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The Bull Sheet

Official Bulletin
Midwest Association of Golf Course Superintendents

JUNE MEETING

TUESDAY, JUNE 7, 1966

GLEN EAGLES COUNTRY CLUB

GOLF —

DINNER

EDUCATIONAL PROGRAM

BUSINESS MEETING

THE BULL SHEET, official publication of THE MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

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The President's Message

The golf season has arrived and with the recent good weather the golfers are out in full force. Many of the Midwest members are hearing the same, old, springtime complaint, "Why can't we use the carts on the fairways?"

I'm sure if these avid golf fans would stop to realize what damage can be done to the soft, wet fairways by the carts, they might not complain so loudly.

In general, the Chicago area courses are in fine shape with most Superintendents reporting little or no winter damage. The big problem will be getting the grounds' crews up to full force in order to meet the demands of this lush growing weather. This is the time of year we should really appreciate the modern, efficient machinery we have at our disposal . . . . where would we be without it?

Adolph Bertucci
President

Arnold Bodhaine, Superintendent Palos Country Club

MAY MEETING

Palos Country Club was the place of our May meeting. Ralph Krueger, manager, was again a gracious host to our association with the wonderful buffet dinner. The speaker of the evening, Mr. Joseph Hantman of Lubin and Lubin Associates, brought us up to date on the many benefits of the retirement program. Quite a few were surprised that you could get members of your family and permanent members of your crew enrolled. This is something that more of us should look into as a fringe benefit supplied by the club.

Our thanks to Arnold Bodhaine, host superintendent, who had the course in good condition considering the Spring cold weather and heavy rains.

In their report on the golf outing on this brisky 50 degree day in early May, Braunsky and Burrows checked in 38 golfers. All of whom enioyed themselves from the talk during cocktail hour about a couple extraordinary tricky and beautiful golf holes.

Golf Tournament: Calaway handicap system.

Prizes were won in the following order: Joe Dinelli, Don Gricus, Oscar Miles, Joe Canelli, Norm Kramer, Art Cleason, Gerald Dearie, Bill Saíelli, Sr., Russ Reed, Don Weisenburger, Fred Opperman, C. Mitchell, John Hooper, John Eble, Roy Nelson, J. Meyer, G. Weidner.

The most powerful and accurate golfer of the day was Al Bertucci, winning the longest drive contest on the tenth hole.

At the June Meeting the plan for golf is:

1. Low ball twosome using Calaway handicap system, so get your partner in advance.
2. A par three hole, closest to the pin contest.
3. **Non-golfers:** Putting contest at 4:30 sharp on the practice green.

See you there!

— IN MEMORIUM —

A. WARD CORNWELL

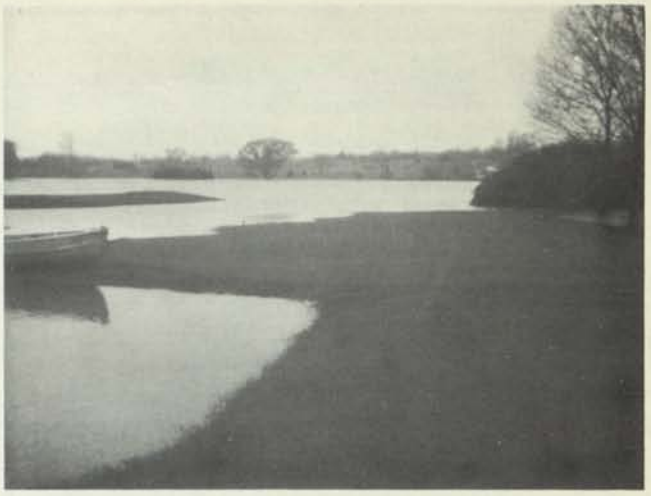
Ward Cornwell, superintendent of the Evanston Golf Club, passed away May 4th after a brief illness, at the age of 59.

Ward had devoted his entire life iin the interests of turf management. Born in Hanover, Michigan, his first contact with golf came as a worker at the Arbor Hills Country Club in Jackson, while attending high school. He later attended the Michigan State University where he majored in Turf Management. As superintendent, he served at Pine Lake, Walnut Hills, Lockmore and the Detroit Golf Club, all in Michigan, and at the Washington Golf and Country Club in Arlington, Va. prior to coming to Evanston in 1962.

During his career as a Golf Course Superintendent, Ward was untiring in his efforts to build a better profession. His leadership elevated him to the presidency of a number of professional groups beginning with the Detroit and Border Cities Golf Course Superintendents Association and the Michigan Turf Foundation at Michigan State University. Beyond the borders of Michigan, Ward also gained prominence as the president of the Midwest Regional Turf Foundation at Purdue University with his ultimate recognition in 1956 when he served as the president of the Golf Course Superintendents Association of America.

