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THE PRESIDENT'S MESSAGE

Well, it's all over. The PGA Championship is history. Now I'll have a little time for myself and the association.

I would like to thank all of the Superintendents who offered their services and equipment for the tournament. They helped me make this an event to remember. The burden was lightened considerably by all the thoughtful people. I can honestly say that I am proud to be a member of the Michigan and Border Cities Golf Course Superintendents Association.



The *esprit-de-corps* of our group is one that we should be proud of. There are many local chapters throughout the country that have us beat in numbers, but none with the spirit that we possess.

The raffle tickets are selling well and most of the tee times are booked for our Annual Golf Day. The 18th of September should be a real day to remember. If we all do our part we should make around \$10,000 for turf research. If you haven't volunteered to do your part - do it now.

Proudly your President,
Ted Woehrle

AUGUST PICNIC AT BURROUGHS FARMS

It seems lately that all our meetings are rained out - well, almost. It was raining on Tuesday, August 8th, when we arrived at Burroughs Farms for our Annual Picnic. We met in the pavilion for lunch and spent most of the day indoors because of the rains.

As usual, the Priestkorns did a great job of hosting the picnic. Mrs. Priestkorn and George (host Superintendent) and his wife supplied us with delicious ham and beans along with the coffee.

The kid's prizes and games were arranged for by Gary and Pat Bartsch. Earl and Jean Priestkorn organized the couples tournament which was finally held at 4:00 p.m. despite the rain. They arranged for the prizes also.

Sixteen couples entered the tournament and it ended in a four-way tie. The women cut cards to determine the winner, which turned out to be the

Benhams. Others tied for first were the LaFonds, Timmermans & the Vaughns. Of course the Priestkorns would have taken all the prizes if they had allowed their scores to stand.

What a wonderful place at Burroughs! When over 100 people show up in the rain it must have some kind of charm and appeal to entice them. We all thank George and his mother for a wonderful time.

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Golf Course Architect

Tony Jacklin, Design Associate

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Only one hundred years have elapsed between the first trans-continental railroad and the landing of men on the moon.

JULY MEETING AT HILLCREST

Tuesday, July 13, 1972, we were guests of Hillcrest Country Club. Pete DeVos, host Superintendent, planned a beautiful day but Mother Nature went on a rampage. Over one and a half inches of rain fell in a very short time and the course was under water.

Pete certainly has some tough management problems to conquer. Many of the problems were built into the course through poor construction! A wet year like this has to be disastrous. The general health of the turf plant under these poor conditions has to be un-

healthy.

Our guest speaker that evening, after a delicious meal, was Dr. Kenyon Payne of Michigan State University. His topic was "Students - Today and Tomorrow." (See page 9).

Ed Claun, past Superintendent of Hillcrest, was in the audience that evening. He was introduced to the membership. We learned a few days later that Ed had suffered a heart attack and is in the hospital. We all wish him a speedy recovery.

JUNE MEETING



AT CHEMUNG HILLS

LEFT TO RIGHT: Ron Abbott, Supt. of Chemung Hills, host for the June Meeting; Charlie Wilson, speaker from Milwaukee Sewerage Commission; and Frank Forier of Terminal Sales, who arranged for speaker.



Andy Bertoni showing his latest idea to Charlie Wilson - a stick-on sign for flag poles reminding golfers to "Please Repair Ball Bruises."



A closeup of Andy's stick-on sign. If interested, see Andy Bertoni for details.

PGA Championship

Over 114,000 people came to see the Pros play in the 54th PGA Championship at Oakland Hills Country Club, Birmingham, Michigan on August 3 - 6. With the exception of the heavy downpour on Wednesday afternoon the week was cool and pleasant. Light showers fell on Sunday afternoon, but only hard enough to get the gallery wet.

The course weathered the hot spell ten days prior to the tournament in excellent condition. We were able to cut our greens at 5/32 inch which made for excellent putting conditions, and our fairways at 5/8 of an inch which many compliments from the Pros. It isn't often that they are given such good conditions at a Northern Course.

The galleries were well behaved and the Press was very kind to me and Oakland Hills. The "Old Girl" held her own and once again no one has broken par, in this the Sixth major tournament held at Oakland Hills.

Doug Hill, the local boy who didn't make it, said that we had indians and their ponys buried under the greens . . . he must have suspected something. Actually the mounds cover the poor putters from the previous tournaments. Maybe he will get lucky enough some day to be buried under number 17 with some of the other luckless putters. He only had seven putts on number 17

on Saturday. This still isn't a record. One Pro had eight putts on number 11 on Wednesday. He finally chipped it in with a wedge.

