

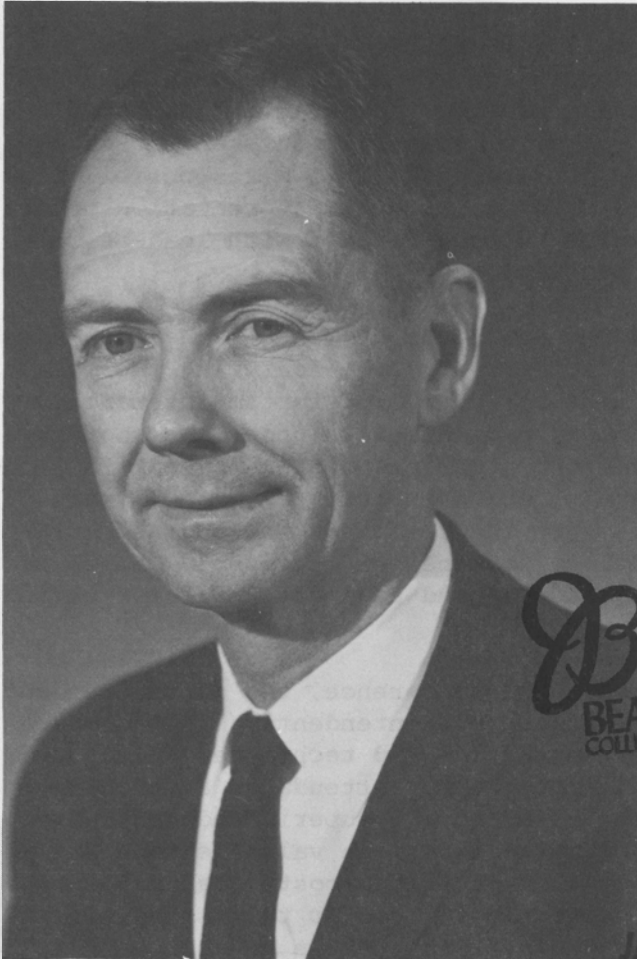
# NORTHWEST TURFGRASS TOPICS

VOL. 11, NO. 1

PUYALLUP, WASHINGTON

APRIL 1969

## From The President's Corner



BY GEORGE HARRISON

At this time of year most turf managers are faced with a problem of augmenting their crews with new personnel and the training that goes with it. It seems that the most pressing problem our industry has is facing up to the seasonal slack period that we have and the resulting replacements in the labor force that are necessary. The short courses that are given during the winter are excellent for training our permanent people, but we must, in turn, pass on this information to the new people that we hire. Several lecturers at these courses have pointed out the fact that personal responsibility and the will to do a good job is rather hard to find in part-time people. Some tricks that have been used by good turf managers can be very useful. One of these is the setting of goals for the workers such as competition in who can mow the greens in the shortest period of time and

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## Repairing Winter Damage to Turfgrass Areas

ROY L. GOSS

The winter of 1968 and 1969 proved to be one of the toughest that the Pacific Northwest has experienced in a number of years. Not only was it tough from the standpoint of low temperatures, but also deep snows. At the last report, areas in Eastern Washington still had approximately one foot of snow on the ground around April 1. Perhaps the most severe winter damage has occurred from the action of turfgrass diseases beneath the snow layer. Much of the snow encountered this last year occurred on nonfrozen surfaces or it remained on the ground long enough that the surface thawed beneath the snow providing a favorable environment for the growth and development of turfgrass diseases such as Fusarium Patch and Ophiobolus Patch diseases. Persons who were fortunate enough to have their disease control measures adequately applied immediately prior to the snow came out of the situation unscathed; however, some persons, although having thoroughly treated the areas, experienced considerable damage from diseases. The diseases dominant to Poa annua were the hardest hit. Two approaches can be taken to the repair of winter damage: 1) If the damage is severe enough, this would be a good opportunity to remove the dead grass on the greens that were hardest hit and rebuild them. If the soils and contours of the greens were satisfactory prior to loss of turf this winter, then only re-establishment of desirable varieties will be necessary. These greens can be re-established to seeded types such as Penn-cross, Astoria, Highland or Exeter, or from stolon varieties such as Old Orchard, Toronto or other stolons available. In order to prevent a green from being out of play for too long a period of time, stolonizing would be the fastest recovery procedure. Stolonized greens can be played approximately 8 weeks after they have been stolonized and should putt very well. Greens can possibly be played as early as 6 weeks after stolonization. This would imply, of course, that the stolons be planted at a favorable period of time when temperatures were reasonably high and other ground conditions