Ward was particularly active in bringing education and research into the Turfgrass Management field. He trained 12 young men as student superintendents over the years, all of which hold superintendent's positions today. He is survived by his wife Kay; a brother, Robert, of Detroit; a son, Arthur and a daughter, Mrs. Suzane Potter.

Ward's passing leaves us with the memory of having known one of the finest and most dedicated gentleman of our profession. We will miss him in our ranks.



Picture taken at Woodridge Country Club on May 12 after the Du Page river branch left its banks. What you see is the putting clock with a boat tied up ready for use to go to the maintenance shop. Tony Meyers' course was half covered with water.

FUNGICIDES IN PRE-MEASURED WATER SOLUBLE bags

The W. A. CLEARY CORPORATION is now marketing theiri "Spotrete" and "Thimer" fungicides in Water Soluble Bags. The problem of measuring and the irritations of the nose, eyes, and throat are eliminated. Each bag holds 8 ounces and treats 2000 square feet. Just place the water soluble bag in the spray tank water and agitate. These water soluble bags are unlike previous inefficient bags in that they will go into solution immediately and will not clog the tank screens or nozzles.

TURFGRASS DISEASE CONTROL

Malcolm C. Shurtleff and M. P. Britton

Turfgrass diseases vary in severity from year to year and from one locality to another, depending on the environment (principally moisture, temperature, humidity, and grass nutrition), the relative resistance or susceptibility of the grass host, and the causal organism. For disease to develop, all three factors must be present and in "balance." For example, if the environment if favorable for a disease and the disease-producing organism is present but the host plant is highly resistant, little or no disease will develop. Similarly, if the causal organism is present and the host is susceptible, but the environment is unfavorable, the disease usually does not appear.

We can put this relationship in the form of a simple equation:

Susceptible grass + Disease organism
+ +
Proper environment + Method of distribution
= DISEASE

No disease will develop if **any one** of the above ingredients is lacking. Effective disease control measures are aimed at "breaking" this equation in one of three basic ways: (1) the susceptible plant is made more resistant or immune; (2) the environment is made less favorable for the causal organism and more favorable for the grass plant; and (3) the disease organism is killed or prevented from reaching the plant, penetrating it, and producing diisease.

Let's discuss these three basic methods of control:

1. **The grass plant is made more resistant or immune—** This is the ideal method of control. All grass breeders, and everyone else concerned with turf, are hoping to develop more resistant grasses. Some progress has been made. We now have grass varieties that are somewhat resistant to dollar spot, snow mold, leaf spot, rust, powdery mildew, and other diseases. But this important control measure is still in its infancy. For some diseases like brown patch, where the causal fungus is composed of an infinite number of biotypes or strains, the development of highlv resistant or immune grass varieties is remote and may never come about. Before such grasses can be developed and released sources of resistance in wild or cultivated grass must be found. Then comes the long, time-consuming process of workinq this reristance into otherwise desirable grasses. We will probably never have a lawn or fine turf gratt that is resistant to all common diseases.

   Another way to make the grass more resistant is through proper nutrition. Dollar spot, pink snow mold or Fusarium patch, powdery mildew, brown patch, and other diseases are less serious where a uniform level of soil nutrients is maintained in the root zone. This mav mean making fewer and lighter applications of fertilizer plus keeping the three major nutrients, N, P, and K, in balance. When nitrogen is high in relation to potash and phosphorus, you may be heading for trouble, especially in hot weather!

   Grass cut at the proper height also has more resistance than turf that is scalped. Without sufficient green leaves to manufacture food to produce new leaves, roots, and stolons, the grass is definitely weakened. Grasses in a lawn, park,

fairway, or golf green grow under artificial conditions and are more subject to attack by disease organisms than they would be in their natural environment. Healthy, vigorously growing, adapted turf grasses — that are properly managed — can best ward off disease attacks.

2. **The environment is made less favorable for the causal organism and more favorable for the grass plant.** Fungi that cause turf diseases require much the same sort of environment that turfgrasses require: food, moisture, oxygen, and a favorable temperature. The basic concept here is to grow grass in an environment that will be unfavorable to the growth, multiplication, and spread of disease-producing fungi. This we can do by:

a. **Keeping the grass blades as dry as possible** for as long as possible. Fungi, with the exception of the powdery mildews, require free moisture on the grass plant for 3 to 12 hours or more to infect a plant. Poling, brushing, and hosing are means of removing dew and guttated water in which these organisms thrive. There are reports of superintendents' applying non-toxic, surface-active detergents to grass that prevented dew from clinging to the grass blades. The fungi coudn't penetrate without moisture, and no disease developed. Poor surface and subsoil drainage causes compaction and soil aeration problems. Roots are suffocated from lack of oxygen or are "drowned." The result, too frequently, is disease. "Dead," humid air over a pocketed turf area causes disease problems. There is no wind to dry off the grass blades. If we cauld keep grass dry — and this includes the thatch — we would have no disease problems aboveground. Root rots that cause "wilt" of golf green in July and August are commonly due to overwatering of the root zone to keep the turf soft. Keeping the soil near the saturation point prevents normal root growth and favors the growth of organisms like Pythium, a common water mold. Proper water control is the single, biggest environmental factor in keeping disease in check on golf greens or other frequently watered turf areas.

