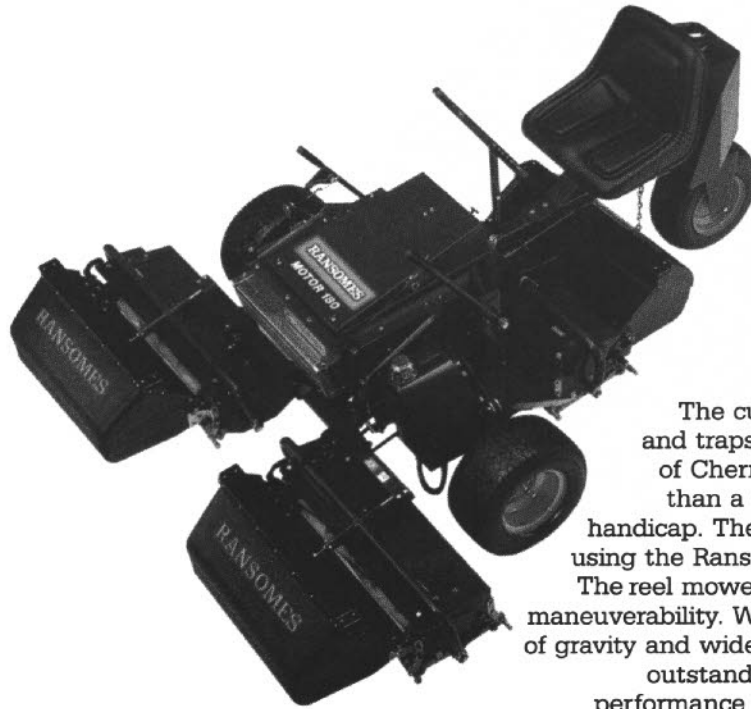
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Rock Irons, Roller Bases and Harsh Reality

By James M. Latham
Director, Great Lakes Region,
USGA Green Section



The 1988 season is one of great challenge throughout the Great Lakes Region, mostly dealing with water (or lack of it) and water management (or lack of it). Early on, an unfortunate few courses relearned the vicious nature of crystalline water associated with ice sheet damage and freeze/thaw problems which caused winter kill of *Poa annua*. Not too long after the damage became evident, the pattern for the season was set — this was NOT to be a wet season. Few folks missed the opportunity in May to let the courses dry down to suppress the vigor of *Poa annua*. There was no warm, spring rain to get things started, though, and stolon growth on greens was slow to develop.

Irrigation became an all-encompassing chore in all but a handful of courses and water was applied with reckless abandon during the two or three months of southwestern weather we enjoyed. High evapotranspiration kept the pumps going and the sale of hose and rollerbase sprinklers reached an all-time high. Where an adequate supply of water was at hand and where there were enough hands to supplement irrigation systems, things couldn't have been better. Fungicide inventories gathered dust and trade-ins were being discussed . . . until the last week in July or the first in August.

What hit the fan then was normal Midwestern weather — humidity and continuing heat. All of a sudden the applied water didn't go away. It hung around in the soil or thatch to act like a heat exchanger out of commission. It kept absorbing daytime heat to keep things cozy at night. The outward re-radiation of heat at night was reduced and our temporary desert climate was replaced by a sauna. The fungicide folks were solvent again. *Poa annua* began to make its summer trip south, which is really unfair after all the water that had been poured on it to keep it alive for two months. Reality returned.

About then, I wondered why we spend so much time, money and effort on the control of *Poa annua*, but when

it goes away without any help why do we spend so much time, money and effort to keep it alive? Ego? Masochism? Or is it our inability to replace P.a. at the inopportune time that it departs? Or is it a demand by golfers that green is the only acceptable color, no matter what? Hopefully, Green Committee people recognized that all things in nature are beyond the total control of people and despite our most up-to-date practices, some plants just sicken and die. And rather than becoming paranoid about losses, they will remain content with the turf that was saved. The spread of bentgrass in fairways did keep on keeping on — with less competition, so there was a bright side to the P.a. losses.