Gary Player, the eventual winner, was very complimentary about the course even before he won the Championship. On Thursday he said that Oakland Hills was one of the toughest courses in America and definitely the best maintained. Needless to say it made me feel ten feet tall. When he won it meant even more. I am fortunate in having a well trained crew that has a genuine interest in their work. They worked a minimum of 12 hours a day, and in many cases 18 hours a day.

Over 30,000 cars parked on our North Course leaving behind roads and paths which looked like permanent ruts, but after the mud was washed off by the rains immediately following the tournament it was apparent that very little damage was done to the course.

The cleanup task after such an event is a monumental one. Thanks to a Turf Vac machine loaned to us, we were able to vacuum up most of the debris left by the concessionaire. All the heavy equipment was removed by Tuesday after the tournament and now there are very few signs left telling us that we had a very successful tournament.

Ted Woehrle

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STUDENTS-TODAY AND TOMORROW

by K. T. Payne, Crop Science Department, Michigan State University

It's been a pleasant task to put some thoughts together on today's students, because, while we work with them daily, and indeed we have two college-aged sons and a daughter living at home with us now, we don't back off and consider how and why they are ticking until given an opportunity such as this provides.

My experience, in addition to our own children, comes from coordinating our Turfgrass Management program of some 70 young men, and teaching several classes in that curriculum. In planning this, I found our Ombudsman, our former Vice President for Student Affairs, and our Assistant Dean of Students helpful.

In order to put today's students in perspective, we need to compare them with those of the past. During the depression of the early 30's and through much of that decade, the gaining of a college education for many was a traumatic exercise, involving long hours of work, low pay, financial incumbrance in the form of student loans, threadbare clothing, and Adlai Stevenson shoe soles. How well I remember a brother agronomy major at Kansas State who survived on a 5¢ bowl of soup into which he

would dump the entire contents of the sugar bowl for lunch and dinner each day. In summers, the 66-hour work week at 10 to 20¢ per hour brought a profound appreciation for the occasional Saturday when the boss said you could knock off early - at five o'clock - without pay, of course.

The fact that few college educations were achieved without hard work for self-support, resulted in a respect for just how much each classroom hour was costing, as well as providing exposure to one, or perhaps several potential career opportunities. Most students entered college with a relatively clear idea as to what they wished to prepare for, and changing major fields of study was the exception rather than the rule.

Another contributing factor to this stability of purpose was the greater awareness that children had in their homes of just what it was that Dad did to make a living, and a more intimate understanding of what both parents sacrificed to provide a home and an education for their children.

World War II, and the opulent years since, have changed much of this for the student of today. Typical of this is

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the fine Michigan farmer and his wife who sat in tears in an office on our campus recently wondering how and why their son had gone wrong. "Was he required to get a job to help finance his education?" "Surely not! We have sacrificed at home so that he wouldn't have to slave at Michigan State the way we did when we went through." In my opinion, this simple admission reflects an attitude which is responsible for difficulties many of our young men and women experience in seeking career directions today.

"Everything is different - and nothing is different."

This quote from some unknown bard carries much truth as comparisons are made between Joe College and Betty Coed of the '20's and '30's, and the In-group swingers who are "Doing their things" on the modern campus. The difference seems to be in degree, and perhaps in attitude. Bathtub gin and bootleg whiskey gave rise to conked-out imbibers, just as pot smoking and pill gulping affects today's freak-outs. Fortunately the proportions of students pursuing these activities were and are very small indeed, and seem to be about the same for both times.

Let's examine some of today's attitudes and see how they look from a layman's viewpoint. I profess no sociologist's skill or insight.

Our young men and women have not only grown up in an era of affluence, but they have lived in a fantastic age of scientific achievement. Exposure

to television has had a remarkable result in providing knowledge at an accelerated rate, but also in bringing a worldly awareness that was hardly available on a crystal set, or an Atwater-Kent. They have seen John and Robert Kennedy shot in cold blood, Neal Armstrong take his giant step, Watts and Detroit, and President Nixon and Mao. Not once, but on many instant replays with reasoned analyses from different viewpoints, available at the press of a remote control button to another channel.

The 18 to 23 age group have much more in common today than yesterday because of this communication. They are much more conscious of the social scene, and therefore are, perhaps, more prone to idealism. They are thus made more vulnerable to a kind of conformity which makes them easily led. They are extremely reticent about criticizing a fellow student because of his actions or his values. They are also impatient with Archie Bunker's thinking which castigates a man because of his color or his creed. They choose to judge the individual on what he is and what he does rather than on his ethnic progenitors.

