

**ENERGY.  
We can't afford  
to waste it.**

*James B. Beard* *CM*

Property of  
**JAMES B. BEARD**  
Soil, Crop Sciences Dept.  
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**NORTHERN MICHIGAN TURF MANAGERS ASSOCIATION**

C. E. "TUCK" TATE, PRESIDENT

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Many things have happened since our last letter and we will try to bring you up to date. The first big thing in this new year was the successful 51st Michigan Turfgrass Conference on January 13th and 14th, at Kellogg Center, M.S.U. Here there was a record attendance, with rooms overflowing with people eager to get additional education from the fine speakers. Many of these speakers were from Michigan State and many from distant places like Dr. Al Turgeon, Texas A. & M Ag Experimental Station at Dallas, Dr. Don White, University of Minnesota, Dr. Tom Watshoe, Penn State University, Dr. Dave Martin, Columbus, Ohio, Clay Nelson, W.A. Cleary Co., Somerset, N.J., Bruce A. Sering, CGCS, Glen View, Ill. plus our guest speaker at the luncheon, James Blakely, PhD., with his "Accent on Laughter".

During this Conference, the annual meeting of The Michigan Turfgrass Foundation was held and three new directors were elected for a term of three years. Those elected were Mike Edgerton, Meadowbrook Country Club, Bob Olsen, Robert Olsen Landscaping and Joe Yoder, Cadillac Country Club as representative for the Northern Mich. Turf Managers Ass'n. At the Board of Directors meeting following the conference, James Timmerman was elected President, Jerry Faubel was elected Treasurer, Robert Olsen was elected Vice-President and Gordie LaFontaine was elected Executive Secretary for the coming year. Dr. Paul E. Rieke remains the Assistant Secretary plus Dr. Jos. M. Vargas is the Assistant Treasurer and these two gentlemen carry the paperwork burden for the Foundation, a good team.

This is a good time to speak for the Michigan Turfgrass Foundation and raise the question, are you a member or is your club a member????? If not, we would appreciate your checking into your own position or ask your Board of Directors to give it consideration. Remember that the next M.S.U. Field Day will be on campus July 23rd, 1981 and our next Michigan Turfgrass Conference will be January 19th & 20th, 1982. In the business of turfgrass, one does not stand still, one must keep abreast of every new thing that is happening through continuing education.

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The biggest, the best 52nd International Turfgrass Conference and Show was held at Anaheim, California, January 25th through January 30th. Over 7700 persons attended this wonderful educational conference and equipment show. The theme of this years conference was " Meeting Golf's Challenges Efficiently" and started with a keynote address by John C. Argue, President, Southern California Golf Association and the leading exponent to bring the 1984 Olympic Games to Los Angeles. Following this, the educational sessions began with outstanding speakers from many corners of the earth. At the session on Thursday, the United States Golf Ass'n President, Will F. Nicholson, Jr., presented their annual award to Dr. Jos. Duich, Penn State University for his outstanding contribution to turfgrass by his research, teaching and the many outstanding students in this profession. Also at this conference, Mike Bavier, C.G.C.S. was elected President of G.C.S.A.A. Mike is Superintendent at Inverness Country Club, Palatine, Illinois. Proceedings of the educational sessions are available to GCSAA members, one copy to each member, upon request.

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There are few, if any, jobs in which ability alone is sufficient.  
Needed also are loyalty, sincerity, enthusiasm, and cooperation.

## Concrete Cart Paths

By Gary Harrington  
Mesa Country Club

In 1969 I installed my first concrete path. This came about as we had just finished rebuilding two greens and a tee. I was in the process of getting bids for asphalt paths when a board member asked why I hadn't considered concrete. At the time, everyone felt it was impractical. By coincidence, the board member that mentioned concrete just happened to own the local Redi-Mix concrete plant. So the next day I was at his office discussing how to start a concrete path program. Three weeks later we started and I've been installing concrete paths ever since.

