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**JUNE 2001**

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  - [ ] Other Golf Courses (please specify)
- [ ] Golf Course Architect
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- [ ] Director of Golf
- [ ] Green Chairman
- [ ] Club President
- [ ] Builder/Developer
- [ ] Architect/Engineer
- [ ] Research Professional
- [ ] Other Titled Personnel (please specify)

What is your facility's annual maintenance budget?

- [ ] More than $2 Million
- [ ] $1,000,001-$2 Million
- [ ] $750,001-$1 Million
- [ ] Less than $150,000

If you work for a golf course, how many holes are on your course?

- [ ] 9
- [ ] 18
- [ ] 27
- [ ] 36+

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- **B** 18
- **C** 27
- **D** 36+
- **E** Other (please specify)

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**What is your facility's annual maintenance budget?**

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<tbody>
<tr>
<td>A More than $2 Million</td>
<td>27%</td>
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<td>B $1,000,001-$2 Million</td>
<td>28%</td>
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<td>C $750,001-$1 Million</td>
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<td>D $500,001-$750,000</td>
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Christopher Columbus set sail in 1492, in part, to prove wrong those who said the world was flat. His discovery of the New World should have accomplished that goal. But even today, members of the Flat-Earth Society facetiously dispute Columbus’ (and subsequent scientific) findings. They belong to a group of people that prefer flat objects to round ones.

In 2001, another intrepid explorer has entered the round vs. flat debate — but this time it concerns the changing world of turfgrass photography. Jim Moore’s work with flatbed scanners will bridge the gap between those who revel in flatness and those who live in a 3-D world.

Moore, director of construction and education at the USGA, uses his flatbed scanner to capture 3-D images for diagnostic purposes. He says scanners work well as a dissecting microscope, a tool he craved as a superintendent.

“Unfortunately, dissecting microscopes cost between $700 and $800,” Moore says. “Somehow, I could never convince my green chairman it was a good investment.”

His curiosity about scanners evolved from his long-standing fascination with photography. Moore describes himself as an avid photographer who has collected between 2,000 and 3,000 pictures in the course of his multiple careers as a father, a superintendent and a USGA staff member. He sheepishly admits that he has more photographs than he could ever adequately store.

“I kept telling myself I would go back and eliminate the more outdated photos,” Moore says. “But it’s such a time-consuming job that I’ve never gotten around to it.”

So when Moore discovered flatbed scanners, he was thrilled. He could finally combine his passion for photography with his passion for computers — and clean out his closet of some old boxes of photos. Moore’s research revealed that a $150 scanner would meet his needs. He scanned his flat photographs as quickly as possible.

But Moore still wasn’t completely satisfied. Flat photographs, no matter how sophisticated, could never allow a 3-D view that would help Moore understand what was really going on in turf. There had to be a way, with the technology at his disposal, to give his photos depth.

Moore experienced an epiphany as he flipped one of the many PC magazines he reads each month. An article on scanning 3-D objects caught his eye, and it struck him that the same techniques could apply to turf.

“The article showed pictures of objects that most people wouldn’t consider scanning because they’re not flat,” Moore says. “But the detail in the pictures intrigued me. I was sure there would be an application in my work with golf courses.”

Moore’s first 3-D scan involved (what else?) a golf ball. He was amazed by the depth of field and the clarity he achieved. Then he scanned turf leaves and turf plugs with dazzling results.

“I was finally able to do what I had always wanted to do,” Moore says. “I could go below the surface to see problems with sufficient magnification. I could finally see subterranean problems graphically in a way that I couldn’t before.”

Moore urges superintendents to use their scanners as inexpensive dissecting microscopes. They can scan turf leaves or insects (“Insects are great,” Moore says) on a simple flatbed scanner. New scanning software allows users to adjust the resolution for clarity, and it will help them

Continued on page 54
Continued from page 53
understand more clearly what’s going on below the surface.

But that’s not all. Superintendents can e-mail scanned images to extension specialists. With the additional magnification available in the scans, it creates a depth that allows specialists to diagnose problems far more accurately. Besides, images don’t depend on the U.S. Postal Service to deliver a fragile turf sample in one piece.

