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GB

Contents

May/1981

Volume 55/Number 5

Feature Articles

Using moisture sensors to control irrigation

An interview with Dr. Bruce Augustine, Extension turf and water specialist with the University of Florida, shows how these devices can benefit turf and budget 10

Turfgrass insect identification quiz

Dr. Harry Niemczyk at OARDC in Wooster, OH graciously provided these photos. See how many you can identify before looking at the answers on page 21 16

Modifying greens—Topdressing and rebuilding

Louis Miller, Superintendent at the Louisville Country Club, tells how sand has helped his greens and how he has rebuilt many of them 18

Sharing ideas to cope with less water

Editor Pat Lucas of Tee to Green, the Metropolitan GCSA publication, has shared the response he received when he asked his readers 'how do you cope?' 24

Departments

Clippings4	Change of address23
Idea file4	Classified30
News8	Advertiser index30
Publisher's point8	Sales offices30

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FRONT COVER: Our feature this month is moisture sensors. A new, impedance-type, electronic probe and hook up is shown.



Clippings

Brief bits of news from in and around the golf business. . .

A record **31,559 holes-in-one** were registered in 1980 with *Golf Digest's* Hole-In-One Clearing House. The odds for scoring an ace during an 18-hole round of golf on a regulation course are 10,738 to 1 for the average golfer. **Norman Manley** of Long Beach, California, holds the individual record with 47. His first came in 1963 and he has had 15 in the last eight years.

The golf course architectural office of **Ronald Fream** has recently completed the master plan for a new nine-hole course which will be constructed for the Royal Nepal Golf Club in Kathmandu, Nepal. It will be the first course in Nepal with proper putting greens, rather than "sand browns". The Ronald Fream Partnership has also completed the design concept and is presently preparing construction working drawings for an 18-hole, championship caliber Pantai Mentire Golf Club on the island of Borneo.

Thomas W. Moore has been named as an associate in the firm of **William Zmistowski Associates**, Golf Clubhouse Architects, of Boulder, Colorado. Moore is a graduate of Ball State University and served as project architect for the new clubhouse and maintenance building facilities at Singletree Golf Club in Vail, Colorado.



Jerald Lierman of the Omaha CC recently was named Superintendent of the Year for 1980 by the Nebraska GCSA.

Arnold Bruns has joined the staff of the Pinehurst CC as head golf course superintendent. Bruns moves to Pinehurst from Fair Oaks CC in San Antonio, Texas, where he was superintendent for three years. He was also superintendent at Pharoahs CC in Corpus Christi for three years and Great Hills CC in Austin for two years. Bruns has been a member of the Texas Turf Grass Association for the past 20 years and was one of the founders of the Central Texas Golf Course Superintendents Association. He has also been a member of GCSAA for 20 years. He will direct maintenance for Pinehurst's six courses, a total of 108 holes.

H.G. Nordmann, Jacobsen Vice President, Controller, will be acting General Manager for the **Jacobsen Division** of Textron Inc., following the resignation of **Thomas Bruns**, President. Bruns left to assume a position in another company, according to **Egil G. Ruud**, Group Vice President, Textron.

David Volkmann, formerly customer service specialist in manufacturing at **Mallinckrodt, Inc.'s** St. Louis plant, has been promoted to customer service coordinator for the specialty chemicals division. Volkmann joined Mallinckrodt in June, 1972.

Terry Brady was recently appointed field service manager for the Western Turf Sales Division of the **Rain Bird Sprinkler Mfg. Corporation**, according to Turf Marketing Manager **Rex Dixon**. Brady will be responsible for all field activities relating to Rain Bird Western sales.

Denver Brass & Copper Co., Denver, Colorado, and a French firm, **Cogefrance**, Paris, have been named co-winners of the Distributor of the Year award from the **Weather-matic Division** of Telsco Industries. The winners were announced during the recent sales meeting at Rancho de los Caballeros in Wickenburg, Arizona.

Howard Rotavator Company in Harvard, Illinois, has appointed **Chris Burden** to the Position of Director of Marketing Services, and **Clyde Morter** to Marketing Manager.

The Heckendorn Corporation, Cedar Point, Kansas, is a new distributor for **Sensation's** full line of lawn maintenance equipment for the states of Kansas and Oklahoma.

William Fletcher has been appointed engineering manager for Telsco Industries. He will direct Telsco's new products research and development program, as well as supervise engineering activities to improve current product lines.

