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President's Message

How do Wisconsin golf courses compare to the rest of the courses in the United States?

I have been on a lot of Wisconsin golf courses in the past ten years and I am always pleased with the conditions.

The courses are well groomed for the maximum enjoyment of the players. Many superintendents use flowers and shrubs to enhance the beauty and to soothe the frayed nerves of the golfers.

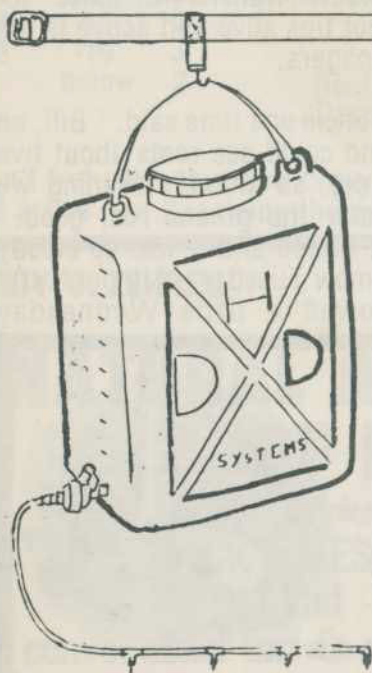
Every superintendent I have talked to is always looking for ways to improve their course. Some have great imaginations. It does

not hurt to look around and pick up ideas that may be applied to your course.

In the past few weeks Tuckaway Country Club and North Hills Country Club had tournaments. It was a pleasure to hear on the radio and television and read in the papers that these courses were in excellent condition. Ray Knap, Tuckaway, and Bob Musbach, North Hills, are to be commended for a job well done.

I would say Wisconsin Golf Courses have to take a back seat to no one.

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ST. LOUIS CONFERENCE AND SHOW PLANS WELL UNDER WAY

Stouffers has been designated as the Headquarters Hotel for the 1980 Conference and Show to be held in St. Louis, February 17-22, 1980.

The local host chapter is the Mississippi Valley GCSA. Robert V. Mitchell, Jr. is the president of the Mississippi Valley GCSA and the Host Committee Chairman is Lee Redman. With the help of the host chapter, we are bound to have the biggest and best Conference and Show ever.

The Education Department is lining up the speakers for the Conference and Show and it looks as though there is going to be a wide range of topics covered. Topics that will be of interest to everyone.

The theme this year is "Conservation: Our Key to the Future".

A St. Louis Conference and Show Information flyer will be mailed to all GCSAA members in August. The Conference Packet is scheduled to be mailed to all members in early October.

Last Word Before Adjournment

Executive Definitions:

Orientation: Move around until we find something for you to do.

Consolidating our position in the market: We didn't make any money on it.

Unparalleled demand: Six orders in the mail.

Note and initial: Let's spread the responsibility for this.

For your consideration: You hold the bag for awhile.

We're making a survey: We need more time to think up an answer.

Through the ranks: Worked one summer in the shipping department.

For your approval: Passing the buck.

For your comment: I haven't the faintest idea myself.

Promising young executive: Son of a fraternity brother.

Coordinator: An executive with a desk between two expeditors.

Implement a program: Hire more people and paint the office.

Middle management: An executive with his own pen and pencil set, but no water pitcher.

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Some Ideas about Roots

Dr. W.H. Daniel, Purdue University
July 1979

Introduction:

1. What is a root?
2. Where are the roots?
3. Roots are plant membranes
4. What is water-air balance for roots?
5. Roots are strong
6. How would you insult roots?
7. What could you do to favor roots?

Conclusion

Roots - Turfwise

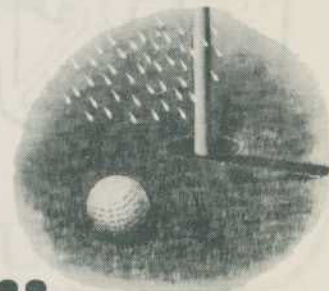
Our historical roots, as a family and individuals, have recently received special attention. However, the roots of concern in turf are those little white stringly things that supposedly are below the grass you see on the surface.

First, what is a root? Roots are initiated at the nodes occurring along stems. These may be concentrated in a crown or spread along a stolon. Portions of mature roots are mainly conductive tissue plus providing some storage of nutrients, especially starches.