The true unfortunates this year are those whose water supply ran out, was cut off or perhaps worse yet, those whose water supply went bad. The contamination will have a prolonged effect on the soil. This did happen to courses in Canton, Illinois with sudden salt buildup and in Big Sky, Montana where the sewage effluent used for irrigation became a cause of turf deterioration. Both of these cases are reminders to have water analyses done every couple of years to track the condition of irrigation water. Had it not been for Brad Anderson's annual check at Canton, it is likely that the sudden rise in salinity would have gone undetected until the turf and trees were dead or severely damaged.

Water woes invoke the inevitable comments about poor drainage. Continued observations prove that greens built under exact Green Section specifications continue to perform admirably. Laboratory determinations continue to show that many peats are unfit for use with sands acceptable for putting green use because they have too much silt and/or clay in them. Like water, topdressing mixes should be checked periodically.

Incidentally, the USGA session at the North Central Turf Expo at Pheasant Run will feature all of the facets of Master Planning plus a description

of the total renovation of the North Course at Detroit Golf Club this fall, by Superintendent Clem Wolfrom. Superintendents who are interested in course improvement should encourage their Committee Chairmen to attend this morning session on Tuesday, December 6.

Localized Dry Spots were prevalent again this year in sandy mixtures — even on one new Wisconsin green — in April — before it had ever been mowed. L.D.S. were also prevalent on a set of Wisconsin greens that had never seen sand or much topdressing of any sort, with a two inch thatch under the playing surface.

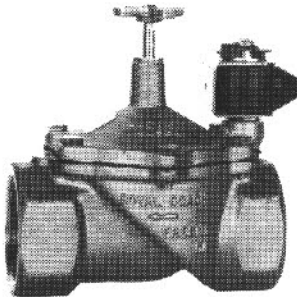
This brings us to Rock Irons. There is a nice little course near the headwaters of the Missouri River, where the largest selling item in the golf shop are Rock Irons. The fairways are so stony that no one wants to break their new clubs — so they buy used 4, 5 and 6 irons for use in the worst areas. If they break 'em they just throw away the pieces and get another. That course, by the way, has a very active caddy program based on the Western Golf Association setup that is doing exceptionally well. How many 9-hole courses have 12 fully-qualified Class A caddies available?

One final note on quality at the end of a very stressful summer. The Chairman of the USGA Senior Amateur Championship Committee told the contestants at the contestants dinner September 19, that the Milwaukee Country Club was only the second course in his 28 (or 38) years of attending championships, which required no white paint. The only directive that the USGA's Tom Meeks gave to Superintendent Danny Quast was "Don't Change Anything!"

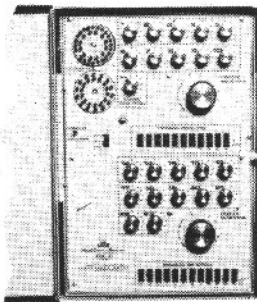
And that was "The Summer of '88." Some good, more bad. As we improve our understanding of water management under the environmental and cultural stresses to which golf turf is subjected, we will be better able to cope with similar problems in the future.

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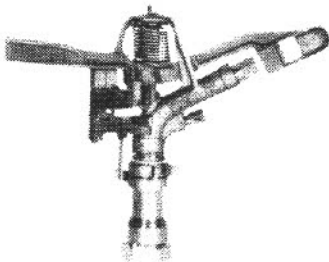
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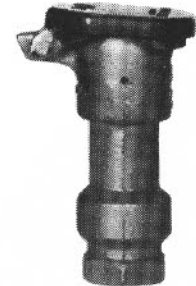
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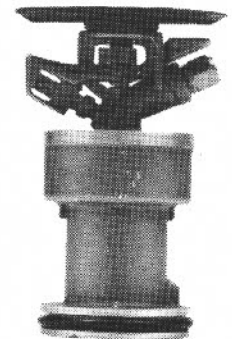
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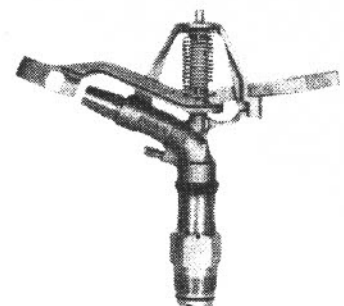
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WGCSA FALL DINNER DANCE — WE KEEP GROWING!

