



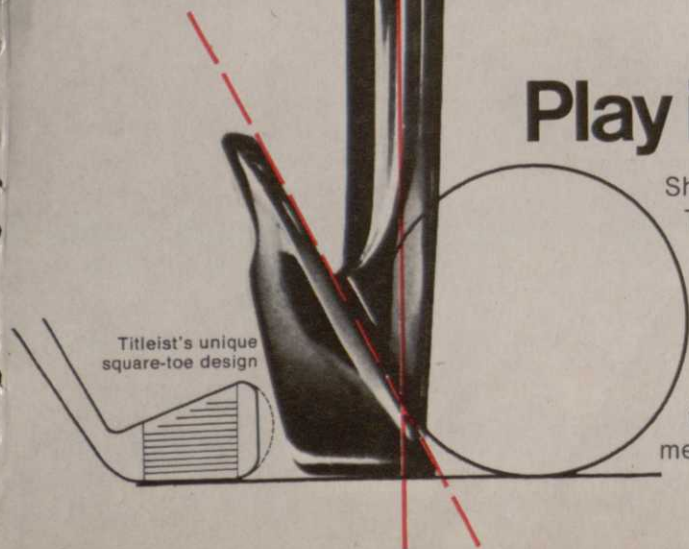
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GRAFFIS

(Continued from page 10)

chological affect. Experiments using colorants were further extended at the Augusta National when the ponds were dyed.

When exhibitions and tournaments were televised in color, further use was made of the Pine Valley painting idea. And a couple of years ago came colored sand for bunkers. The most colorful scenic tour of golf courses I have ever seen was the slide showing with comments on Philadelphia area golf courses at a Golf Course Superintendents Assn. of America convention. If the GCSAA could produce a series in several districts for showing at golf clubs or as a TV travel feature with comments by noted superintendents, it would have a tremendous public relations impact. But maybe there's no one around who could conduct tours like Steiniger.

Gifts of scholarships by tournament professionals are proving to be about the best public relations that could be imagined. **Bert Yancey** carried the idea into Argentina and gave his Argentina Masters \$2,500 first prize to the Argentina PGA for scholarships. **Arnold Palmer** presents a four-year scholarship at Wake Forest as a memorial to his college roommate, Bud Worsham, killed in an automobile crash.

The scholarship gifts also have favorable tax angles. There has been talk about prize winners of the Tournament Players Division contributing to the tax-exempt PGA National Golf Day fund, about 25 per cent of which goes to caddie scholarships, a considerable grant to veterans hospital work and other welfare and educational operations in golf. Home pros hope to raise \$200,000 with the 1970 National Golf Day campaign, according to **Dugan Aycock**, Lexington (N.C.) CC professional and chairman National Golf Day committee. It's the biggest public service project conducted by professional athletes. There has been an embarrassing failure of the celebrated playing

pros to get into National Golf Day action due to the lack of "communications."

Dallas Golf Assn. named its scholarship foundation in honor of the late **Graham Ross**, professional at Dallas AC GC for many years, a pro for 36 years, an official of Texas and national PGA and coach of Southern Methodist University golf teams. His 1954 team won the National Collegiate Athletic Assn. championship and all members of that team went on to graduate schools. He was one of the finest gentlemen sportsmen the Lord ever made.

Maryland Golf Assn. is sponsoring two new scholarships at the University of Maryland, Department of Agronomy, granting \$500 each to students studying turf-grass.

John J. Lawlor, 19, formerly a caddie at Beverly CC (Chicago District) and **John Sloans**, formerly a caddie at Evanston (Ill.) CC are Evans scholars selected as first year's winners of the Charles Bartlett Memorial Award. A tournament conducted annually by Northern Illinois Men's GA and the Chicagoland GA finances the tribute to Bartlett, golf editor of the Chicago Tribune for 37 years and secretary of the Golf Writers Assn. from its formation until his death two years ago.

All the talk and print about high interest rates, gigantic labor and material costs, inflation, slowing construction of golf courses is accompanied by a record surge of huge golf course-real estate projects. High rise condominiums with golf courses as beautiful front yards are fast-selling deals now, but the usual Grade A type of home sites bordering courses are also going very well.

Boca Raton West now with 36 holes plans 36 more as new apartments are built in the Florida community west of the historic club once owned by Clarence Geist, with Tommy Armour as pro, and now a hotel-private home-golf course community. **Sugar Creek**

(Continued on page 16)



Photographed at The Homestead, Hot Springs, Virginia.

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GRAFFIS

(Continued from page 14)

CC, a 1,000 acre development near Houston, will have courses by Robert Trent Jones. There are to be three 18s on a Florida resort development called **Innisbrook**. It's near Tarpon Springs. Meanwhile, large condominium apartments, which are nearing completion, will be surrounded by the **PGA National** GC courses at Palm Beach Gardens.

Florida is popping with new courses around the Palm Beach area. **Billy Mitchell** is building two for Perini Land and Development to the west, on Lake Mangonia. Two of the most interesting designs I've seen lately are one, Turtle Creek, by **Joe Lee** in the lake-spotted land north of Toquesta and one by **George Fazio** in a beautiful dunes area. Lee is doing another 18 (Shannon CC) for Grand Bahama Development Company at Freeport, Grand Bahama Island.

Joe Mozel, who started the National Senior Open and made it a popular event on the Las Vegas calendar, has retired as managing director of the tournament. Mozel has been a pro for 52 years and looks a brisk middle-age. He started as a caddy at Tacoma GC when Jim Barnes and Neil Christian were there. For 21 years he was at Lloyd's GC, a range in Portland, Ore., which Joe made into the establishment that set the modern pattern in ranges.