The working part of any root is the soft absorptive root tip and the root hairs near it. This is where the payload of water and elements are absorbed for transfer to the crown, stems, and leaves known as the turf cover. And, woe is the plant which had **lost** its root tips! So, a living root is that plant tissue joined to the node and extending to and including a root cap. Although some branching is normal, when individual root tips dies, the older root parts seldom initiate new root tips. Physiologically the plant's response is to initiate a new root at the node and just start again (provided extra energy is available and time is allowed). In other words, the energy path is to start a new root, which has least transfer distance for nutrients. So, keeping root tips alive and active is the first challenge of turf managers.

Bud Esterline at Muncie one time said, "Bill, on Monday I cut the cups and could see roots about five inches deep. It was so dry, so Monday evening we made a big effort to water the greens real good. Tuesday morning early it rained and it was so cloudy and wet that we couldn't mow Tuesday. Although still raining, we finally mowed a little Wednesday

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afternoon, and the rain just set in there. Brown patch began to show. We finally got our greens mowed on Friday, and on Saturday the weather cleared up and all I had for roots were a few black strings! I lost my complete root system between Monday night and Saturday morning." Now what? Bud knew he had to lightly water those greens, to watch for wet wilt, to keep the leaves moist enough so they wouldn't wilt until new roots would generate. If he could get by for

about seven days he'd have some new roots growing, and later some good roots working again, and back to normal. Five days of wet weather cost Bud his root system, and then it took him ten days to get partial replacement.

Where are the roots? Would you believe 90 percent of root length is in the upper two inches or 5 cm. In West Germany my friend, Dr. Boecker, reported extensive testing.

Roots		
inches	cm	%
0-2	0-5	90
4	-10	5
6	-15	3
	below	2

Boecker found 81 to 91% for fescue
86 to 94% for bluegrass
85 to 93% for bentgrass
Root distribution in June and December were near equal.

Don't fret over this distribution; just realize that it is the active root tips doing the work.

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Ideally, a diffuse extensive root system is desired, but for every use, management, rootzone and irrigation, what is normal, adequate and necessary will vary. As turf managers, you want all the roots possible or practical.

Roots have been found over 100 inches long under Bermuda in California tests. However, roots of three feet for fescue and zoysia, 2 feet for bluegrass and bentgrass would be considered quite long. When trenches are made across roughs or tall grass areas the long root extension in the soil profile is usually impressive.

Roots are plant membranes. "Here, you root; do this! Absorb (take in) 5000 pounds of water plus one pound of elements the plants must have. By the way, **keep out the excessive and avoid the unneeded.** Meanwhile, let's hope nematodes make no holes, and rhizoctonia doesn't infect. And, while you're constantly expanding, we'll try to keep the leaves healthy, the mower sharp, the wear distributed, the drouth averted, and we'll try to avoid scalping or other turf stress." After all, the top must send energy clear down to the root tip. When energy is short the number

of root hairs diminishes, the diameter reduces and the root initiation slows.

Roots are powerful absorbers. Before the plant wilts roots will take water from soils down to 13.6 atmospheres, a pF of 4.5 or tension equivalent to 14 meters of water. The wise turf manager has every reason to utilize the reservoir of moisture within a rootzone between irrigations. In other words, it is foolish to ignore the rootzone moisture storage potential when managing fine turf.

What is water-air balance for roots? Incidentally that root tip must have some oxygen as it works. Waterlogged soils are hard on roots. Being waterlogged for more than 24 hours under stress weather is a cause for concern. Most turf managers have seen roots growing over the surface of the ground in an attempt to be where there is air. Roots may be deep or shallow just in response to air supply. We've seen roots grown in water when air is added, but remember, oxygen travels through water 1000 times faster than through wet compacted soils.

Roots are strong! When roots are numerous their combined strength is in athletic fields, tees and traffic areas. New roots in new soils always look good. A measure of success is to have sufficient roots to hold the soil mass for their entire depth of penetration when held by the surface sod.

Research on rooting of sods has been conducted to determine resistance to an upward pull after one month of growth.

How would you insult roots?