By Mark Kienert

If you haven't made it by now, you are missing half the fun! The WGCSA celebrated the fifth anniversary of our "Couples Get-Away Weekend," more simply known as the Dinner Dance, in Stevens Point.

On a perfect fall day in central Wisconsin, the Stevens Point Country Club was home to our weekend golfing activities. Golf Course Superintendent Jeff Bottensek and his able Assistant, Dotie Sullivan, put together a perfect golf course for their many friends in the industry. A record 54 golfers competed in the annual Mr. & Mrs. Moe couples golf tournament. MO and JO Otto unseated perennial champions Bruce and Mary Worzella for the right to the top prize. Unconfirmed rumor has it that the Worzellas "threw" the contest. Reports suggest that Mary was overheard to threaten Bruce that she would lower his forehead with the trophy if they won it again. An investigation is contemplated by the Commissioner's office.

Flag event winners went to Al and Margaret Vrana for longest drive. They traveled all the way from Arkansas! A pair of 6" rulers went to Marc and Laurie Davison for the shortest drive. A magnifying glass went to the accurate couple of Curt and Mary Larson for closest to the pin. Most

times in the water and highest score seem to go hand in hand, and both went to Dennis and Kathy Robinson who took home the "Tub Buddy and Solar Calculator" respectively, for their monumental efforts. Bunker shot artists for the tourney were Curt and Mary Larson. Most putts won a numbers 10-100 coloring book for Dave and Gloria Murgatroyd in what Dave termed as "Pure Busch League play." A can of corn chips went to Mark and Bonnie Grundman and Jo and Wayne Otto for tying for the most chip-ins. Fewest putts — a bottle of Finesse Conditioner — went to our champions Wayne and Jo, proving once and for all their game that day wasn't "Otto-Whack." The Disney photographers were on hand to capture the longest putt drilled in by Dan Barrett's better half Sherri. By the way, they also won the drawing for the "Free Room." Not a bad haul for first timers. Most trees hit on a single hole, or what could be the unkindest cut of all, a hacksaw to Red and Jo Roskopf.

With practice you get perfection. Mark and Bonnie Grundman continued the growing trend by offering hot Hors d'oeuvres in the enormously popular, distributor sponsored Hospitality Room. It has become the place to meet.

Eleven new couples joined in the fun and made it to their first couples weekend. As we continued to grow, so does the family of Chuck and Kim Wollner. Kim played golf while in labor and finished her long day by giving birth to a daughter later that evening. More could be said, but I'll leave it with this: "Chuck, this is supposed to be a weekend of relaxation!" Thanks for the cigars, a tradition not so entirely endorsed by the fairer sex in the smoke-filled room.

The dance band "Thirsty" held us on the dance floor once again all night long. Steve Berndt, bass player for the group, told me we are the most energetic and fun-loving group he has ever had the pleasure of playing before and remembered our "Party Animal" status from two years ago. Little does he know of the pent up energy and need to blow off a little steam after an angry summer like the one we just experienced!

It was reported that all of Stevens Point was out of Tylenol by noon on Sunday. It has been so "windy" up here the last few days that I know it is because of the tremendous blow out and vacuum created by our departure. Mother Nature is trying her best to return things back to normal.