b. **Eliminating the dead grass (mat or thatch)** in which disease-organisms thrive. Removal helps to "starve out" these fungi and forces them to compete unfavorably with the multitude of bacteria and fungi in the soil, many of which are antagonistic or even parasitic to the disease-producing organisms that attack grass. The thatch also acts like a sponge in holding excess moisture. Elimination of thatch has cut the fungicide budget of many golf clubs in half.

c. **Keeping large trees away from greens** or installing root barriers.

d. **Not injuring the grass** by careless use of pesticides, using a mower out of adjustment, leaving the cup too long in one spot, walking or riding on turf that is soggy, removing half or more of a grass blade at one mowing, etc. Remember that anything you do to grass to weaken it may lower its natural resistance, allowing a disease organism to "take over."

3. **The disease organism is killed or prevented from reaching the plant and producing disease.** We have talked about removing moisture and thus preventing a fungus from penetrating. We could also mention using sand or other sharp particles to improve surface and subsurface drainage and aeration. You can probably think of other ways to prevent distribution of the organism. But the principal means of control here is chemical. We can apply a soil fumigant to the turf area before planting and kill fungi, nemotodes, insects, and weed seeds — all at once, using a single chemical like methyl bromide, chloropicrin, Vorlex, Vapam, or V. P. M. Soil Fumigant. The expense is fairly high, but more and more of this type of control is being used before seediing or sodding greens, tees, stadium turf, and even home lawns. Generally a polyethylene cover is placed over the treated area to retain the fumes of the fumigant. The only problem is that disease and nematode problems may become **more** severe later because of lack of competitive fungi, bacteria, and nematodes in the treated area. Once a disease-producing organism is introduced (blown, washed, or tracked) into a treated area, there is no "biological check and balance."

This discussion brings us to the use of turf fungicides on a preventive schedule — applied **before** the disease strikes. We recommend that you follow the manufacturer's directions on the package label as regards rates to use, interval between applications, compatibility with other chemicals, grasses on which the chemical is to be used, etc.

The method of application is very important. We suggest at least 5 to 10 gallons of spray per 1,000 square feet to adequately wet the grass blades, thatch, and top quarter inch or more of soil. I would use five gallons of spray against such diseases as powdery mildew and rust, which attack only the grass blades. Other diseases, such as dollar spot, brown patch, Pythium, melting-out, and snow molds, attack the crown and root area before growing on and over the grass surface. Here 10 gallons per 1,000 square feet as barely adequate. For diseases like brown patch, where the causal fungus is known to survive in the form of sclerotia buried in the soil, 15 gallons would probably do a better job.

High pressures are **not** necessary! It is much more important that the fungicide be applied evenly. In most cases the best way is to use a multi-nozzle boom and apply the chemical equally in two directions. The time interval between spray applications should vary with temperature, expected disease, grass condition, chemicals used, and amount of rainfall or artificial watering. The spray interval may be as short as two or three days in hot, wet weather or stretch out to two weeks if the weather is cool and dry. Some fungicides give some protection for a week or 10 days even when four to six inches of water has fallen as rain or been applied by sprinkler. Another chemical may last only two or three days under similar conditions. The problem is complex and one that you have to "feel out" for yourself, based on your knowledge of the chemical and its past performance, the problem turf area involved, past fungicide and other records, and knowledge of the factors that cause a particular disease to flare up. It is only through keeping records that you can hope to determine why a certain fungicide failed — or did the job. All the

fungicides in the world cannot replace a poor turf management program.

The equipment you use is also important, especially on a golf course. How fast you can get around and complete a spray application? I Pythium strikes, is this fast enough? These are questions you have to answer for yourself. The important thing is to get uniform coverage of the grass. You may have to put in a commercial spreader-sticker or wetting agent to insure wetting of the grass blades and better penetration of the thatch and soil surface.

Table I gives a summary of turfgrass diseases and the fungicides that have been reported by various research workers as giving some dregree of control. The success (or possible failure) **you** have with these fungicides, however, will depend on how well you have put the pieces of the overall turfgrass disease control picture together.

WANTED: BARTER - EXCHANGE - SELL

This section will be used whenever any one who wishes to dispose of, swap, sell or buy any thing of value.

For Sale: One inch irrigation hose in 50 and 100 foot length at 20¢ a foot. Contact Mr. Wes Updegraff, Supt. Oak Park C.C., Oak Park. Illinois.