Continued Page 3

# 1969 GCSAA Conference Miami Beach, Florida

DICK MALPASS

Our trip to the 1969 Golf Course Superintendents Association of America Conference in Miami Beach, Florida started on a very cold, frozen Saturday morning, January 18. We left shortly after 4 a.m. and drove to Portland where we took an Eastern Airlines flight via St. Louis to Miami. We saw the ground only three times; when we left Portland; when we landed at St. Louis; and when we landed at Miami. There were clouds all the way. There was snow at Portland and the temperature was near 24 degrees. When we landed, that evening, in Miami, the temperature was 75 degrees. I doubt that the temperature dropped below 72 degrees while we were there since the gulf stream tempers the climate to a marked degree. Several of those who attended from this area left for home after the conference with a case of air-conditioning colds.

Hardly ever do we take a trip away from home without meeting an old friend or acquaintance where least expected. While waiting to leave Portland, we met an old gentleman and his wife who were flying east on the same plane we took. They had bought corn for chicken feed from my Dad over 45 years ago. He is an elderly Mennonite gentleman who has dedicated himself to service to his church in his later years, and was flying east to assist several congregations in Tennessee.

We spent Sunday, January 19, looking around and met with a cousin and his wife who we had never seen before. He is a doctor with a research group which make the pacemakers used for heart cases. He was very interested in landscaping, so we hit it off quite well.

Monday, January 20 was the first day of the conference so it was "early to rise" and over to the Hotel Fontainebleau to see what was going on. It is always a pleasure to attend a national conference of golf superintendents. It is the only time that many old acquaintances can be seen again. Nowhere, and at no time during the year will so many prominent turf authorities be assembled together. At no time will the opportunity be presented, as it is here, to rub shoulders with the top golf superintendents of the United States. I count

invaluable the assistance given by some of these fellows regarding some of the questions I have put to them. In fact, Ben Chlevin, Executive Director, GCSAA, in a publicity release to CLUB MANAGEMENT MAGAZINE before the conference stated as follows: "Inspiration drawn from speakers and fellow superintendents is equally important as the actual information acquired in the educational program. Your superintendent will leave the conference with a clearer picture of his own responsibilities, in addition to a better appreciation of his position through contact with leaders in his profession."

"Via the equipment segment of the show--The Greatest Show on Turf--featuring the most complete collection of turf maintenance equipment and materials under one roof anywhere, the superintendent can speak face-to-face with the manufacturers, and in many cases with the designers and engineers responsible for the new equipment. Here, he also can view and evaluate new labor-saving machinery."

"Through the conference, the superintendent meets other superintendents. They compare notes on methods and techniques, ideas and similar problems. Attendance at the conference adds to the superintendents knowledge; he becomes more valuable to his club. In the wake of rising costs, labor shortage and heavier golf traffic that sharply reduces the available "time on course" for maintenance, the superintendent must be a skilled professional--flexible enough to bend in whatever direction situations demand."

General sessions began the conference on Monday. Two top-notch speakers started off the program with Dr. Frank Goodwin, Professor of Marketing, College of Business Administration, University of Florida, speaking on "Humor and Life." Dr. Carl S. Winters, guest lecturer from General Motors Speakers Bureau spoke on "Your Human Relations Are Showing." These talks were both taped and portions will appear in forthcoming copies of "The Golf Superintendent." Subsequent sessions dealt with the following themes.