Mesa Country Club gave the go ahead to our construction program in the winter of 1977. The planned completion date for our concrete paths will be the winter of 1981.

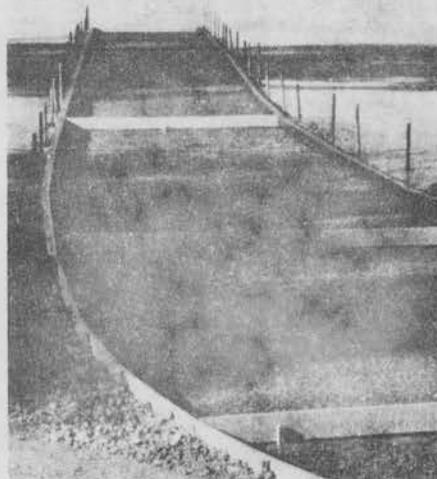
Budgeting a concrete path program is not without difficulties. The actual cost of concrete has almost doubled in two years. Increased labor cost of from 20 to 40% must also be taken into account; however, due to the variation in productivity and wages each Superintendent must establish his own labor cost. When using a depth of four inches your coverage will be approximately 80 sq. ft. per cubic yard.

Location of each path should be determined by existing wear patterns in the turf. If possible, on new courses, wear patterns should be given a reasonable amount of time to develop.

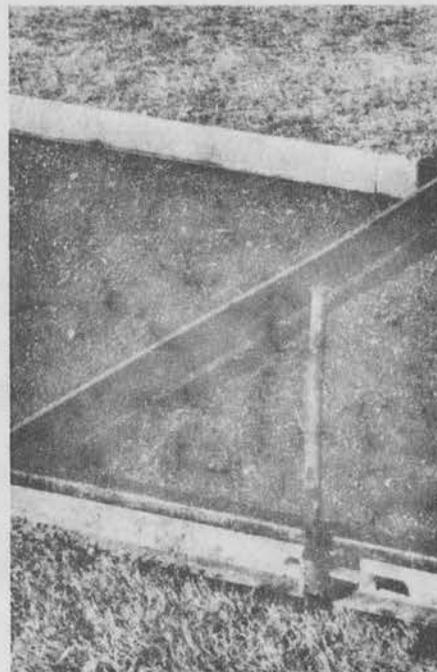
Prior to actual excavation all underground irrigation components should be located. We start the excavation phase by removing the sod with a sod cutter. This establishes a definite outline for the tractor to work in. In most cases we have found that a 5½' to 9' width is adequate depending on the specific use area (green-tees-service). When paving a 4" cart path we excavate to a depth of 2½" so that the finished product is raised above the existing grade.

Early in the construction phase we purchased steel curb forms

(2"x4"x10'). This item has been an excellent labor saving device because of the ease and speed of installation. On the curved sections of the path we use 1"x4"x12' bender board staked every 6" to 18" with a 1"x2"x12" stake.



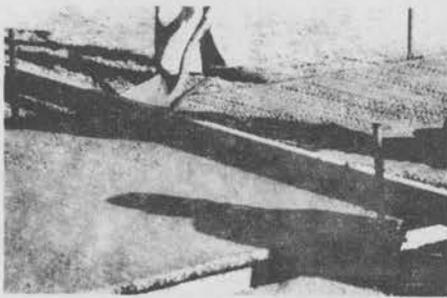
We have found that with our soil here in Mesa there is little or no need for an ABC base or additional compaction. Expansion joints are placed every 30' unless we pass close to a tree. This may vary for each course depending upon their local soil types and temperature extremes.