Using 3-D images also helps superintendents communicate more effectively with their members. Pictures always tell the story more effectively than words, no matter how eloquently the superintendent speaks.

Scan only the parts of the turf you need to see in high detail.

“It’s one thing to describe the effects of foot traffic on your greens to members in the newsletter,” Moore says. “It’s another thing to include an image which clearly shows compaction problems underneath the green. You can’t put a price on the effect that stark visuals will have on your membership.”

The amount of image manipulation depends on what the superintendent wants to use it for. Moore recommends superintendents save images at a minimum resolution of 300 dots per inch. (For comparison, Golfdom only uses electronic images with that minimum resolution.) The higher the dots per inch, the higher the resolution. But don’t go overboard: Higher resolution images take up more space on your computer. If you have too many large images saved, you can actually inhibit the effectiveness of your computer.

Once superintendents experiment with the potential uses of scanners, they will discover applications they hadn’t even considered, Moore says.

“You don’t need a $1,000 machine to do this,” Moore says. “It’s an inexpensive way to increase your effectiveness.”

With his use of flatbed scanners, Moore has written a new chapter in the age-old flat vs. round debate. The creative use of flatbed scanners can help both sides live in harmony.

Frank H. Andorka Jr., associate editor of Golfdom, can be reached at 440-891-2708 or fandorka@advunstar.com.
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Protecting the “Water” in Water Features

Part of the commitment you make when installing a water feature is maintenance. In many respects, the smaller a water feature, the more maintenance it requires. In today’s environmentally sensitive atmosphere, you can forget about relying on chemicals and an occasional cleaning to do the job for you.

Filtration and aeration are important, particularly with smaller features. You want a minimum depth of 2 feet with constant circulation and filtration. Waterfalls or circulation pumps should force water through a properly sized sand-media filter, which should include two-thirds sand and one-third activated charcoal. The filter will remove organic contaminants and keep the water clean. Waterfalls can increase oxygen as well. If you don’t have a waterfall, install an aerator to work with the circulation system.

A gravel bottom in your water feature can act as a bio-filter, an alternative to a man-made filter. The gravel filters the water as it circulates. Beneficial bacteria establish in the gravel and keep the water clean and fresh by degrading contaminants. If you decide to use a gravel filter, cover at least two-thirds of the bottom with gravel over perforated drain lines that return the water to the pump. Use river rock or granite and avoid limestone, which can have an adverse effect on the water’s pH.

Water pH can be a problem, especially for some of the beneficial bacteria. Microbes prefer a slightly acidic 6.5 pH. (Water with a pH of 7 is considered neutral.) Water may also suffer from a salinity problem, particularly in areas where effluent water is used. Test the water source before treatment to make sure you’re moving its composition in the right direction. Alkaline water can be adjusted with small quantities of acid, while salinity can be adjusted with gypsum because the calcium replaces the sodium in the water.

Dyes provide alternative

Dyes improve the appearance of shallow water features and slow establishment of aquatic weeds. They don’t hurt surface plants such as water lilies.

Do not paint the bottom of water features a dark color that will absorb heat. You must keep water cool and avoid rough concrete surfaces in favor of smooth surfaces for the fish.

If you stock your water with fish, provide access for observers to watch the fish. Visible enjoyment should be balanced with audible input, so include waterfalls and fountains.

Like larger features, the safest bet is a natural balance among fish, beneficial microbes and nutrients. In the case of small water features, this weighs heavily on filtration and aeration. But an occasional clarifier or dye might spruce up your water feature. Depth and shade for at least part of the pond is helpful.

Water features provide enjoyment for golfers and environmentalists alike, and they are now available to a greater number of courses. Keeping them in proper working order will assure your success with them.

Test Before Treatment

Few superintendents test water before they treat a pond’s algae problem, but water tests provide several advantages, including:

- establishing a baseline against which to measure improvement and demonstrate progress;
- indicating the severity of the nutrient loading;
- providing an accurate tool to determine appropriate use rates and other recommendations, which will provide faster results;
- identifying potential situations where biological controls won’t work well; and
- adding a tool for aiding in building accurate budgets.