- Executive Management
- What to Look for in the Future
- Efficiency in Operation Which Help the Superintendent
- Greens Maintenance Practices as Related to Puttability

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Continued

would be optimum; 2) Greens that have not been too badly damaged from diseases, desiccation, or low temperature losses can be verti-cut, aerified, overseeded, and top-dressed, in that order, and accomplish the desired purpose. Perhaps extensive losses of turf from winter diseases could be a blessing in disguise because this affords an opportunity for improving the stands of desirable grasses. Most often, the grass lost due to diseases or winter injury is Poa annua.

Lawn grasses, parks, and other grounds having experienced extensive losses over winter can easily be corrected by power raking to remove dead grass and other organic debris and overseeding the area thoroughly with desirable grass types for the area affected. In Eastern Washington, the grasses most seriously affected by winter diseases are bentgrasses and Poa annua. Where these species have been invaders in bluegrass stands (Kentucky-types) overseeding with desirable Kentucky-type bluegrass will help to improve the stands of desirable grass. West of the Cascade Mountains, overseeding with mixtures of bentgrass, fescue, or bentgrass-fescue-bluegrass will help to bring the lawns and other turfgrass areas back to their original condition.

Oftentimes diseases do not completely kill the plant, and after a few weeks of growing weather, the diseased spots will heal themselves, and most of the evidence will disappear. The diseased areas, however, should be examined, and if the crown and root tissue is dead, then early remedial treatment should be practiced.

#### FERTILIZERS HELP TO RESTORE WINTER DAMAGE

While you are going to the problem of restoring extensive winter damage, carefully investigate your fertility levels. If the area has to be completely renovated, this would be a good opportunity to incorporate adequate amounts of phosphorus, potassium and lime, if necessary into the damaged areas. Maintain adequate levels of nitrogen after the new seed or stolons have been planted to maintain vigorous and rapid growth of the desired grasses. Many of the improved Kentucky-type bluegrasses such as Merion, Windsor, Cougar, Fylking, etc., require higher levels of nitrogen for maxi-

mum beauty and value. Do not neglect this very important part of your program.

Continued

tentional abuse may result from school children (or any other age, too), from incorrect application of weed-killing chemicals, or from careless use of equipment, particularly lawn mowers. Prevention is the best angle on all aspects of such damage.

One example of prevention is to install beds or mowing areas around the bases of trees. All trees up to 6 or 8 inches trunk diameter benefit from a grass-free space around the trunk so the tendency to run the hand mower against the trunk is eliminated. A few cuts by a lawn mower blade can girdle a small tree. The grass-free space may be a stone or gravel-covered circle of black plastic. Bark or other mulch may be used. Or a shrub and flower bed may provide the protection. Time and expense required for putting in such beds creates a much neater landscape. Years of tree life may be saved as well.

Fertilizer applications for shade trees are desirable. Tree fertilization probably is not commonly done. A general recommendation is to use 2 to 4 pounds of a complete fertilizer (e.g. 10-6-4) per inch of diameter. Trees under 6 inch diameter should receive one-half that rate. The best method of application is to put the fertilizer below the grass roots. Punch holes (crowbar,

Continued Page 7

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ARTHUR D. ELLIOTT

## WELCOME NEW MEMBERS

Noting that the papers and articles at the annual NWTGA conventions and "Turfgrass Topics" covers the broad spectrum of turf and ornamental areas and that the membership and attendance at the convention was heavily golf course oriented, the Board of Directors of NWTGA appointed me at 1969 chairman of the membership committee to expand the membership with stronger emphasis on invitations to join NWTGA by more schools, cemeteries, and other turf maintenance institutions.

We set a quota of 35 new members by April 30. Happily, we have just about filled our quota. As of this date, we have added about 30 new members of which 28 are engaged in turf maintenance involving schools, cemeteries, hospitals and other industrial and public institutions.

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As you know, NWTGA is a non-profit organization interested in turf research and the development of new turf management ideas and disseminating the results to as many people as possible who are directly involved in turfgrass growth and maintenance.

