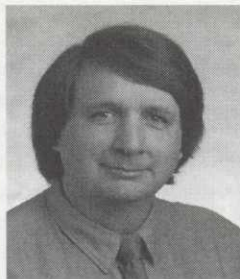


## Making the most of our opportunities

by Christopher Sann

The other day, in one of the few quiet moments that I have, I was reading one of the many magazines that clog my mailbox. I came across a story about porcupines. More specifically, the story was about porcupine quills and an antibiotic present on the outside of these quills.



### Why don't porcupines suffer from wounds of their own quills?

The quills of the porcupine are such an effective defense that they can even be a problem to their owners. Yet, the porcupines do not seem to be bothered by self-inflicted wounds.

The author had been wondering about how porcupines managed to deal with this inevitable problem when he got a lesson in wound management. While he was handling a porcupine, he got one of the quills deeply embedded in the flesh on the back of his hand. The quill was so deep and the tip so well barbed that he had two choices — have it removed surgically, with all its associated complications, or wait several days to see if the quill tip would work itself out.

Faced with two unpleasant choices, he chose to wait and see. While he was waiting for the tip to work its way out of the back of his hand (which it did do), he watched the wound for any sign of infection. Had this been a large splinter of wood or a thorn, the wound would certainly have become infected. To his surprise, there was no infection.

His curiosity was piqued. He examined other porcupine quills for the antibiotic that must have been present. His diligence was rewarded when he found that the quills were coated with a very potent antibiotic in the alkaloid class of toxins.

He took his discovery to a pharmaceuticals manufacturer, fully expecting the company to be interested in his discovery. He was not prepared for the response.

### Not interested

The pharmaceuticals manufacturer told him that the company was not interested in his discovery. His discovery was not rejected because the company knew about antibiotics on porcupine quills, or because it was worried that alkaloids as a class of chemicals had proven to be too problematic to spend time and money on, or even that the

company's research and development budget was stretched to the limits and it would be years before they could even begin to look at this substance as a potential new antibiotic.

The reason the company gave was that the compound was "not complex enough". Read that statement to mean "not patentable".

It did not matter that the author's discovery might have been the beginning of a new class of antibiotics that could help mankind. The pharmaceuticals manufacturer summarily decided that the tail would wag the dog and that maintaining market share was more important than making a new discovery.

The pharmaceuticals manufacturers are not the only group in this country who have mistakenly allowed sales departments to override important advances. Unfortunately, this narrow-minded, short-sighted policy is rampant in this country.

### Build a better mouse trap?

The person who coined the phrase "build a better mouse trap and the world will beat a path to your door" wasn't living in this country in the late twentieth century. Corporate America's recent history is replete with the failures of chief executives to understand the foolishness of this policy.

Most recently, the failure of giant IBM to understand this policy has led to the downfall of one of the largest and most employee-friendly corporate structures in history. IBM failed to understand how the personal computer would revolutionize the world that it had dominated for thirty years.

Unfortunately, this same narrow-minded, short-sighted policy of not being open to new ideas also afflicts many within the turf management industry. From the hired-gun turfgrass specialist, who just follows the money from project to project wasting valuable research dollars recreating work that has been done before, to the chemical manufacturer, who looks at the coming reduced pesticide initiative or the development and use of biocontrols as a betrayal rather than an opportunity, and the major turf products producer, who invites a well known turfgrass scientist to his research center only to reject his advice when it doesn't meet their vision of the future, all suffer from the same fatal disease.

### Innovate or die

As IBM found out, those corporations in the turfgrass management industry that practice hubris as a *modus operandi* and fail to develop a long-term perspective with

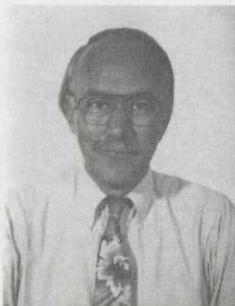
-continued on page 15

The dog days of August

## Seeing grubs and Pythium in a new light

by Juergen Haber

As the dog days of August come upon us we have to worry about a totally different animal: the grub. But now there are more weapons in the arsenal with the completion of an historic first phase study led by Dr. Michael Villani, associate professor, soil insect ecology, New York State Agricultural Experiment Station, Cornell University.



This second large contribution by Dr. Villani to Turf Grass Trends, (Effective management of Japanese beetles, July 1992), is the first large-scale survey of grub populations in lawns. To understand the scope of the survey one must be told that the researchers took more than 3,000, four-inch round samples.

Field Editor Christopher Sann follows up Dr. Villani's story by telling us how grubs might be less of a problem by increased use of integrated pest management.

Finally, we follow up Sann's story with news brief that bring more bad news for traditional turf managers: pesticides may be curtailed even more.

And speaking of follow-ups, Science Advisor Dr. Eric B. Nelson finishes last month's discussion of Pythium in this issue. The question of whether Pythium is a fungus bears directly on the way turf managers should treat diseases resulting from Pythium infections.

Finally, we have a correction to make: on page 5, lower right, of the July issue, we ran the wrong photograph. It should have been the following:



Photo provided by Dr. Eric B. Nelson, Cornell University  
Symptoms of Pythium snow rot on a golf course fairway.

### *Pythium* continued from page 11

closely related genera of plant pathogens, require certain wavelengths of light for their spores to germinate optimally.

How does the naming change affect *Pythium* diseases of turfgrasses?

Conventional wisdom and recent experiences with other misidentified pathogens like *Magnaporthae* (Summer Patch) would say that all the *Pythium* species are not really all that different from other fungi or that the *Pythium* species are really just another as yet to be identified "new" branch of the fungal world, waiting to be discovered.

In fact, *Pythium* species are different from the other fungal pathogens. They are as different from these fungal pathogens as fungal pathogens are different from insects. This means that *Pythium* species should be placed into a separate pest category when considering overall control strategies. The control of *Pythium* diseases requires measures unique to this new category, with little or no overlapping strategies with the control of fungal diseases of turf. Interestingly, some of the fungicides that are used for algae control, in particular mancozeb, are also effective *Pythium* fungicides. Perhaps we can learn something about the control of *Pythium* diseases by learning something about the biology and management of algae, and vice versa.

How did *Pythium* evolve?

It is intriguing to note that a number of algal species are parasitic on plants, although none have yet been described on turfgrasses. The most interesting thing about these parasitic algae is that they infect plants by means of zoospores and prolonged culture of these organisms in the laboratory causes them to lose their chlorophyll pigments. Upon losing their pigment, they take on a fungal appearance which very closely resembles that of *Pythium*. Perhaps through evolution or environmentally, *Pythium* was an alga that became a fungus. Or was it a fungus that became an alga? Stay tuned. ■

### *Making the most* continued from page 10

long-term plans will fall by the wayside in the coming 10 to 20 years.

Turfgrass product manufacturers must spend the time and effort to make promising alternative products, strategies, and information available. Turfgrass product suppliers who cling to old product lines and distribution channels, and fail to offer their clients an expanding list of these new "tools", both goods and services, will fade.

As the regulatory pressures grow on turfgrass managers, those manufacturers and suppliers that understand the future and provide answers to future turfgrass management questions will thrive. Those that fail to meet those needs will not survive. ■