Ms. Kelli R. Sneed, a junior at Texas Tech University in Lubbock and a major in Landscape Architecture, has been awarded a \$500 scholarship grant given by **Weather-matic Division of Telsco Industries**.



The Idea File

Irwin Hearsh, Manager
Rancho California golf resort
Pemecula, CA

Better irrigation

Rancho California was built around its irrigation and drainage system. The course was built for maintenance and golfers who shoot between 85 and 100, although it has a USGA rating of 72.2. Valcon, new all-fiberglass, controllers are used for the irrigation system. (Featured next month in New Products.) The system is programmed to run for six minute cycles, four times a day. This method of watering has realized a 20 percent water savings for the course, with no runoff and good infiltration. Hearsh reports that *Poa annua* is receding, due to the rootzone watering technique and that the Pennfine on the course is getting thicker with deeper roots. **GB**

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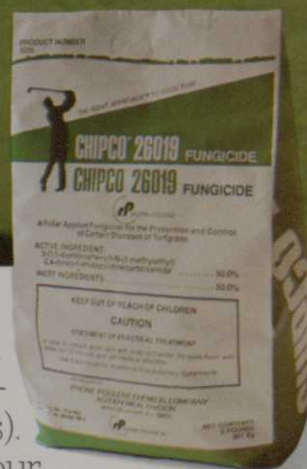
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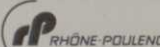


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PUBLIC COURSES**Top fifty U.S. public courses named by Golf Digest**

Golf Digest's first ranking of America's 50 Greatest Public Courses was announced in the magazine's March issue. The top ten are: Brown Deer Park GC in Milwaukee; Cog Hill GC in Lemont, Illinois; Edgewood Tahoe GC in Stateline, Nevada; Indiana Canyon GC in Spokane, Washington; Otter Creek GC in Columbus, Indiana; Plumas Lake G&CC in Marysville, California; Tanglewood GC in Celmmons, North Carolina; Torrey Pines GC (South) in La Jolla, California; Wailua GC in Kauai, Hawaii; and West Palm Beach CC in West Palm Beach, Florida.

Twenty-nine states have courses on the list. The states with the most courses represented are California with six and Florida with four. A complete listing can be found on page 67 of the March issue.

The authoritative rankings are determined by the sectional executive directors and secretaries of the PGA of America, the executive directors of 51 state and regional amateur golf associations and members of the USGA's two public links committees.

PRIVATE CLUBS**Congressmen to speak at NCA Legislative meeting**

The Hon. John M. Ashbrook, (R-OH) ranking minority member of the House Committee on Education and Labor, will speak during an afternoon session of the National Club Association's (NCA) Legislative Conference and Annual Meeting on May 19 in Washington, D.C. The session is devoted to a study of the recently signed Labor Department regulation banning federal contractors from paying employees' dues and expenses in organizations with selective membership policies. John Tysee, Director of Labor Law for the U.S. Chamber of Commerce will also be participating.

Representatives from the Labor Department are expected to be present for the discussion of that regulation, which was frozen by President Reagan until March 30.



On a recent flight from Cleveland to Atlanta, I had the occasion to ask a question of my golf playing seatmate, "Who's your golf course superintendent?" He thought for a moment and then replied with the same answer I had received from 21 previous golf playing seat-mates, "I don't know."

Twenty-two responses to the same question over a period of three years does not make a survey; but it can be food for thought when thinking about your image and visibility as a golf course superintendent. As the 1981 golf season gets into full swing, let's think about ways to use more public relations in our golf course maintenance operations. With some planning and time, each superintendent can enhance his own image and better educate the golfers to the important role of the golf course superintendent.

There are several suggestions which can help develop a better image, and build a better more informed golfing public, at your course or club. Have you ever considered having an open house in the maintenance building? Before you pass by this suggestion, give it some consideration. There are more people interested in knowing what kinds of equipment and products you use than you might think. How many club members or regular course players do you know that have an understanding of what you do and what it takes to maintain the course? Giving them the opportunity to find out at an open house can begin the process of educating them to a

maintenance point of view. Is your maintenance area too messy and dirty to seriously consider an open house? Maybe this is the excuse you've been looking for to clean it up!

A few superintendents schedule spring orientation sessions for regular members or players; particularly after the completion of a major project or renovation. The golfers are given a walking or driving tour of the course with explanations as to what has been done with their money to improve the course . . . and hopefully their game. Such orientation sessions can improve your visibility among the golfers and enhance the chances of getting a realistic maintenance budget approved next year. Don't get discouraged if few people take you up on your orientation tours the first time. Like anything new, it takes time for a new idea or approach to catch on.