On behalf of the new membership committee and the Board of Directors, we all extend our heartiest welcome to the new members and shall look forward to seeing and meeting all of you at the annual meeting and turfgrass seminars this fall at Hayden Country Club in Idaho. Plan to bring your wives as well as your notebooks.

## Northwest Turfgrass Conference for 1969

This is your second announcement of the Turfgrass Conference to be held at Hayden Lake Golf and Country Club at Hayden Lake, Idaho on September 24, 25, and 26, 1969. If you wish to obtain a room in the Clubhouse, write directly to the Manager of Hayden Lake Golf and Country Club for such reservations. If the rooms have all been taken, suggestions will be given for nearby motels. Coeur D'Alene, Idaho and vicinity has a huge number of tourist motels, and all of these are less than 9 miles driving distance to the County Club. The list of these available motels and prices will be mailed to you sometime prior to the Turfgrass Conference so that you may book your reservations.

## First International Turfgrass Research Conference

Plans are shaping up rapidly for the first International Turfgrass Research Conference to be held at the Old Swan Hotel at Harrogate, England beginning July 15, 1969. The conference will last four days and will have papers presented from research people

Continued Page 5

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from all over the world. Participants have already registered from Japan, Australia, New Zealand, and the European countries. The heaviest attendance at this conference will come from the United States. Your editor is planning on attending this conference and will present a paper regarding turfgrass nutrition and its interaction with turfgrass diseases in the Pacific Northwest. Out of the three weeks spent in England, Scotland, and other parts of Europe, only two or three days will be left open for sightseeing, etc. The remainder of the three weeks will be devoted to research stations and consultation with industrial representatives in those countries. This should prove to be an extremely fruitful conference and tour and should stimulate a number of new ideas and applications for our own particular turfgrass industry including not only the golf courses, but playfields, parks and other recreational areas.

## 1969 International Turfgrass Conference and Show

The 40th International Turfgrass Conference and Show which was held this year at the Fontainebleau Hotel in Miami Beach, Florida on January 19 through 24 had the highest attendance record of any previous International Conference. Over 3,500 people attended this conference. The weather cooperated quite beautifully most of the time that we were at the conference although we were not able to fully enjoy it because of the great amount of time which was required to attend the educational sessions and the equipment and product displays.

The educational assemblies are very important to any delegate at this conference. Such a wide variety of subject matter was presented that it would not be reasonable to try to reproduce it in this paper. Proceedings from this conference can be obtained by writing directly to the Golf Course Superintendents Association of America. However, such subjects as Managing Yourself, Executive Management, Getting the Message Across, What to Look for in the Future, Public Relations, Increasing Play on Public Courses, Efficiency in Operations Which Help the Superintendent, and many other interesting

topics were presented at the educational assemblies.

Several research institutions were present and presented information on new turfgrass research and development. Dr. Skogley of Rhode Island presented Turfgrass Research in the Northeast, Dr. Reed Funk discussed Advances in Breeding Cool Season Grasses, Dr. Glenn Burton discussed Developing New Varieties for Southeast and Southern Golf Courses, Dr. Gilbert discussed Turfgrass Research in the Southeast, Dr. Wayne Huffine, Research in the Southwest, Dr. Youngner, Turfgrass Research in the West, Dr. Roy Goss, Turfgrass Research in the Northwest. Drs. Daniel, Skogley, Goss and Beard discussed Poa annua Control in the North, while Drs. Burt, Youngner and Huffine discussed Poa annua in the South. Most of these researchers were in general agreement that controls would eventually be available for Poa annua. It was generally agreed that most of the better pre-emergence herbicides today do produce important effects on Poa annua control. These, however, must be used judiciously and timed with the germination of the species in your respective areas. Although arsenicals are not accepted by all persons equally, they have proven effective in the Mid-Western area in the control of Poa annua. There are certain problems, however, associated with the use of arsenicals, and you must be willing to run the risk if you intend to use them. It is the opinion of the writer, however, that controls will be on the market in the near future for the inhibition of seedhead formation which will be one of the first steps in the right direction in controlling the species. If we can eliminate seed production, we can continue to overseed with desirable varieties and eventually eliminate Poa annua altogether. Next year's International Conference will be held at the Rice Hotel in Houston, Texas, and should prove to be a great deal of interest to everyone.