Mozel's operation of the Lloyd range, short course and clubhouse was so profitable the revenue paid taxes and a profit until Portland's need for a new highway forced sale of the property at a gigantic price. So Mozel accounts for one top multi-millionaire made by golf.

More than average annual turnover rate in pro jobs plus the opening of many new private and resort courses kept professional salesmen busier than usual revising their lists and up-dating orders this spring. At most of the larger resorts and at many private clubs the head of the professional depart-

ment now is called golf director. **Ray Raynor** moves to Cypress Creek CC, Boynton Beach, Fla., as golf director from near-by Pine Tree GC, where he was pro almost since the place opened.

Lot of switches in club manager jobs, too. **Plato Neocleous** now general manager Evanston (Ill.) CC from similar post at Birchwood CC, Westport, Conn. **Dean Matthews** at Bellerive CC, St. Louis, from manager job at Meridian Hills CC, Indianapolis. **Paul Kaub** succeeds him. **William vanLierop** left Shaker Heights, Ohio, CC to become general manager Baltimore CC.

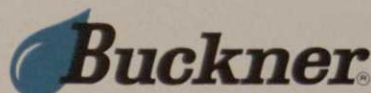
National Airlines \$200,000 tournament established a precedent with its gift to the United States Golf Assn. Green Section. No other tournament, except the USGA's Open has helped finance the technical organization that far more than any factor has accounted for the immense improvement in tournament playing conditions. Green Section chairman **Henry H. Russell** is a resident of Miami where NAL has its headquarters and **L.B. Maytag**, NAL president is a son of the late "Bud" Maytag, noted Iowa amateur years ago, and a delightful member at Augusta National and Broadmoor at Colorado Springs.

In the 19 years it has been in operation the USGA Green Section Visiting Service has made more than 16,000 service calls to USGA member clubs. Experienced superintendents and green committeemen testify the service has been of immense value in course improvement and in time and money-savings. Increased operating expenses of the Visiting Service have cost the USGA \$268,091 during the past five years. So, like every other item in course maintenance expense, the Green Section Visiting Service fees have been increased.

The new fees are: less than 18 holes, \$250; 18 to 27 holes, \$300; 36 holes, \$325; for each regulation course in addition to 36 holes, \$75. At private clubs that amounts to about \$1 a year a member. □

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by Dr. James B. Beard

TURFGRASS RESEARCH REVIEW

Affects of antitranspirants on plant growth

Antitranspirants—uses and affects on plant life.

D.C. Davenport, R.M. Hagan, and P.E. Martin. 1969. California Turfgrass Culture. 19(4):25-27. (from the University of California at Davis, Davis, Calif. 95616).

This paper is a preliminary report of research conducted by the authors concerning the affects of antitranspirants on water conservation and plant growth. The studies were conducted on creeping red fescue (*Festuca rubra*). Phenyl mercuric acetate (PMA) was sprayed on the foliage at concentrations ranging from 10^{-4} M to 10^{-3} M.

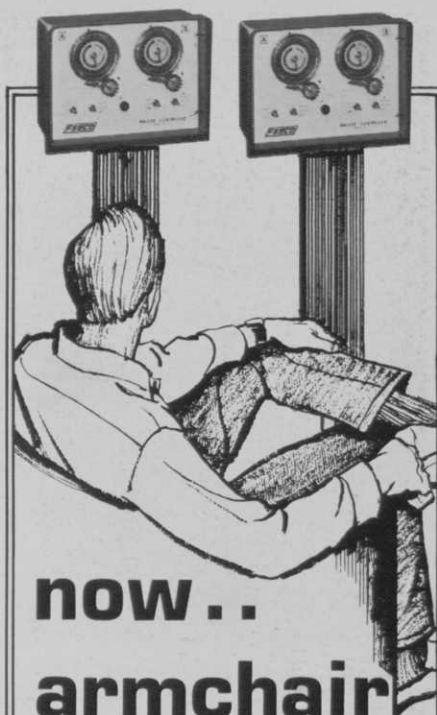
Results showed that the quantity of water transpired was reduced by 18 per cent when a moderate PMA concentration of $10^{-3.5}$ M was used. There was no significant reduction in shoot growth at this concentration. A high PMA concentration of $10^{-3.3}$ M resulted in a 30 per cent reduction in the amount of water lost by transpiration and also caused a 35 per cent reduction in the amount of shoot growth. Toxicity was evident at

the higher rate of application. The authors indicate that tolerance to rates of PMA application will vary with the particular turfgrass species involved. This factor should be recognized and proper adjustments made to avoid potential phytotoxicity. The authors stress that this is a progress report and that further studies are needed on optimum concentrations, application methods and potential detrimental affects to the turfgrass plant.

Comments: An antitranspirant is a compound which is utilized to reduce the transpiration rate of plant foliage. Approximately 80 per cent of the water loss from transpiration occurs through the stomata, which are small pores or openings in the surface of turfgrass leaves. Phenyl mercuric acetate (PMA) is an antitranspirant which stimulates the closing of stomata. Stomata closure caused by PMA has been observed in a wide range of plant species including grasses, as has been reported in the above study. A 15 to 20 per cent reduction in the rate of water loss from creeping red fescue leaves is certainly significant, particularly when the water stress potential is high. Data such as is reported in the above paper suggests that the onset of turfgrass wilting can be delayed or even prevented by an application of PMA at the proper rate and time.

The stomata, through which water is lost by transpiration, are also the main pathways for carbon dioxide diffusion into the leaf where it is used as one of the essential raw materials in the vital photosynthetic process. If the stomatal-closing antitranspirant was completely effective in restricting carbon dioxide movement into the leaves, it could also reduce the photosynthetic process below minimal levels. However, data from this paper indicate that concentrations of PMA can be used which will significantly reduce the rate of transpirational water loss but will not close a sufficient

(Continued on page 22)



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