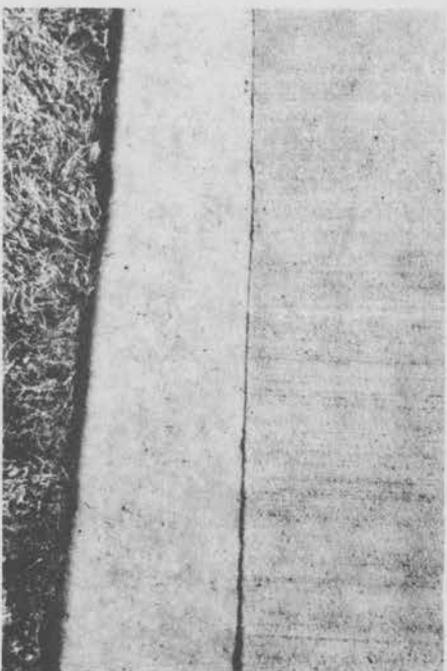
Prior to any pouring it is of utmost importance to plan access routes for the concrete truck up to 30 days in advance. This allows you to adjust your irrigation schedule in specific areas so that a dry firm route can be established. These trucks haul up to 11 yards of concrete and have a gross weight of over 30 tons.

During the actual pouring process it is important to have ample labor available for distribution, tamping, screeding, floating and finishing.

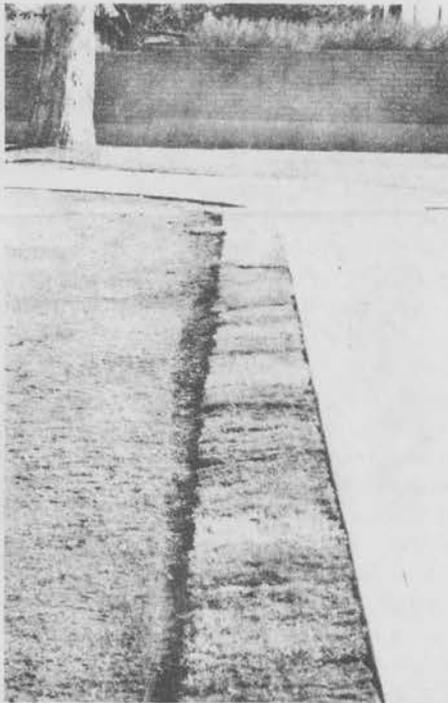




Because of the combination of foot traffic as well as cart traffic on grades varying from flat to steep and conditions varying from dry to wet, we have found that a very coarse to rough finish is necessary. The finished edge is accomplished with a rounded 4" edger.



All of our pouring is done in the winter months with optimum weather conditions. However, in adverse weather conditions it may be necessary to establish specific curing techniques. The forms are usually removed with 24 hours depending on our regular work schedule. At this point we fill to grade and use either seed or sod to re-establish the turf.



This is just a brief glimpse in how we are installing our concrete paths at Mesa Country Club. So

far we have encountered cement shortages and last winter many days of rain. But with a lot of luck we are still on schedule.

If you would like more information please come by—or write—and we will be happy to explain our operation.

**Cactus Clippings**

## HOW THE LEAVES CHANGE COLOR

by Ray Falconer

According to an official of the Bartlett Tree Research Laboratories, for best colors to develop, it requires bright sunny but cool days and cooler nights with the temperature less than 45 degrees, however frost has nothing to do with the color change directly. Overcast skies are not desirable as they cause the yellows and browns to dominate.

As the summer wanes, a band of tiny cells at the end of a leaf stem (where it hooks on to a twig) begin to dry and harden. This blocks off the flow of water and other nutrients to the twig, stopping up the plumbing system inside the leaf and the manufacture of sugar slows down. The chlorophyll then surrenders itself and the green vanishes. The yellow pigments which were masked with the leaves all summer are then revealed.

When excessive sugar is trapped within the leaf it turns scarlet as the production of red anthocyanin pigment takes place. The intense red of swamp maples and sugar maples illustrates this progress. So called red maples turn crimson while sugar maples turn red, orange and yellow. Dogwoods have a distinct crimson, sassafras becomes deep red and the mountain ash combines orange with scarlet. As for the oaks, some turn scarlet, others burgundy red, still others just brown. The beeches, birches, poplars, tulip and aspen trees are mostly yellow, although some beeches are two-toned with tan and yellow streaks.