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L.W. GETZIN

## The Case for DDT and Other "HARD" Pesticides

As most of you probably know, there was a bill before the Washington State Senate (Senate Bill No. 219) during the recent legislative session which proposed to restrict the use of chlorinated hydrocarbon insecticides. This bill should be of interest to you because it involves the use of DDT, aldrin, chlordane, dieldrin, lindane, etc. In other words, many of the insecticides you rely upon for control of earthworms, sod webworm, wireworms, white grubs, cutworms, ants and termites.

In effect, Senate Bill 219 proposed to outlaw the use, sale and distribution of DDT and all other chlorinated hydrocarbon insecticides with a half-life of more than 30 days, except for research purposes or, for use in controlling an epidemic of insect-borne animal or human disease. This bill was drafted by the Washington Environmental Council, which is a citizen's group concerned about our environment and its pollution and was sponsored by Senators Durkan, Grieve, Ryder and Sandison.

A hearing on the bill was held before the joint Senate-House Agricultural Committee

on February 18. Homer Wolfe, entomologist from the U.S. Public Health Service in Wenatchee, and Richard Maxwell and your author from Washington State University were asked to present background information on the subject. Homer Wolfe summarized what is known about the effects of DDT upon man and presented evidence that DDT has no adverse effect upon man when it is used properly. Dick Maxwell outlined the care taken in registering pesticides and discussed many of the problems which arise in attempting to study and define persistence. I informed the group of the present status regarding the use of chlorinated hydrocarbons in Washington and explained the immediate effects that passage of Bill 219 would have upon the production of crops where chlorinated hydrocarbons are used.

Proponents of the bill included housewives, scientists, physicians, animal lovers and several representatives of the commercial seafood industry. Obviously, opponents of the bill were those who derive immediate benefits from the use of pesticides. The State Department of Agriculture opposed the measure because, according to Director Donald Moos, the use of pesticides is well-controlled and properly checked by existing state laws and state regulatory officials. He also felt passage of the bill would create disadvantages for state producers in interstate commerce.

This bill never did reach the Senate floor but died in Committee, so for the time being, there will be no additional restrictions on the use of these persistent chemicals.

Other states and other nations, I might add, are concerned about the detrimental effects of chlorinated pesticides and you should keep abreast of the regulatory paths

Continued Page 10



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Continued

etc.) within the branch-spread area of the tree and place fertilizer in the holes. Early spring is the best time to apply it; summer applications should be avoided unless irrigation is being used.

Trees which have suffered injury should have damaged branches pruned out. Final cuts, when properly done, should be quite flush with the trunk surface so healing can cover the wound area. Lost terminal leaders are not really serious. The typical growth pattern will be disrupted. However, many conifers in Western Washington are intentionally topped so the vertical growth will be repressed. This choice may be made when a Douglas fir (which may grow to 200-300 feet) is planted on a residential lot.

Lastly, I want to recommend some excellent trees that should be planted where outstanding permanent trees are wanted. Certain of these may not readily be available from nurseries but they are all excellent trees. All are selected from the recommended list which are endorsed for Washington. Our native conifers -- Douglas fir, Western Hemlock, and Ponderosa Pine are excellent. Austrian Pine is very good. Few trees equal the beauty of Deodara Cedar. Deciduous trees; 10-20 feet, Sourwood; 30-50 feet, Yellowwood; 50-75 feet Pin Oak; 75-100 feet, White Oak, European Beech, Kentucky Coffeetree, Littleleaf Linden [and a broadleafed evergreen, Southern Magnolia]; over 100 feet, Sugar Maple, Ginkgo, Honeylocust, Hackberry and Sweetgum.