They are acutely aware of the "elitist" concept. Not only do the fraternities and sororities - the so-called socially elite - have trouble with recruitment, but this now carries over to the honoraries - the scholastic and activities elite. They look with skepticism on being set apart from

Continued on Page 10



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their fellows, and thus express a sensitivity which is difficult for the "establishment" generations to understand.

The past two years have brought a great change in their perspective of activism as a means of accomplishing change. The threat of the draft and of premature death in a steaming jungle, when the cause was not clearly defined, was a direct and justified concern to young man and woman. The plight of inner city blacks and other minority groups and their frustrated poverty, both as to means of livelihood in a wealthy nation, as well as the lack of an equal opportunity for education and accomplishment, has been dramatized vividly, and has been responded to with concern and with empathy.

Thus, events taking place off-campus often had a greater effect than those on-campus, and the student riots were an expression of the frustration of not being able to do anything about it. Most students caught up in the riots were those who had never had to work for self-support, and the poorer the student, the less likely he was to be in trouble.

But the affair at Kent State marked a turning point in this pursuit. Students realized that violence can be counter-productive, and they are now turned off by physical violence. They have begun to find that they can accomplish so-called individual freedoms through normal channels. Some feel that they have turned off too much, that the comparative calm on our campuses is a sign of despondency, exhaustion and despair; that anything will work. The idealism of the young is laudable - commendable - admirable; but the clash between idealism and pragmatism will be hard to settle - there are few simple answers.

Yet, what they have accomplished is truly remarkable. The lowering of the voting age to 18 with its attendant drinking permits; the relaxation of dormitory regulations to a point of non-existence; the admission to partnership and areas of responsibility

almost equal to those of the faculty in university communities, and being seated on city councils and university control boards would all have been viewed as out-right hearsay only a decade ago. At M.S.U. recently, students played a major role in voiding a proposed ten million dollar cross-campus highway project because of its attendant threats of pollution and to esthetic standards. Charges of air pollution by a single high school student resulted in the halting of burning thousands of dead elm trees, and a highly profitable wood chip industry resulted.

Today's student is more aggressive, more aware of his rights, more demanding of these rights, more impatient with insincerity, generally more polite, more completely educated, more healthy, and certainly more concerned for others than was his predecessor.

But, some of his gaps are astonishing!

As the NOW generation, they have little sense of history and scorn its study. They want to fight pollution and poverty, but have no understanding of the expense involved. They want to question and challenge the professionals without realizing that to do so effectively you must have the competency of a professional. They want to share administrative responsibilities without understanding how demanding of time, and indeed how boring most university committee meetings are.

After great and successful effort to gain seats, one M.S.U. department of 900 students cannot get ONE student to run for election to the departmental advisory committee. As professors, having grown accustomed to long hair and beards, and knowing that many who are thus equipped are fine young men, it is startling to visit the Job Placement Office on campus and to observe the absence of beards and headbands on men waiting for interviews. Most do not realize that maturity, judgment and wisdom come only with experience,

Continued on Page 18

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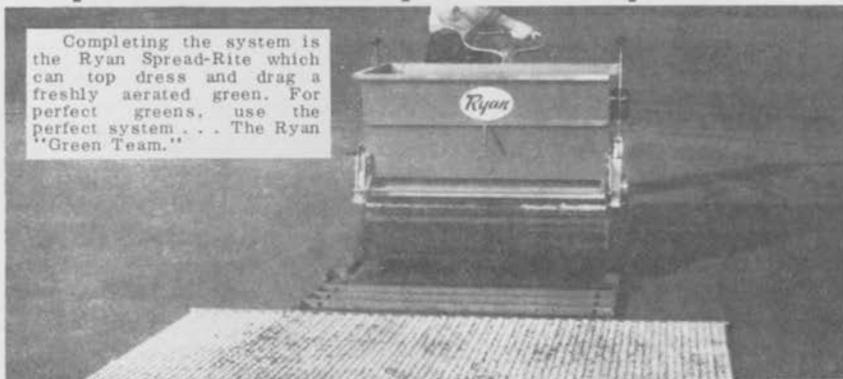
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NUTRIENT STORAGE AND MOVEMENT UNDER TURF

by Paul E. Rieke, Dept. of Crop & Soil Science, Michigan State University

The soil provides 13 nutrients which are known to be essential for plants: they are nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), and sulfur (S), all macronutrients, while the micronutrients (those needed in smaller quantity) are iron (Fe), manganese (Mn), copper (Cu), zinc (Zn), boron (B), molybdenum (Mo), and chlorine (Cl). Most of these nutrients are provided in sufficient quantity for turfgrasses by soils. Fertilizer applications most commonly provide NPK. Others may be also needed in certain situations.