Some trees like the butternut and walnut do not change color at all. The tamarack tree is the only needle-bearing tree which changes color and whose needles drop each fall. They usually turn along with or slightly later than the hardwoods like birch or maple. These trees grow in pockets of relatively moist ground and their needles turn a beautiful golden yellow before dropping.

# Soil and Water

## Fertility

### **Pet manure on farm garden? Not worth the risk!**

Some urban and rural residents have wondered if pet manure might be okay to use on small garden plots, such as a backyard home garden or the farm family vegetable plot.

R.E. Hall, professor of veterinary science, and E.E. Schulte, professor of soil science, both at the University of Wisconsin-Madison, say while there are no studies to fully document the pros and cons, there are some major health considerations to think about.

There is a roundworm common in dog manure and a disease common in cat manure that can cause serious health problems in humans. Both the worms and the disease can live in the soil for months or years, so there is a good chance that the problem can be transmitted to humans by consuming food grown in the soil if it does not happen when the manure is first applied.

An estimated 90 percent of all puppies are infected with a large roundworm called *Toxocara canis*. The eggs of these worms are present in dog manure and can be transferred to humans either by handling the manure or possibly also by eating plant tubers (potatoes, carrots, etc.) that are grown in soil contaminated by the eggs.

The eggs hatch in the small intestine and the little worms float through the bloodstream to the liver. From there they can migrate throughout the body, ending up in the lungs, heart, brain, spinal cord, skin, and in other tissues. The exact symptoms depend on where these worms end up.

Immature worms can affect the eye by attacking the retina and causing blindness. Until recently, removal of the eye was the only treatment available.

And these are not merely scare stories. In one pediatric hospital, 37 percent of the retinal diseases of children's eyes were caused by these worms. Another test, this one conducted by the U.S. Public Health Service, showed that 30 percent of all the adult human tissues tested were positive for the worms.

The principal problem with cat manure is a disease called Toxoplasmosis. This is an internal parasite in cats that is associated with miscarriages and malformation of unborn children whose mothers handled cat manure.

About 45 percent of the cat specimens examined at one animal health diagnostic laboratory were positive for this parasite.

Cats spread the parasite for the first 7 to 10 days after they become infected. After that they become resistant and shed fewer eggs (oocysts).

Toxoplasmosis is particularly a health hazard for pregnant women.

The pet manure, of course, does have some fertilizer value. Compared with cattle manure, dog feces has about 40 percent more nitrogen, the same amount of phosphate, and about 1/20 the potash. Dog or cat manure, along with the litter or bedding, would contain about 2½ times the nitrogen, the same amount of phosphate, and about half the potash as cattle manure.

If you were going to use it as a fertilizer, an application rate of 20 pounds per 100 square feet would supply about all a lawn or about half what a garden needs. But Hall and Schulte do not recommend its use as fertilizer, because of the serious health dangers.

Composting the manure, if it can be done at temperatures greater than 150 degrees (F) for 5 days would make it safe. But home compost piles seldom reach this temperature internally and almost never do on the surface.

The manure could be sterilized with methyl bromide also, but this would be a costly procedure; probably not worth the fertilizer value of the manure.

Instead, Hall and Schulte recommend you simply dispose of the dog or cat manure. Either flush it down the toilet, bury it at least 6 inches deep in the soil, or place it in tight plastic bags for garbage collection.

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## Best Places to Retire

The ten best states for retirement over the next decade are all in the South and West, reports *Money* magazine. A ranking of the states, based on projections by Chase Econometrics, reflects cost-of-living advantages such as low taxes, low unemployment, low housing costs, good medical care and public services. The ten best states for retirement living are: Utah, Louisiana, South Carolina, Nevada, Texas, New Mexico, Alabama, Arizona, Florida and Georgia. Just for the record, the worst state for retirement is Massachusetts, which has utility bills averaging \$1,600 a year, high taxes, dividends and interest taxes at double the rate for earned income, high unemployment, part-time jobs dominated by college students and the highest cost-of-living in the nation for retired people. All of New England, New York and New Jersey fall into the ten least desirable states to retire in.