For Sale or Trade: Baughman fertilizer spreader with 10 H.P. Wisconsin engine. 1960 Jeep model FG 150 with 7 foot snow plow. The following implements for a Farmall Cub, front end loader — cultivator - corn planter and seeder. Contact Fred Opperman, Supt. Elmhurst Country Club, Wooddale Rd., Elmhurst, Illinois.

For Sale—One Royer Shredder, used very little. Call Al Bertucci, Old Elm Country Club, phone 432-6270, Fort Sheridan, Illinois.

For Sale—One chain hoist, 3-ton capacity; 36 inch Lawn Beauty professional power spreader; Band saw with motor. Contact Paul Voykin, Briarwood Country Club, Deerfield, Ill. WI 5-3350.

For Sale—1962 Lindig Soil Shredder with screener attachment. Model 3-B-9 20 yds. per hour, used about 20 hours. Contact: Denis Straus, Rolling Green Country Club. CL 3-0400.

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Table 1. Summary of turfgrass diseases reported to be controlled by various fungicides.

Fungicide	Diseases							
	Melting-out; leaf spot	Brown patch	Rust	Powdery mildew	Fairy ring, toadstools, mushrooms, puffballs	Dollar spot	Snow mold	Pythium
Acti-dione-thiram3/	yes	yes	yes	yes		yes		
Caddy						yes	yes	
Cadminate						yes		
Cad-trete						yes		
Calo-clor		yes			yes	yes	yes	
Calocure		yes			yes	yes	yes	
Dyrene	yes	yes	yes			yes	yes	
Fore	yes	yes						
Karathane				yes				
Kromad	yes	yes1/	yes	yes		yes	yes2/	
Ortho Lawn and Turf	yes	yes		yes		yes	yes	
Panogen Turf Spray	yes	yes			yes	yes	yes	
Phenyl mercury2/	yes	yes			yes	yes	yes	
Tersan	yes	yes	yes			yes		
Tersan OM	yes	yes	yes		yes	yes	yes	
Thimer	yes	yes	yes		yes	yes	yes	
Dexon								yes

1/ Calo-clor or Calocure (1-1 1/2 ounces per 1,000 square feet) should be added to Kromad to control brown patch and snow mold.

2/ Trade names of phenyl mercury: PMAS, Puratized, Tag, Liquiphene Turfgrass Fungicide, Merbam 10, Puraturf, etc.

3/ Only Acti-dione-thiram is suggested for use on bentgrasses. Acti-dione RZ may cause injury.

A GUIDE TO SUCCESSFUL POOL OPERATION

1. Adhere rigidly to equipment manufacturer's recommendations for inspection and operation maintenance routine (lubrication, etc.) regarding motors, pumps, chemical feeding equipment, etc.
2. Keep a running inventory of disinfectant, filter-aid material and other chemical supplies used every day, to guard against shortages; also, reagents for residual and pH testing.
3. Maintain a small stock of spare parts for feeding units and other equipment (gaskets, etc.) which may be needed to facilitate anticipated normal maintenance or repairs.
4. Clean out the basket of the hair-and-lint catcher unit not less than once each week. (There should be a spare basket available).
5. Check reading on filter pressure gauges (and rate-of-flow meter reading, if available) several times each day. Hourly readings should be made in the case of diatomaceous earth type filter units. Filters, of course, should be backwashed when indicated by readings. Keep air from accumulating in top of filters by operating release valves. Check pump rate occasionally by comparing pump gauge pressures with pump's performance curve.
6. Adhere strictly to the filter manufacturer's instructions on method of backwashing the filters.
7. Make Chlorine (or bromine) residual tests on samples of water directly from the pool several times daily to insure that the proper residual level is always available. Under usual conditions of pool use, this test should be made:
   a. Early in the morning.
   b. A hour before the period of swimming begins.
   c. About 10 minutes after a large group has been admitted into the pool water.
   d. During periods of heavy pool usage (several times).
   e. Before the operator leaves for the night.

   In reference to 7b above, the residual should be built up to a high value (about 1.0 ppm, free) in anticipation of the effect of a heavy bathing load in consuming the disinfectant.
8. Make pH tests of pool water at least twice daily.
9. Operate recirculation and filtration system continuously, 24 hours per day.
10. Clean the pool bottom of visible sediment 2 or 3 times weekly. If only a weighted brush is available, use it daily.
11. Introduce make-up water each morning sufficiently to overflow the pool for 10 to 15 minutes, to skim away surface debris.
12. Maintain pool overflow gutters, pool decks, bathhouse floors and fixtures (urinals, toilets, lavatories) should be cleaned and disinfected 2 to 3 times daily, depending on the bathing load.
13. Once a week remove "grease line" from pool walls at water level.
14. Enforce personal regulations.