1. Reduce the air at root tips.
2. Increase the water to excess
3. Compact the soil; use equipment and carts
4. Smear, seal the surface.
5. Raise the temperature
6. Overcrowd the plants
7. Lose leaves to diseases; lose energy
8. Reduce leaf surface
9. Shade by trees, buildings, other plants
10. Overfertilize and stress plants

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What would you do to favor roots?

1. Increase oxygen in rootzone
2. Avoid any overwatering or continued wetness
3. Vertically core, spike, slit open rootzone surface
4. Topdress to raise cutting height
5. Topdress to minimize surface compaction and effect of thatch.
6. Increase leaf surface
7. Avoid or spread wear
8. Avoid disease or turf weakening
9. Lower the temperature - cooling when possible
10. Reduce shade or competition
1. Fertilize - low to medium nitrogen.
12. Provide ample potassium and minor elements

Turf managers and their crews can't make a root!
You can help; let the plants make them. You can kill
the root or slow it down.

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Tee Marker Placement

There are standards for the distance between tee markers. The wear pattern of the golfers usually dictates the placement of tee markers at any one particular hole. There is a relationship between markers and frequency of changing tee markers to the wear of the grass.



If the tee is long and narrow and markers are placed at full width, the wear pattern is usually in the middle of the tee. On narrow tees when half the available width is used, two wear areas result. Most golfers prefer the middle portion of the tee closest to the hole and don't use all the rectangle allowed by the rules of golf.

The United States Golf Association's Official Rules of Golf define the teeing ground as "the starting place for the hole to be played. It is a rectangular area two club lengths in depth, the front and the sides of which are defined by the outside limits of two tee markers. A ball is outside the teeing ground when all of it lies outside the stipulated area."

Tee markers should be moved daily and in a pattern. If space allows, the movement pattern should not bring the markers back to any one location within 10 to 14 days. On small, par three tees, the width and length of tee marker movement formation might have to be adjusted. Some additional turf culture may be needed such as additional water, fertilizer, aeration, seeding, topdressing, pest control, removing shade conditions, less frequent mowing or changing the height of cut.

In addition to the placement of tee markers, there are other maintenance procedures to encourage golfers to use the entire teeing area and therefore eliminate much of the wear pattern problems.

Keeping tree roots out of the teeing area will conserve water and nutrients for the turfgrass and help it recuperate more quickly from the effects of heavy traffic.

Also keeping tree limbs trimmed away from the teeing area and even keeping some limbs that overhang the fairway trimmed back will encourage golfers to use the entire teeing area ...

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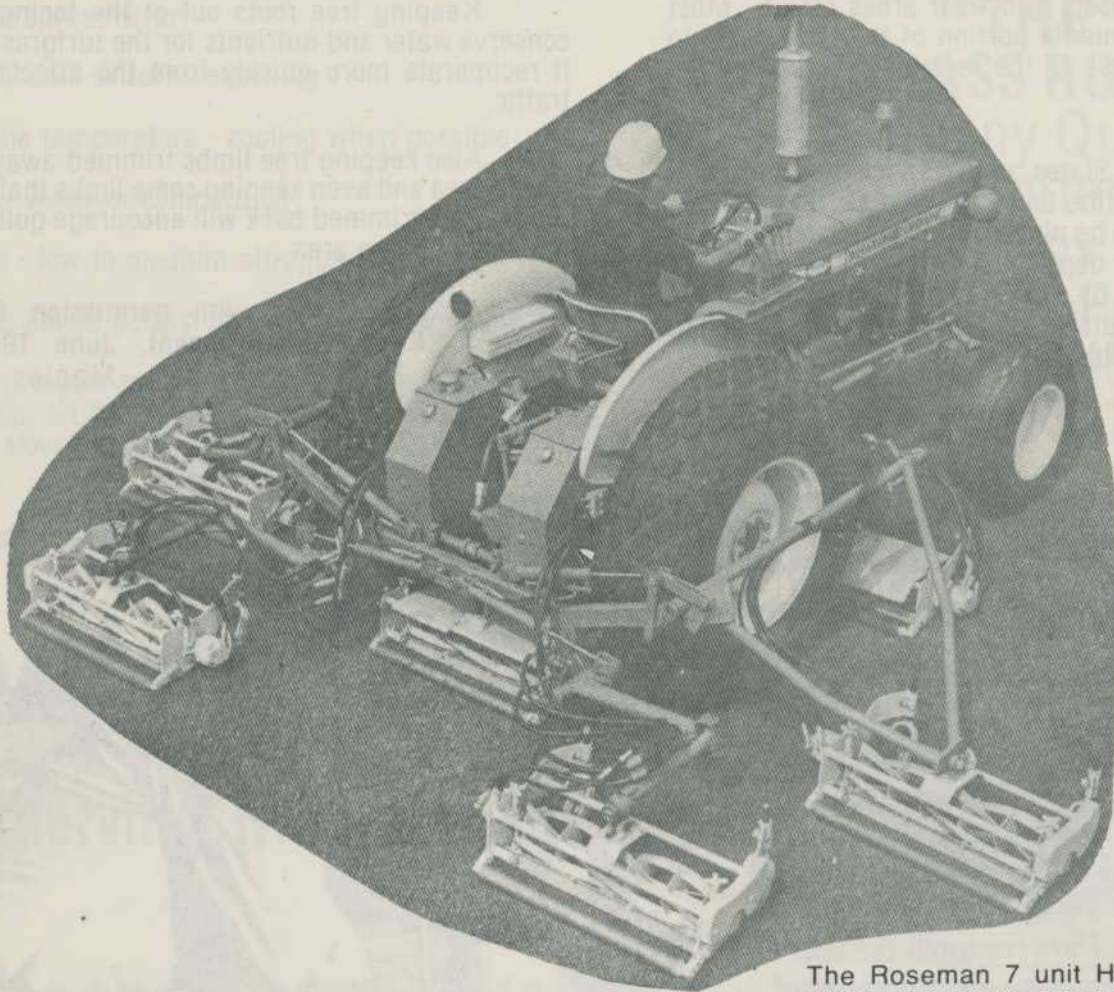