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Weepers don't win; winners don't weep.

Harry C. Mabry

# Patience key to annual bluegrass control with endothall

By Dr. James Beard, turfgrass scientist, Texas A&M University

Controlling annual bluegrass (*Poa annua* L.) in bentgrass putting greens is a perennial problem. There are a number of pre-emergence herbicides that effectively control annual bluegrass. However, the continuing problem has been to achieve control without damaging the bentgrass' shoot or root system. Injury to the root system is particularly noticeable. Also, bentgrass damage can be aggravated by poorly drained soil and heat stress.

American golf course superintendents have attempted to control annual bluegrass with quick-acting herbicides. Different pre-emergence herbicides have been applied in the past 30 years with marginal success and often unwanted consequences.

Australian golf course superintendents have tackled the problem differently. In 1976 several Australian superintendents began a long-term experimental program of endothall usage that resulted in bentgrass putting greens free of annual bluegrass. Other superintendents using a similar control program are currently achieving the same results.

Endothall has been available for many years; however, the approach in the United States has always been to use it as a short-term treatment at high application rates with the objective of quick eradication. The Australians are doing just the opposite: They are pursuing a program of light, repeated applications appropriately scheduled. Continual application has resulted in complete control of annual bluegrass.

The endothall formulation being used is the sodium salt that contains 17.5 grams of active

ingredient per liter. It is sprayed at a rate of ¼ to ½ ounce to 2½ gallons of water per 1,000 square feet. Typically, two applications at 2- to 4-week intervals are made in both spring and fall when temperatures are between 50° and 70°F. The result has been a gradual elimination of annual bluegrass over a 2-year period. There is evidence that perennial types of annual bluegrass are not as easily controlled with endothall as are the annual types.

It is important to avoid treatment when the turf is under heat, drought or wear stress. Early morning or late evening treatments have been most effective. Endothall-treated bentgrass turfs possess substantially reduced wear tolerance; thus, applications should be avoided 5 days before intense traffic is expected.

An error in application, such as applying when temperatures are too high or at too high a rate, can result in some foliar burn to the bentgrass. However, the turf readily recovers because endothall has no long-term soil residual that can cause toxicity problems for bentgrass, especially the root system.

The specifics on how such a long-term endothall program might be used in the United States are not established. The rates and timings may vary slightly depending on the location's specific conditions. Those interested in experimenting with such a program should start on a nursery green with a rate of 1/8 ounce per 1,000 square feet and slowly increase the rate until the bentgrass' phytotoxicity rate is established. Annual bluegrass control should be attempted only on greens that contain an adequate stand of bentgrass.

## TODAY

Today is the time to begin to tackle a few of the challenges and the opportunities around us. Today is the time to speak only kind words about others. Today is the time to give something of ourselves, our time and our resources, where they are urgently needed. Today is the time to do at least one worthy thing which we have long postponed. Today is the time in which to express our noblest qualities of mind and heart. Today is the time to make a beginning. Never put off until tomorrow what can be done today.

(by Dr. Paul S. McElroy)

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## DUES

Forget the hasy, unkind word,  
Forget the slander you have heard,  
Forget the quarrel and the cause,  
Forget the whole affair because,  
Forgetting is the only way to Forget  
the storm of yesterday.

Forget the knocker and the sneak,  
Forget the bad day of the week,  
Forget you're not a millionaire,  
Forget the gray streaks in your hair,  
Forget to even get the blues,  
BUT, DON'T FORGET TO  
PAY YOUR DUES.