### Turfgrass Field Day

The annual Western Washington Research and Extension Center Turfgrass Field Day will be held on June 11, 1969 beginning approximately at 10 a.m. All persons attending the Field Day will be asked to meet at the main administrative headquarters on West Pioneer Avenue for the initial discussions. The major part

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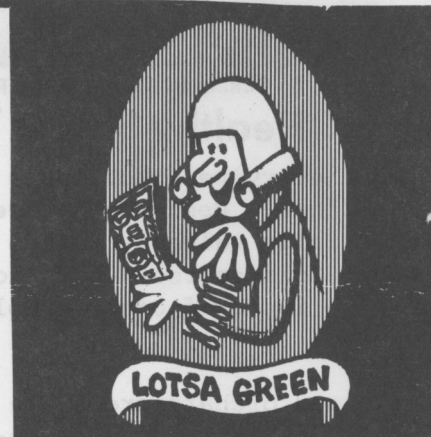
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of the Field Day will be conducted at Farm 5 where most of the turfgrasses and plots are established. This is your opportunity to find out firsthand what is going on in your local research program and to settle questions or problems that you may have. A number of well-qualified people will be in attendance at this Field Day and will provide you with an opportunity to obtain a great deal of information.

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## Healthy Shade Trees

Almost everyone likes trees for one reason or another. Desirably placed trees are financially valuable to the site they occupy. Golf courses with excellent grass will be improved considerably with good trees.

Field and orchard crops are grown for production. Their value is in the harvest taken. This is increasingly true of lumber, or Christmas tree production, also. In contrast, the value of a shade tree is not measured by any type of yield, such as growth of 1, 5 or 10 feet this season.

Shade or ornamental trees are only expected to BE THERE AND LOOK GOOD. And at best, demand little care or attention.

Basic thinking about trees for golf courses should be proper selection of the kind of tree planted in each specific place. The services of a landscape architect is one way to accomplish this. Such services include the choice of a pleasing variation of desirable trees to compliment your grounds. Knowledge of plant material is one aspect of a landscape architect's training.

Properly chosen and properly placed trees should be CARE FREE. Any ornamental plant requiring an involved spray schedule as is

needed to produce fruit crops is a burden, and should be eliminated.

What is involved in proper choice of trees? Size - is an important one, there are plenty of variations in kinds of trees so ones which mature at 20-25 feet can be selected if that is the appropriate size. Properly placed trees should never require pruning to control size -- only a rare clean-up of dead limbs, or minor shaping of branch pattern, or no pruning at all.

Shape, or silhouette, is another aspect. Conifers, or Christmas trees, are one example. Low, round-headed trees are another category, illustrated by the flowering magnolias, flowering cherries, hawthorns and Mountainash. Overstory, or the typical shade trees, are trees which almost always have lower branches taken off so there is headroom for people to walk below all branches. But there are series of sizes there too, 50-75 feet, 75-100 feet, or over 100 feet.

Adaption is another aspect. The tree must be hardy to the climate. Especially to the "once in 10 year" freezes, etc. as they are expected to remain for many years.

University recommendations of kinds of trees, typical mature size and other landscape characteristics are available through Washington State University's Extension Service. Extension Bulletin 592, "Plant Materials for Landscaping" recommends trees and shrubs in various height categories, as well as hardiness ratings and brief descriptions. [This bulletin is being mailed to all who registered for it at the Golf Course Workshop held in Puyallup on March 6 and 7. Others may request their copy from their county Extension agent.] The authors represent years of experience with the study of landscape plant material at Oregon State University, Corvallis, Oregon. Their recommendations are endorsed for use in Washington and especially for Western Washington.

Tree selection is the best course to pursue to have good, healthy trees. Adapted trees will be able to endure most insects and diseases which occur with only rare demands for protective spray treatment.

Tree care for the existing trees you already have is the next consideration. There are no trees which are immune to damage. Unin-

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Spraying Methods and Chemical Combinations for Greens and Fairways  
New Turfgrass Research and Development  
(This subject was broken into two sections, North and South)  
Poa Annua in the North  
Poa Annua in the South

Of course, there were numerous speakers participating in each theme.