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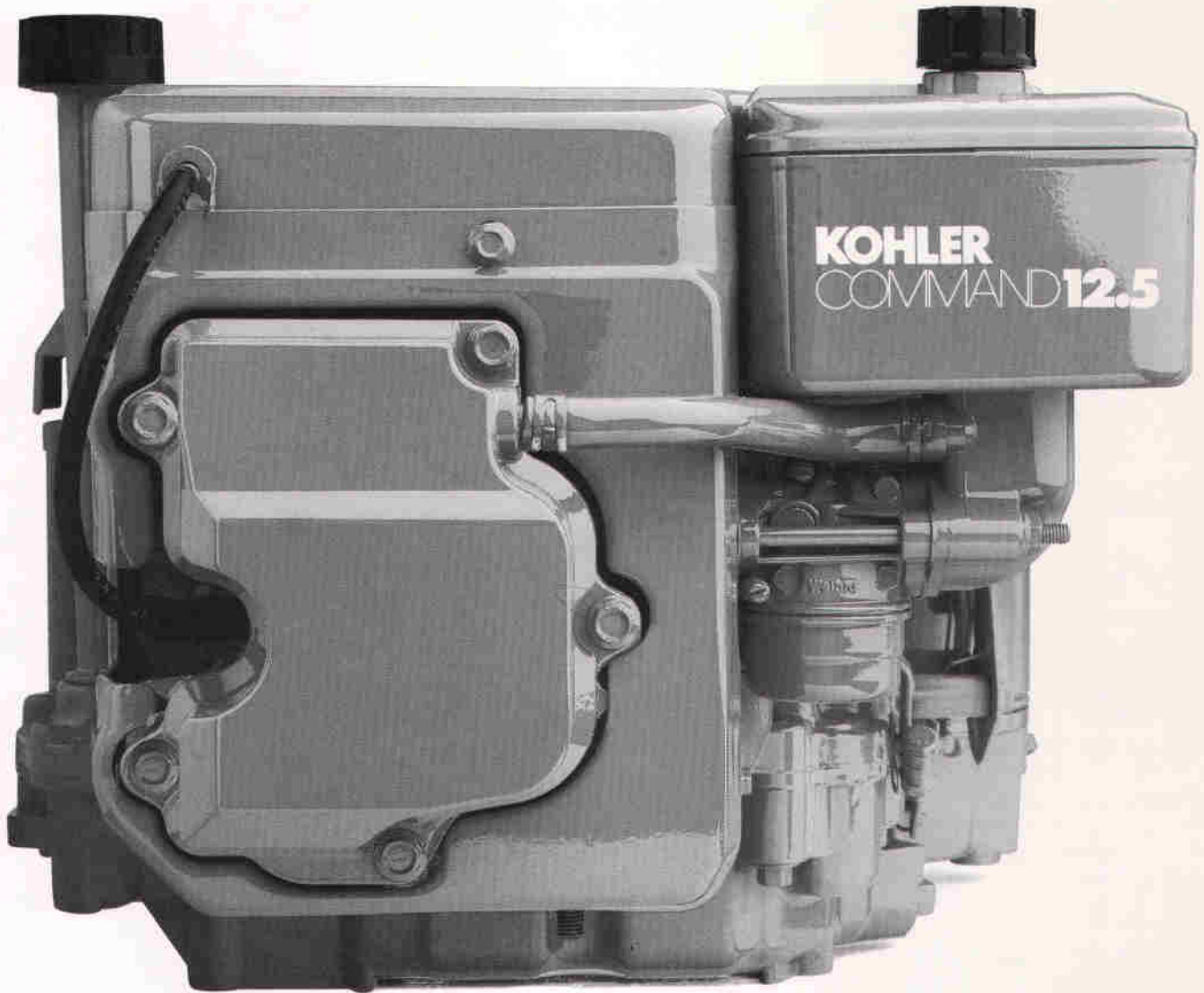
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Insects and the Drought—What is next?

By Phil Pellitteri

Senior Outreach Specialist—Insect Diagnostic Lab
University of Wisconsin—Madison

I always get in trouble when I make predictions on what insects are going to do down the road. The press often makes me chase wooly bear caterpillars around during the fall to make my best guess as to what the winter will bring. It works out well if you make some outlandish claim. (I am predicting a mild winter). If you're correct people seem to remember, if you're wrong they often forget what the funny guy who chases bugs for the University said. Even when we have some understanding into how insect populations fluctuate, all you have to do is to have lived in Wisconsin the last two summers and you can throw your textbooks out the window.