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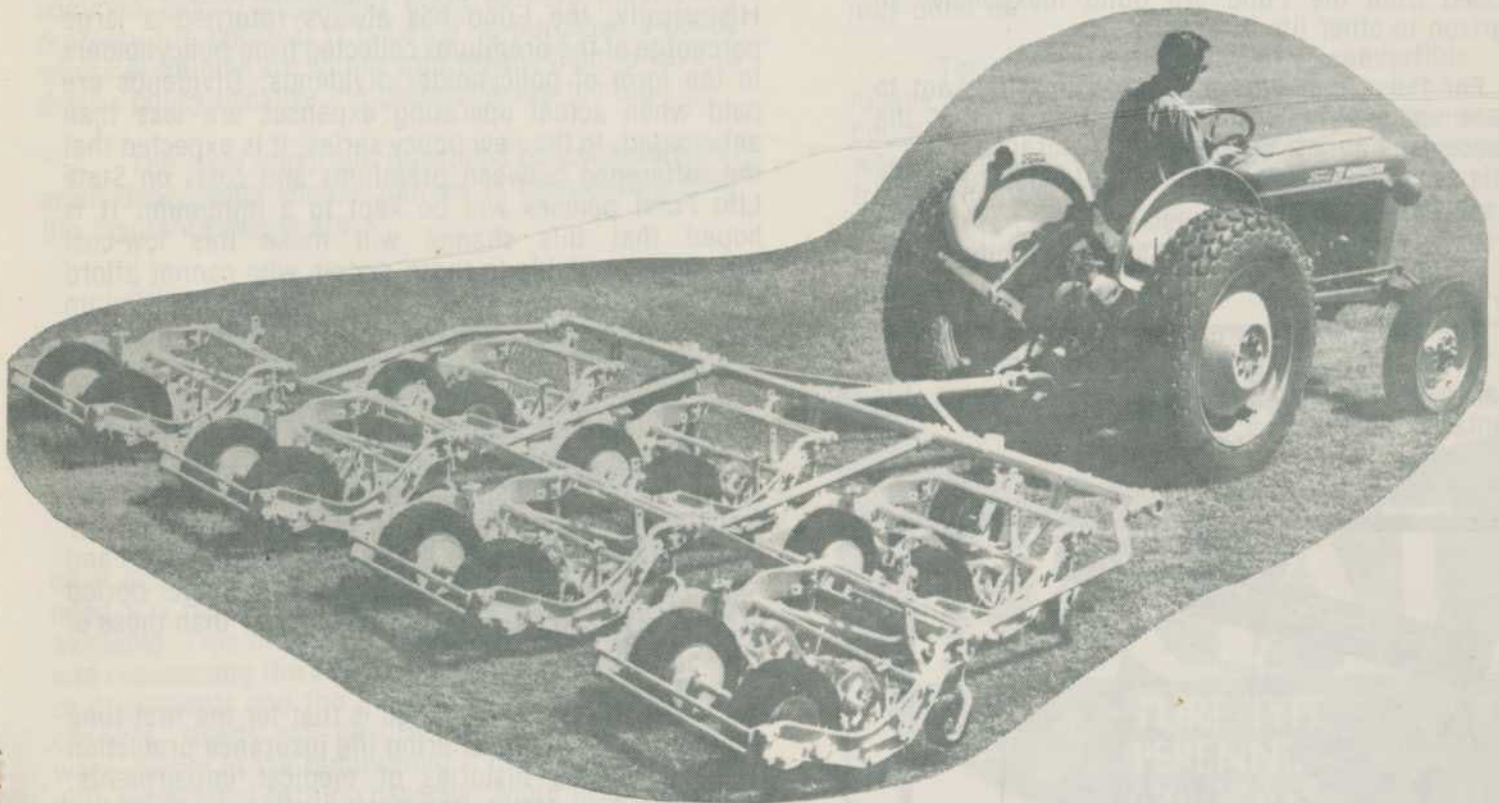
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For the Good of the Association