Nitrogen

Nitrogen warrants such attention because it affects the turf in so many ways. Included are shoot growth, shoot density, root growth, color, tolerance to temperature and moisture stress conditions, disease susceptibility, wear tolerance, recuperative potential, and competition of the turfgrass with weeds and other turfgrass species. Nitrogen is added to the soil by fertilizing, in rainfall, and by nitrogen fixation carried on by certain soil microorganisms. In addition, nitrogen can be added to the soil in topdressing material, including with peat, manure or by clippings returned to the turf.

Inputs of nitrogen by biological nitrogen fixation are probably small under turf. Nitrogen in rainfall could approach 20 to 40 lbs. per acre, but is usually not considered directly in turfgrass fertilization. Of course, clipping return is merely a recycling of the nitrogen already present. If one assumes that 200 lbs. of green clippings (80% moisture) are returned to the turf per 1,000 sq. ft. annually, and that they average 5% nitrogen (dry

weight basis), this amounts to 2 lbs. of nitrogen being recycled in the clippings. This amounts to a very light fertilization with each mowing with ready release of N. Higher values would be evident if heavier nitrogen applications, or a longer growing season prevailed.

The reservoir of nitrogen tied up in the soil organic matter is an important source of nitrogen when soil temperatures are warm and peak microbial activity occurs. This was observed on plots located at Traverse City on a heavily irrigated sand, and at East Lansing on a moderately irrigated fine sandy loam. Soil nitrate levels were determined in soil samples taken every two weeks during the growing season. At both locations, but particularly at Traverse City where clippings were returned, the soil nitrate levels in the plots receiving no nitrogen reached a peak in August and early September.

Recently K. R. English, in M.S. thesis, found soil nitrates to increase markedly in an unfertilized plot of Merion Kentucky bluegrass sod grown on Houghton Muck. This organic soil had a total nitrogen content of about 2.9%. If the dry soil weighed 400,000 lbs. per acre this means over 11,000 lbs. of nitrogen is tied up in the organic matter of the soil in the surface 7". As it decomposed slowly, only a small total of that amount will be released at one time, but this points out the importance of judicious nitrogen fertilization in late summer especially.

Mineral soils might contain about 0.15% nitrogen by dry weight. Most of this nitrogen is essentially unavailable for the turf to use since soil organic

Continued on Page 14

Nutrient Storage Cont.

matter in minerals soils is usually relatively resistant to further decomposition.

Nitrogen losses by leaching can be appreciable if sound management practices are not followed, especially on irrigated sands. The soil nitrate study described above included several nitrogen fertilizer treatments at each location, which were applied to Merion Kentucky bluegrass. Data were obtained in 1970 and 1971 from the 0-6, 6-12, 12-18, and 18-24" depths. When very high rates of nitrogen (6 or 8 lbs. per 1,000 sq. ft. annually) were applied in soluble form (ammonium nitrate) in April, there was appreciable leaching. When this treatment was divided into 3 applications during the growing season, the apparent leaching of nitrate into lower horizons was much reduced.

Use of organic (or slow release) nitrogen carriers - milorganite urea-formaldehyde and isobutylidene diurea - reduced the nitrate levels in the soil during spring and early summer, but in

late summer the nitrate levels in the subsoil (to 24") were somewhat higher than in plots receiving ammonium nitrate in 1970. data. The 1971 data suggests similar trends except a very dry summer and limited irrigation resulted in very little nitrate nitrogen appearing in the soil, even in the 0-6" depth. This was attributed to the nitrogen fertilizer particles staying in the thatch layer, which was discarded when the soil was sampled.

There was more leaching of nitrates on the sandy soil at Traverse City. This may be explained by the heavy irrigation rates applied, the sandy nature of the soil, heavier nitrogen rates applied, and the return of the clippings on Traverse City plots.

On the basis of these studies we have prepared guidelines on nitrogen fertilization to keep nitrate leaching to a minimum:

1. Use no more than 1.5 lbs. nitrogen per 1,000 sq. ft. (60 lbs. per acre)

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- on turf in any one application,
2. Apply nitrogen only to actively growing turf,
 3. On sandy soils use irrigation judiciously to reduce leaching,
 4. If clippings are returned reduce nitrogen rates accordingly,
 5. Use slow release forms of N, and
 6. On sandy sites, especially where water sources could be contaminated with nitrates, it is well to consider the use of creeping red fescue, or other low nitrogen requiring turfgrass.