What about the potential for bugs in turf for 1989? For some insects we need to look back on how they did during 1988's drought. You may remember very heavy **June beetle** numbers around the club house security lights during May and June or maybe even had oak trees defoliated by adult feeding. Every three years we see very heavy flights of adults and 1988 was a peak flight year. After mating the adult female is attracted to grassy areas and digs a small earthen cell under the turf. It takes two to three weeks for the eggs to swell and hatch and during that first year the larvae do little observable damage. It is during their second year of life that the most extensive turf damage is seen. If 1988 was the peak adult flight that means 1989 should be a bad year for **white grub** damage. Here I go with my predictions—I do not think so. The drought can have a serious affect on insects, too. The dry, hard ground makes it very difficult for the females to dig in the ground. Even if she could get into the concrete, eggs will not develop properly under low moisture situations and the larvae will die. From what I have seen, white grubs had very little egg laying success this year. With the low reproductive success of 1988, we are hoping for a quiet 1989. A few skunks go hungry because of this, but that's the way the grub bounces.

Cutworms were a big problem for many courses. Some superintendents were forced to treat 3 times in 1988 to stop their greens and tees from disappearing. Why? Cutworms like to lay their eggs in lush, dense, grassy areas. In a normal year this could be weedy fields, old pastures and even home lawns. During 1988 the only lush green areas were found on golf courses, so any adult moth in the county would be sure to be attracted to the local course. What will 1989 be like? There is really no way of telling. There are at least 5 species of cutworms that cause problems in Wisconsin turf. Some overwinter as partially grown larvae; some fly up during the spring from as far away as Mexico. This year's weather will have little impact on what will happen next season. Anytime from May-early September they could be out there so you must keep your eyes open. We like to suggest using an "irritation test" to force the caterpillars out into the open. Mixing a ¼ cup of powder or 1 T of liquid detergent or 2-3 T of pyrethrum containing insecticide to a gallon of water and treating 1 sq. yd. of turf will usually force the worms to the surface within 3-5 minutes. Small ½ inch long worms will continue to feed and damage turf for 8-10 days. Large 2-inch long worms are done feeding and it is useless to control them. Although revenge treatments against big worms may make you feel good, they are uncalled for and a waste of time and chemical.

We did not have many complaints about **Black Turfgrass Ataenius (BTA)** for 1988. In the early spring a couple of superintendents called about various small black insects flying around. During late May when the adults of *Ataenius* come out of overwintering sites and you can often see them flying around at dusk or crawling on members' golf balls. The insects that were sent in were either ground beetles or a type of marsh fly and were no problem. The superintendents involved saved themselves a needless insecticide application by keeping their

eyes open and making sure what they were dealing with. A heavy snow cover and a mild winter will favor better survival for BTA for next year, but that alone will not assure problems. The courses that have had problems in the past will be the most likely to have problems again. Look for activity about the time the *Spirea* is in bloom.

The outlook for the trees around the state for 1989 is not so bright. **Bark beetles** and other **wood borers** do best when trees are under stress. The severe drought conditions have given these insects an open door that may take a few years to close. After a drought the populations will remain high and often overpower even healthy trees. The problems already have started this season with a large number of infested and dead trees coming into the diagnostic lab. If you look at dead and dying red pines, you will often notice small BB sized holes in the trunk. The **Ips bark beetle** that is responsible will go through 3 generations per year. Once a tree shows these emergence holes, it is too late to save that tree. The insects will remain dormant during the winter, but will warm up next spring and be active by early May. It is not just red pines that are showing the problems. White cedar (*arborvitae*), white pine, flowering crabs, white birch, oaks, and maples all have their group of wood borers and are showing death and dieback problems already this fall. After the 1976 drought it took three years for the beetle populations to come down. I am sorry to say this, but I predict a lot of tree death in the next two years that we will blame on the combination of drought and wood borers.