Sightseers touring Southern battlefields in a bus listened stoically to the comments of their driver-guide: "Here, a handful of our Southern boys routed 30,000 Yanks ... Here, one fine battalion of Georgia annihilated a corps of Yankee troops ... Here, two brave Virginia boys captured an entire regiment of Northerners ..."

Finally, a woman with an unmistakable New England twang asked, "Didn't the North win a single victory?"

"No, ma'am," said the guide politely, "and they won't as long as I'm running this bus."

## ONE SET OF FOOTPRINTS

One night a man had a dream. He dreamed he was walking along the beach with the Lord. Across the sky flashed scenes from his life. For each scene, he noticed two sets of footprints in the sand, one belonging to him and the other to the Lord. When the last scene had flashed before him, he looked back at the footprints and noticed that many times, along the path, there was only one set of footprints in the sand. He also noted that this happened during the lowest and saddest times in his life. This really bothered him and he questioned the Lord. Lord, you said that once I decided to follow You, You would walk all the way with me, but I noticed that, during the most troublesome times of my life, there was only one set of footprints. I don't understand why, when I needed you the most, you deserted me. The Lord replied, "My precious child, I love you and would never desert you. During your times of trial and suffering, when you see only one set of footprints, it was then that I CARRIED YOU."

NOTICE \*\*\*\*\* NOTICE

If you have not paid 1980 or 1981 dues, your name will not be in the new 1981 membership booklet which will be in the printing press within 10 days. Further, your name will be dropped from our mailing list in accordance with our By-Laws. If you do not receive further mailings, you will know the reason.

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At the G.C.S.A.A. preconference educational seminars, attendance was like the total conference in that full crowds were at the Nutrition, Disease, Insect Identification, Irrigation, Management, Cardiopulmonary Resuscitation and Photography session put on by Eastman Kodak. This is indicative of the need that many have about more information relative to improving your knowledge in your vocation. There was also a program to help and assist those interested in becoming Certified Golf Course Superintendents. We are happy to report that one of our members, Joe Yoder, Cadillac Country Club, became certified while there. We hope that this will be an added incentive for many others in our Association to go this route. Congratulations to Mr. Yoder, C.G.C.S.

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MINIMUM WAGE - The Michigan minimum wage is now \$3.35 an hour, up from \$3.10 last year. This is the same as the federal minimum wage. It applies to those employers who have two or more employees over age 18 at any time during the calendar year.

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The New York State Turfgrass Association has just announced its release of a 35mm slide set on "Weeds of Turfgrass". The 80 slide set complements two other slide sets available from the New York State Turfgrass Association, "diseases of Turfgrasses" and "Insects of Turfgrass in the Northeast." The set is a useful tool in the identification and control of weeds for maintenance personnel at parks, recreational facilities, golf courses, cemeteries, schools, commercial installations and other institutional sites. Produced by Dr. Arthur Bing and Robert O'Knefski, the slide set pictures such weeds as tall fescue, annual bluegrass, crabgrass, goosegrass, nutsedges, wild onion, garlic, oxalis, clover, black medic, dandelion, plantain, ground ivy, chickweed, knotweed, spurge, healall, sorrels, speedwell, chrysanthemum weed, mugwort and yarrow. For each weed there is a line drawing and a close up photograph along with shots of the weed interspersed with turf-type grasses. For further information, contact the New York Turfgrass Association, 210 Cartwright Blvd., Massapequa Park, N.Y. 11762, Attention: Ann Reilly, Executive Secretary. Price on the weed slide set is \$30.00 and worth every penny to every golf course superintendent for reference.

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This newsletter needs input from the people that read it, we would like to publish what is happening to you, that would be of interest to others. If you have any good ideas which would benefit others, short cuts which work and have for you, we are interested in passing on your ideas. Your suggestions as to how this letter can be improved plus maybe you would like to help put it together, be an associate editor? Let us hear from you. Thanks.

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**make your  
move  
NOW...**