The state Life Insurance Fund is a state sponsored life insurance program - the only one of its kind in the country. The fund offers low-cost life insurance protection to the residents of the State of Wisconsin.

The State Life Insurance Fund operates on a non-profit basis and receives no subsidies from the State. It is not permitted to use commissioned agents to sell its policies, does not advertise and is exempt from Federal income tax. As a result, overhead expenses are minimal. This means that policies purchased from the Fund are quite inexpensive in comparison to other life insurance.

For those residents of Wisconsin who want to purchase up to \$10,000 of life insurance without the assistance of an agent, the State Life Insurance Fund -- which is available **only** to the people of Wisconsin -- is the first place to look.

History of the Fund

The State Life Insurance Fund was established in 1911. Its creation was a response to a nation-wide scandal over the improper practices of some life insurance companies.

According to the Insurance Commissioner at the time, the purpose of the Fund was "...to give the people of the state the benefit of the best old-line insurance on a mutual plan at the lowest possible cost." This is still the main purpose of the Fund.

When the Fund was first set up, the maximum level of coverage available to each policyholder was \$1000. This maximum has been raised periodically and is now \$10,000.

In keeping with the original purpose of the Fund, modifications have been made when necessary. On April 1, 1977, a number of significant changes were introduced into the operations of the Fund.

The first of these involves the issuance of a new policy series with substantially reduced premiums. Historically, the Fund has always returned a large percentage of the premiums collected from policyholders in the form of policyholder dividends. Dividends are paid when actual operating expenses are less than anticipated. In the new policy series, it is expected that the difference between premiums and costs on State Life Fund policies will be kept to a minimum. It is hoped that this change will make this low-cost insurance available to those people who cannot afford the "out-of-pocket" expense of a large initial premium even if much of it is subsequently returned in the form of a dividend.

A second change in the Fund's operation involves the development of separate premium tables for men and women based on different mortality statistics for the two sexes. In recognition of the fact that women have a longer life expectancy than men and can be expected to pay premiums over a longer period of time, their rates are substantially lower than those of males at the same age.

The third major change is that for the first time the State Life Fund is offering life insurance protection to persons with histories of medical impairments. Under the new series, the basic Ordinary Life Policy will be available to most applicants who are classified as "medically-impaired." The premiums charged for these risks will be higher than those charged to standard risks. This difference in premium will be graduated and the amount of surcharge will be related to the extent of the risk. Decisions as to which applicants are in this category will be made on the basis of medical examinations requested and paid for by the Fund.

Purpose of Life Insurance

Life insurance policies are purchased for two reasons. The first and most important of these is "death" protection i.e. money for funeral and last illness expenses, money to assure the payment of debts and money to provide an income for dependents when the policyholder dies. Although most life insurance is sold to wage earners to guarantee an income for dependents, some non-wage earners also should consider life insurance. A parent whose child care