The club or course newsletter is a valuable resource in increasing your visibility and image. It is also one of the best tools you have for educating the golfer who plays your course. Don't be afraid of writing, even though you don't consider yourself to be an author. Your purpose in writing is not to win a Pulitzer prize, but to regularly inform people of your golf course maintenance activities and why you are doing them. If you can't think of anything specific to say in a particular issue, write something positive about the important role the golf course plays in our

(Continues on page 23)

NCA is working to have the regulation overturned entirely.

Speaker of the House Thomas P. "Tip" O'Neill, Jr. (D-MA) and House Ways and Means Committee Chairman Dan Rostenkowski (D-IL) are expected to join the Opening Breakfast and receive Certificates of Appreciation from NCA as a gesture of thanks for their support of the

private club industry. The morning session will be a legal and legislative update of all major issues facing the club industry today. A discussion of IRS issues such as unrelated business income and auditing will complete the afternoon. For more information, phone NCA at 202/466-8424.

(Continues on page 22)

"Brown! 6 is brown all over!"

"The 10th green is covered with worms!"

"18 is a mess!"

"The ants are ruining 13!"

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Dr. Bruce Augustine explains tensiometers, resistance- and electronic-type water monitoring systems.

Using soil water monitoring sensors to control irrigation

By Ron Morris

The most basic description of the water cycle of a turfgrass environment would list input, storage and output. Input is in the form of precipitation or irrigation. Output occurs as evaporation, transpiration, drainage and runoff. Judicious water management would dictate that, to make the most of input, output be limited to that which the turfgrass plant uses for survival.

Once water enters the soil profile, however, visual assurances of conservation are no longer possible. How do you know when you have wet just the rootzone with an amount of water that makes it available to the plant? Obviously more that that is wasteful. If you've got water and money to burn, you might care less, except for the fact that the wetter a soil is, the more prone it is to compaction. In fact, a graph would show that a soil is most prone to compaction when it is at field capacity, that point just before excess collects and begins to drain. There would be an abrupt rise in the curve between moist and field capacity.

What determines moist versus field capacity? The tension with which the water is held by the soil particles does. Storage of water available for plant uptake occurs between the wilting point, a tension where water is bound too tightly to soil particles for the plant to use, and field capacity. This is a most

rudimentary explanation, however, if you understand soil moisture holding characteristics, according to Dr. Bruce Augustine, Extension Turf and Water Specialist with the University of Florida, then you will be able to water with some effectiveness.

Why moisture sensing equipment? "What the moisture controlling equipment attempts to do", explains Dr. Augustine, "is alleviate the golf superintendent from having to understand a lot of soil physics situations. The equipment will activate the irrigation system when the soil gets dry enough and will prevent it from coming on when the soil is adequately moist." The following is a description of moisture controlling equipment by Dr. Augustine and his comments about them to Golf Business.

"The standard in the industry is the tensiometer. Basically, it is a ceramic cup connected to a vacuum gauge. This gauge monitors the soil suction and gives a good reading of what the availability or lack of water may be. As the soil dries, it creates more soil suction. A micro-switch can be hooked to a solenoid and the system will go on and off at predetermined points on the gauge. The micro-switches are generally hooked to the 24-volt system of the irrigation system.

"The tensiometer, as a standard to



This micro-switching tensiometer is made by Irrrometer Company of Riverside, California. All photos courtesy of Dr. Augustine.

the industry, has been the most successful in monitoring soil moisture levels. There are, however, three drawbacks to overcome. Tensiometers do not work well in coarse sand. The pore size of the ceramic cup must be closely mated to that of the soil. If there is a big difference, the tensiometer will not work as well.

"To illustrate, in Florida we have to run our tensiometer at a setting of about 10 centibars in our coarse sandy soils to prevent major wilting. In California, where tensiometers have been used extensively, they are typically set at 40 centibars and above.

"Another problem is servicing. Tensiometers need to be checked periodically to make sure that there are no air bubbles in the vacuum gauge or pump. This is not a major problem, however, unless you have many of them in a given area.

"When you get into a putting green situation, where the root system may be only two inches deep, you begin to run into problems because the tensiometer itself is almost an inch in diameter. If it is installed too close to the soil surface, there are problems with accuracy.

"The biggest use would be a fairway setting. The important thing to remember during installation, is to get them in the root zone. Irrrometer Company, one manufacturer, recom-