What is the best management for bark beetles or wood borers? First cut and destroy dead trees and those that will soon die. If left standing these dead trees serve as breeding sites that we call brood wood. Remember, that even unstressed trees have problems defending themselves when populations are high. Sanitation before May 15

(Continued on page 19)

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should be the first step. For large trees that show small amounts of dieback, only the wood exhibiting symptoms may need to be removed. If cut wood cannot be hauled off, the use of heavy plastic tarps sealed around the wood pile will prevent beetle escape, and the added effect of warming and drying the wood will make the wood a poor breeding site.

The second step is to "baby" the trees. Maintain the strength and vigor of the tree by proper watering and by fertilization. As I write this article, we have not had enough fall rains to recharge the subsoil. If this continues, we will have our trees start next spring under continued stress. Strong, healthy trees attract fewer beetles and healthy trees do have ways of fighting the bark beetles and wood borers off. When possible, eliminate or minimize other stress factors such as compaction, construction injury, etc. as much as possible until things settle down. Newly transplanted trees will also be at high risk next year.

Are insecticides needed? Both chlorpyrifos (Dursban) and bendiocarb (Turcam) have labels for a number of borers and types of trees. Check the label as rates and timing differ con-

siderably depending on the insect involved. It must be remembered that the adults and larvae that are under the bark will usually not be killed by the insecticide treatment. What you set up is a protective barrier that will help prevent further attack. This means, that tree may continue to decline even after treatment. In most cases only the lower portion of the trunk and large branches need to be sprayed. For some trees, the insecticide mixture can even be painted on the bark. Most applications should be made by May 20 and for some insects follow-up treatments in June or July may be needed.

Some of the early season leaf feeding defoliators may give us a problem next May. We have been having a spotty **cankerworm** outbreak in Sauk, Columbia, Walworth, and Jefferson counties. **Forest Tent Caterpillar** which attacks a wide range of broad leafed trees including oaks, poplar, maples and basswood caused some minor problems from Wausau to Madison. There are some beneficial insects that will eventually knock these caterpillars out, but I am expecting they will not help yet in 1989 and I am afraid of increase spring defoliation. Watch for activity just after bud break through

early June. Normally, we do not get too excited because the damage is largely cosmetic, but drought stressed trees that get chewed on will be that much more susceptible to borer attack.

All of the bedding plant pests such as **spider mites, leafhoppers, aphids, thrips** and **whiteflies** will start out next spring with a clean slate. Spider mite and thrip populations thrived under the California type weather we had, but unless we have a repeat, we would not expect problems next year. Aphids did well in the spring of '88, but the combination of heavy predation by Lady beetles and the stress of the weather kept them in low numbers for the rest of the season. Much like the cutworms you will have to keep your eyes open.

I know that there is not such a thing as a normal year, and I have learned a long time ago that insects do not read the same books I do, but it would be nice to see a season that goes according to the "books." I have made my predictions and best guess-taments for 1989. Time will only tell if I am a hero, or have to find some other insect than the fuzzy wooly bear to get my inside information from.



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SLINGS AND ARROWS

By Dennis Thorp

Before I plunge into this month's topic, I want to clarify a point that, I'm afraid, has been implied but not made crystal clear in past articles: primarily, there is very little relationship between cost and value in the microcomputer field. What you **don't** know will "cost" you or your employer. The best values in software can often be found among the "shareware" listings, and excellent hardware comes from manufacturers that are not generally well known.

There is an old saying, "You can tell the pioneers by the arrows in their backs." I've been debating, as I search for a direction for this column, whether to emphasize "state of the art" technology, or to try to take beginning users step by step through buying decisions and initial setup on to doing useful work. In my conversations with WGCSA members since I started writing this column, I have come to the realization that even the people who already have computers do not have the foggiest idea of what I am writing about. One told me that he read the articles and found them "interesting," but he didn't understand them. So it appears that instead of inspiring entry-level users to push forward or for nonusers to rush out and purchase a computer, I have simply been muddying the waters for those people.