Tuesday, January 21, saw the opening of the exhibits. There were 50,000 sq. ft. of exhibit space in one huge room with 300 exhibitors participating. This was probably one of the better conference facilities as far as exhibitors were concerned. I am sure that it was better for those wishing to see the exhibits. This area remained open through Wednesday and Thursday and was thronged with superintendents whenever I had the opportunity to go through.

Since the EVERGREEN GCSAA of Oregon-Washington was represented by so few, this year, we had to double up on Committee assignments with John Jaslowski meeting with the Advisory Committee and acting as Voting Delegate. I attended Chapter Secretaries meetings as well as Chapter Editors committee get-togethers. In addition as a candidate for national office, I had to appear before the Delegates meeting and at the main business meeting on Wednesday afternoon. Consequently many general sessions were missed and many talks which I would have liked to hear will have to be read in the general proceedings which have been recently sent to GCSAA members. Unfortunately, many fine talks do not appear in the proceedings and so will be missed entirely.

Since many of the subjects covered will appear in "THE GOLF SUPERINTENDENT" and

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other publications, we will not try to say much about them except to note that most speakers we were fortunate enough to hear handled their subjects in an outstanding manner.

We left Miami Beach early on Saturday, January 25 only to sit in our plane for 1-1/2 hours while the radio was repaired. We flew to Orlando, Florida, and visited with relatives near there and in Bradenton, near Tampa, for another week. In flying north up the east coast of Florida, we could not help but note the evidence of

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they take. Sweden has outlawed the use of DDT for the next two years and Russia has severely restricted its use, also. Several states have limited its use on certain crops, or on certain lands for periods ranging from several months to one or two years.

A significant case to watch is a hearing being held by the Wisconsin Department of Natural Resources. They are going to decide if the use of DDT should be banned or, if its continued use shall be allowed in the State. Spearheading the opposition to DDT in the Wisconsin hearing is the Environmental Defense Fund, a non-profit group of scientists and interested citizens who aim to protect natural resources by recourse to legal action. This group made an all out effort, with testimony by six prominent scientists, to prohibit the use of DDT. The defense will present its testimony during April and May. If a DDT ban is announced for Wisconsin, a precedent may be set and other states will probably follow with similar legislation.

Most of us who use chlorinated hydrocarbon insecticides feel they are a desirable asset to our well-being. However, we should recognize that these pesticides do adversely affect certain portions of the biological system. We also know that enormous benefits have been derived from the use of these pesticides and that their ban will result in a number of problems.

Because DDT and certain other "hard" insecticides do not always stay where they are put, but instead become part of the biosphere, any decisions and laws governing their use should be made, not at local and state levels, but preferably at NATIONAL and INTERNATIONAL levels.

Ultimately, the desirable must be weighed against the undesirable so thoughtful, well-based decisions on the use of pesticides can be made that will be of the greatest total benefit to the entire public.

#### **PRESIDENT'S CORNER** from Page 1

still do acceptable work; how many acres an hour of fairway can be covered without harming machinery or showing lapses in the work, or incentives for coming up with labor-saving ideas, or in efficient ways of doing various items of work. We have

been told, too, that most workers respond better to performing jobs if they know the reason they are doing them, given the best instructions in the use of the equipment entrusted to them, and are complimented on doing a good job as well as being criticized if the work fails to come up to standard. All of these approaches can certainly help us, as turf managers, to do a better job with the part-time help that we must use.

While attending a sprayers board meeting, I was interested to find out that they have the same problem in training personnel that we do in the turf business. One thing that many of them have done is to place their applicants on a bonus system whereby they are paid more if they are able to do more. It seems to me that possibly this could be used on many of our turf managers' jobs by setting up standards and rewards for exceeding these standards.