Using herbicides or algaecides to solve a problem is a Band-Aid approach because they often don’t attack the core problem. If you test your water first, you can determine whether biological aids can solve your problem.

For example, with an algae problem, there is a high level of nutrients in the sludge zone or the water column. Although algaecides can kill the algae, the algae release more nutrients as they decay, causing the problem to start again.

Biological aids offer a long-term solution, which brings ponds to a more natural state. The best approach to pond rehabilitation integrates biological products and algaecides.

Remember, the problem didn’t happen overnight. The solution won’t happen overnight either.

Editor’s note: The author of this article, Marlena Cannon, represents Northbrook, Ill.-based Precision Laboratories, a manufacturer of pond management products.

Editor’s note: The author of this article, Patrick Simmsgeiger, owns Diversified Waterscapes of Laguna Niguel, Calif.
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Leaders

BASF announced the members of its new turf, ornamental and pest control group: William L. Baxter, business manager; William P. Strickland, marketing manager; Rich Kalik, national account manager; Derek W. Miller, marketing communications manager; Kyle J. Miller, market development specialist; and Charles Austin, senior sales specialist.

Thomas Eschette was named superintendent of The Bridges Golf Resort at Casino Magic Bay St. Louis.

Yazoo/Kees Power Equipment named Bob Morgan as sales manager.

The Company Line

The TPC of Boston named Tom Brodeur as superintendent.

Flowtronex PSI appointed Allen Olson as national sales manager.

Dan Marco was named superintendent at Ruth Lake CC in Chicago.

Sandy Clark, superintendent at Barona Creek GC in Lakeside, Calif., recently completed the GCSAA Environmental Management Certificate Program. He is the seventh superintendent to be certified.

Let us know about your people on the move. Send information/color photos to Golfdom’s Frank Andorka at 7500 Old Oak Blvd., Cleveland, 44130. Fax information to 440-891-2675 or e-mail to fandorka@advanstar.com.

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SOMETHING COMPLETELY DIFFERENT

The 1900 Olympics in Paris were an object failure, replete with poor venues, insfighting and dreadful press coverage. Despite its problems, though, there was one bright Olympic moment in 1900.

The first — and only — Olympic competition in croquet ran on Sundays between June 24 through Aug. 15 at Cercle du Bois de Boulogne. While only one spectator attended, and only about a dozen players took up mallets, the competition was tough in the four categories of play. Winners received a croquet set, a medal and presentation mallets.

Defenders of the game said in the Official Report of the Second Olympic Games: "One would be wrong ... to disdain croquet. It develops a combinative mind — one has only to see it transform young girls into reasoners, and from reasoners into reasonable people."

We've come a long way since the Official Report showed such condescension to women, but the point is well taken — one should not disdain the pastoral pastime of croquet.

The game began in the Middle Ages and became popular among the wealthy in France in the 17th and 18th centuries. A particular version of the game, Paille Maillé, migrated to England.

During the Victorian age it was played at Wimbledon — at least until tennis became the game of the strawberries-and-cream set.

The leisure-class activity, though, received a distinctively lower-brow flavor when it came to America, where it has flourished as a picnic or family-reunion game suitable for any age.

I remember playing against my brother with a beat-up set at my great-grandparents house as a child, whacking away at the part-dirt, part-grass course we laid out next to my great-grandpa's prized tomato garden.

Decent beginning croquet sets run about $60 and $180, while professional-quality sets cost up to $800. As with most things, the more you spend the longer the set will last.

Croquet takes no athletic skill, but it can tap into your shrewder side. If you hit another player's ball, you can launch it far from the hoop with one strong-armed swing of your mallet. But there is always the chance that a player will do the same to you.

You don't need a huge, manicured lawn (or the 14th fairway) to play. Officially, the croquet court should be 84 feet wide and 105 feet long, but you can adjust as your space dictates. The undulations and thick grasses of most yards will present an extra challenge. The game is fun and challenging and occasionally frustrating.

But the best thing, by far, about backyard versions of the game is that you can enjoy a cocktail while you await turn. I suggest gin and tonic.

Ladies and gentlemen, grab your mallets.

Mark Luce is a free-lance writer who swings a mean mallet in Lawrence, Kan.