Phosphorus

Phosphorus does not leach readily through soils. Most soils have a high capacity to tie up phosphorus either by attraction to the clay particles, or by forming less soluble iron and aluminum phosphates if the soil is acid, or calcium phosphate if the soil is alkaline (above pH 7.9). An example of the tendency for phosphorus to collect in the surface soil is illustrated in data taken from one of our research plot areas. The 0-2" depth had a soil phosphorus test of 70 lbs. per acre. The 4 - 6 and 8 - 10" depth samples tested 25 and 6 lbs. phosphorus per acre, respectively.

Under general turf conditions in Michigan we recommend no phosphorus when soil tests exceed 40 lbs. per acre (Bray P1 test) when tested in our laboratory. The sorption capacity of the soil for phosphorus could be exceeded, of course, and phosphorus could move downward, but such rates of application would far exceed reasonable phosphorus fertilization for turf. Greater concern should be raised about the effect of imbalances of phosphorus which could induce a deficiency of iron or other nutrients. When arsenates are being used for *Poa annua* control, phosphorus applications should also be restricted since an application of phosphorus containing fertilizer can offset the arsenate influence.

Potassium

Potassium is a cation (positively-charged) - as such it is attracted to

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the cation exchange capacity (negatively-charged) on clay minerals and soil organic matter particles. This tends to hold potassium from leaching through the soil. It can be leached, however, with excessive irrigation, especially from sandy soils. Also, ammonia applications favor leaching of K by replacement. More frequent and usually higher potassium rates will be required on heavily irrigated sands to account for the greater leaching losses.

Data in Table 1 show the tendency for potassium to stay near the surface of a fine sandy loam soil. Increasing nitrogen rate caused a decrease in soil potassium test due to greater amounts of potassium removed from clippings.

Table 1. Soil potassium tests as affected by depth of sampling and rate of nitrogen application

Annual nitrogen rate lbs./1,000 sq. ft.	Depth of sampling, inches			
	0-2	2-4	4-6	6-8
	lbs. of K			
4	274	184	108	108
14	197	120	101	96

Certain soil minerals have the ability to fix potassium, that is, to tie up potassium within the structure of the mineral. This takes potassium out of the soil solution and prevents its leaching, but it is not available to the plant until it is released from the mineral again. Soils which have such minerals may contain great quantities of potassium, but soil tests may not be high. On such soils response to potassium may not be apparent.

Others

Calcium and magnesium are closely related to soil pH. If pH is acceptable for the turf both of these nutrients are usually present in adequate quantities in the northern Midwest. In some cases a need for magnesium may occur. Soil testing is the best means for determining magnesium needs.

Sulfur can be leached from the soil in the sulfate form. Heavy rainfall and irrigation, especially on sandy soils,

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Nutrient Storage Cont.

contribute to sulfate leaching. Reports of sulfur responses on turf are most common in Washington and Florida. This need for this nutrient will probably become more widespread as more stringent air pollution controls are employed which will reduce sulfur additions to the soil by rainfall.

The micronutrients, iron, manganese, copper and zinc, are normally present in much more than sufficient quantities for turf. If soil pH is too high, however, they are often not in available form. Deficiencies of iron are especially common on shallow rooted cool season grasses (particularly bentgrass and *Poa annua*) as well as on many of the warm season grasses. In the Midwest many greens have become considerably higher in pH because of irrigation with hard water. We find pH values of 7.4 to over 8.0 common on greens in Michigan. Lowering soil pH can make the iron more available again.

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Students - Today and Tomorrow Cont.

not just because you reach a certain age.

A word on the "New Morality." Most feel that sexual habits haven't changed a great deal on campuses. Attitudes and frankness about the subject have changed dramatically on our campus since a comprehensive and professional colloquium was held two years ago. But, we see no evidence that numbers of students buying the new morality are much greater than 30 years ago. It seems that the twig is still pretty bent - or straightened - by the time they leave their homes.

The "communication gap" and the "generation gap" are indeed real. But, they always have been. I have puzzled over the term - "...failure to communicate" many times, because I have often felt inadequate in this area. On asking a student about this recently, I received a brilliant answer, and I shall no longer wonder what it means. He said, "I feel that the inability to communicate is when someone tries to convince me of something on which my mind is already made up."

Those of us who work closely with students are stimulated and challenged by them. It is a thrilling experience to be a participant in this important formative part of so many young lives. Our confidence in their ability to handle technical problems has never been in doubt, for they have the skills, the ambition, and the energy to do a better job than we did. But, these of us at universities know that with their sensitivity, their awareness and their concern, they also will do a more complete job of helping their fellow man than has yet been done in the history of civilization. So, we see sayings like -

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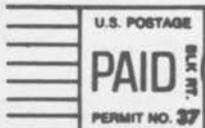
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