The sprayers, incidentally, are putting on their Sprayorama, a conference running for 2-1/2 days early in September, which will stress the safe, efficient use of various pesticides. The sprayers have shown themselves to be very cognizant of the danger of incorrect application of their materials and are going all out to see that their people are instructed and informed in the proper use. Their conference is open to anyone willing to pay the registration fee. For those who are using pesticides in quite large quantities, such as golf course managers, cemetery owners and park supervisors, attendance at this conference might prove very profitable. It is a specialized field in which no one can ever become too well informed.

A nursery I visited some time ago held one hour instruction classes every Friday morning. Each session a different man was assigned a topic and he instructed the whole crew. Why can't proper handling of engines and equipment be emphasized this way? A couple hours of down time eliminated each week would soon pay for the instruction time cost.

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**WATCH FOR THE NEW TURFGRASS!**

real estate development with many new hotels, subdivisions, condominiums, and new golf courses being built. This was also evident in a tour of golf courses in the Miami Beach area which we were privileged to take on Friday afternoon, January 24. In fact, we were on one course which cost \$15,000 to join with dues of \$1,500 per year. There were 85 members with the intention of having only 125. The course was a superintendents dream.

We wish to take this means to thank the many superintendents and businesses in the Northwest who contributed to the cost of our trip. We are deeply indebted to all of you. We can only wish that each of you may have the opportunity to visit future conferences. We would hope, also, that our efforts will result in one day having the opportunity to host the GCSAA Conference in the Pacific Northwest.

## Fertilization program for the Bluegrasses

The days of the old common Kentucky bluegrass for beautiful turfgrass areas in the Pacific Northwest are practically gone. Common Kentucky bluegrass does not respond to high levels of fertilization. Two to 4 pounds of available nitrogen per thousand square feet is usually satisfactory for the maintenance of common Kentucky bluegrass. Eight to 10 pounds of available nitrogen is considered too high. Since the advent Merion, Cougar, Windsor, Fylking and Newport bluegrass, we have had to re-evaluate nutritional programs for these new grasses for our area. Nitrogen rates from 8 to 12 pounds of available nitrogen per 1,000 square feet per season have produced the most outstanding quality from these newer varieties.

### HEAVY TRAFFIC AREAS

If these bluegrasses are being maintained on areas of heavy traffic, high fertilization is a definite requirement to stimulate new growth and maintain a dense stand of turf. Once the turf has worn out and soil has been exposed, the ultimate end is in sight, par-

ticularly on golf tees, football fields and playground areas. Rhizomes are necessary to create a more dense turf and higher rates of fertilization will stimulate their development.

Annual bluegrass, as most of us know, is an extremely shallow-rooted species and will grow and produce a crop of seed on soils low in nitrogen. This is one of the major reasons why Poa annua becomes dominant on areas of heavy traffic.

### LIME REQUIREMENTS FOR BLUEGRASSES

High calcium contents and soil pH levels from 6.4 to 7.0 are necessary to insure good longevity of bluegrass varieties. In the cool acid areas of the Pacific Northwest such as coastal regions, heavy applications of lime are frequently necessary to favor the bluegrasses. Soil tests should be conducted to determine the calcium levels as well as the pH before indiscriminately applying agricultural limestone or dolomitic limestone. Areas east of the Cascade Mountains only rarely would be expected to be low in calcium and have acid pH conditions. It is possible, however, to observe these conditions in that region on areas such as artificially constructed athletic fields, golf course tees, etc. Sandy soils are low in nutrient holding capacity and continued leaching from irrigation can result in loss of calcium as well as other nutrients.

Balance of nutrition, of course, is important in maintaining any turf. It is just as important in the maintenance of the bluegrasses. Be sure to keep the phosphorus and potassium levels adequately balanced with the nitrogen. It is still wise to maintain approximately a 3-1-2 ratio of nitrogen, phosphorus and potassium for permanent turfgrass areas.

The control of turfgrass diseases wherever possible will also help to maintain better stands of bluegrass. Grasses weakened by diseases such as rust, mildew, Helminthosporium or other diseases are quickly replaced by those that are not susceptible to those diseases.



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