In a conversation with Dale Gadd, a staff member at GCSAA headquarters, trying to come up with ideas for this column, he suggested that I expand on CONFIG.SYS and ANSI.SYS. Questions on these two essential files appear quite frequently on the electronic bulletin board that he runs. I plan on doing something like that in a future column, but the Catch-22 aspect of that is a user has to be far enough advanced on the learning curve to be able to use a modem and the necessary software to tie into Dale's BBS to be able to ask the question. Then he has to be able to write a batch file to implement the answer or to experiment to get the best configuration for his particular hardware. Another item we discussed was where an

entry level user could turn for help. I mentioned taking classes offered by the local computer store or technical school. One method I forgot to mention is the "mentor" or "coach" system. That is a system I learned in the military officer corps, whereby a young officer picks someone senior to pattern himself after and learn from. Both people benefit and the junior person gets farther by being pulled along than he can by pushing forward on his own. Business and government use the same system. Lee Iacocca and Alexander Haig are examples of this system at work. Another method I failed to mention was to join a user's group. This would be the simplest way to gain access to a large number of extremely knowledgeable people. IBM has a service that catalogs PC users groups by ZIP code or telephone area code. Just call 404-988-2782, tap in the proper code, and the computerized voice-messaging system provides all the details you'll need. Users groups exist solely to share information and lend a helping hand to PC voyagers. Consumer-oriented services include not only on-the-spot assistance but monthly newsletters, telephone technical support, training, and education.

Where's the microcomputer field heading? IBM recently released DOS 4.0. Without getting into specifics, the most important features are the cracking of the 32 MB barrier for hard disk partitions and cracking the 640K RAM barrier without having to provide an outside extended or expanded memory system driver. It is becoming apparent that OS/2 will not displace DOS any time soon. That is guaranteed by the enormous installed base of 8088- and 8086-based systems (including IBM's PS/2 Models 25 and 30) that will never be able to run OS/2 in any form. Existing 286-based systems just don't have the horsepower to be effective OS/2 platforms. Efficient OS/2 operation requires -386 chips, plenty of 32-bit RAM, memory caching, and super-fast hard disks. Shipments of 8088- and 8086-based machines are

dropping rapidly, and -286 machines will far outnumber -386 machines until well into the 1990's. However, the latest -386/25 machines are so fast they leave skid marks on the paper.

IBM's strategy of late had been to distance itself from DOS and the 8088. These were the twin "golden geese" up until IBM announced the PS/2 with Micro Channel Architecture (MCA) and OS/2. MCA offers no significant performance or functional advantages over Industry Standard Architecture (ISA) for running OS/2 or anything else. IBM PS/2 products are being steeply discounted in the marketplace at the present time as acceptance remains stalled. Compaq on the other hand is charging a premium and still gaining market share. This turn of events means the virtual collapse of IBM's attempts to use OS/2 as a weapon against its competitors. It's also a blow to the PS/2 hardware line's clear proprietary direction. IBM's efforts to seize the initiative from its hardware competitors are doomed to failure, as IBM's trumpeting of its PS/2 line fell on deaf ears. Has IBM lost touch with its customers? The significance of all this for my readers: Beware the car sales lingo! OS/2 is for those needing true multitasking capabilities and not just the ability to run an occasional background program, local area networks (LAN) in other words. The single user can be satisfied well into the next century with DOS and an 8088- or 8086-based machine. The installed base is so large that attempts by IBM or anyone else to move in another direction are bound to meet with extreme resistance. The shift from 5.25 to 3.5 inch floppy disks has not been an unqualified success, either. Instead of having one 'standard' disk size, we now have four. How can you have four "standards?"

Another hardware development that fascinates me is the rate at which the speed of modem transmission over ordinary telephone lines is increasing. It wasn't long ago that my brother-in-law had trouble getting a clear