

will facilitate dissolving the copper sulfate. Long-handled wooden paddles are necessary to stir the solution in the barrels."

#### Keep Holes Small, Round

"The holes in the ice should be cut just large enough to conveniently accommodate the motor shaft housing and propeller. The motor should not be started until the propeller is under water. This means starting and stopping the motor for each hole. As the estimated amount of copper solution is being poured from the barrel into the hole, the frame with the motor running should be rotated slowly; two or three complete turns are sufficient. By rotating slowly, the current set up by the motor will travel farther.

"The holes in the ice should not be too large and cut as round

as possible. The smaller round hole will minimize the bumping of the propeller shaft housing against the sides of the hole while rotating. A short piece of rope attached to the frame handles will enable the men to rotate the outfit without stopping.

"The barrels can be moved easily over the ice on a sled, with a cover or burlap bag over the barrel to minimize slopping. Two men on skates with a 100-foot tape and small ice chisels can

quickly mark the location where the holes are to be cut in the ice. Ten-quart water pails are convenient for pouring the copper solution from the barrel into the holes and also provide a means for measuring the amount of the algicide applied to each hole."

Although simple in construction and extremely low in cost both for construction and operation, this method of treating for algae under ice has proved most effective, Reed reports.

#### St. Louis to Host Weed Society Conclave Feb. 8-11

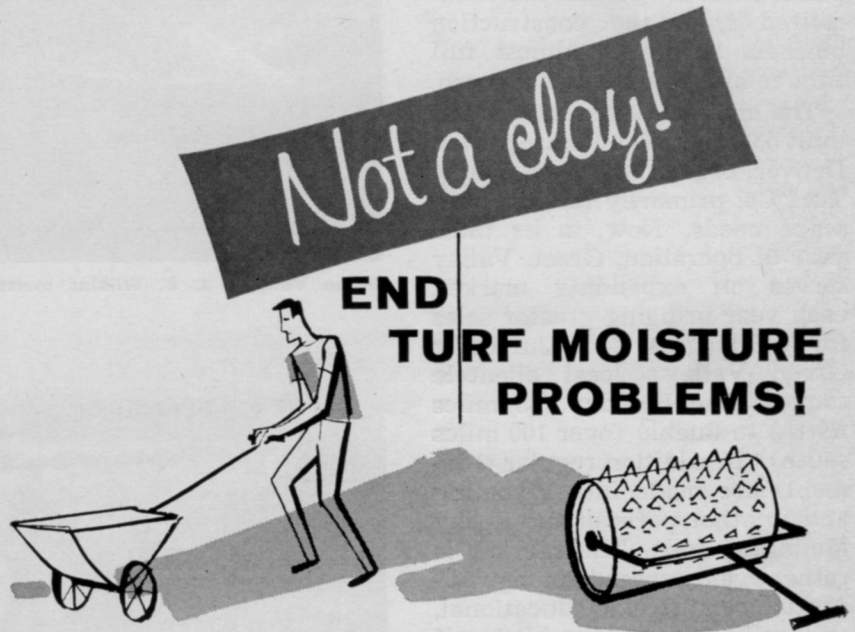
Attendance of 800 research and educational specialists is anticipated when the Weed Society of America holds its 1966 meeting in St. Louis, Mo., Feb. 8-11. The Sheraton-Jefferson hotel has been chosen for site of the conclave.

The program includes newest methods of weed control in industry, public utilities and agriculture. Committees representing seven phases of weed control are screening material to be presented to the meeting.

Chairman of program arrangements is Dr. W. R. Furtick of Oregon State University. Local arrangements for this annual event are in care of Drs. D. D. Hemphill and O. H. Fletchall, both of the University of Missouri.

President of the society is G. Fred Warren, professor of horticulture, Purdue University; Dr. Earl G. Rogers, University of Florida, is secretary; and Dr. Fred W. Slife, University of Illinois, is treasurer.

More details about this annual meeting will be included in the January issue of *Weeds Trees and Turf*.



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## Home Builder Becomes Sod Grower

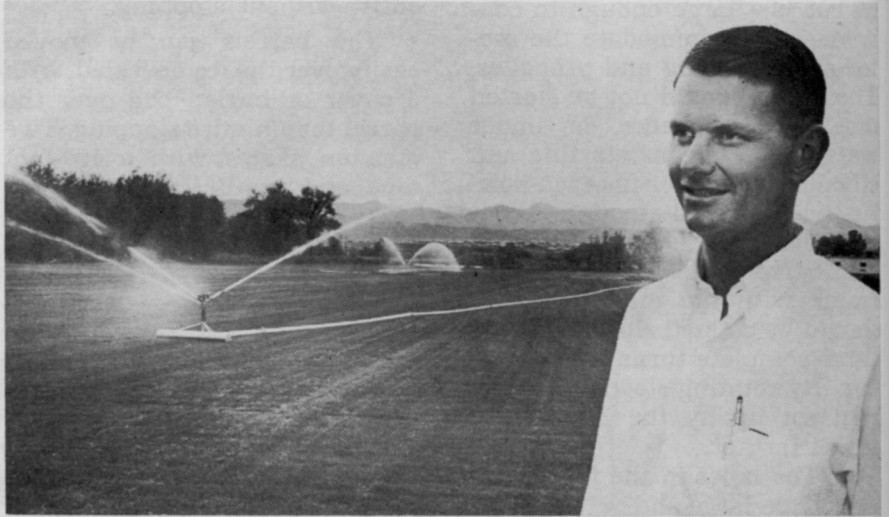
Tired of importing sod 700 miles from Iowa, a Denver, Colorado home contractor decided several years ago to grow sod himself. At the time, sod for lawns was virtually nonexistent in Colorado. But, in the last five years, sod production has expanded and the builder has semi-retired from the construction business to devote almost full time to his growing turf concern.

The man, K. C. Ensor, who has built 5,000 homes in metropolitan Denver, organized Green Valley Turf Co. primarily for his landscape needs. Now, in its third year of operation, Green Valley serves an expanding market, each year bringing greater sales for its bluegrass sod. Currently Green Valley's local clientele ranges from Boulder (35 miles north) to Pueblo (over 100 miles south). In addition regular shipments are made into Wyoming and to other parts of the Rocky Mountain area. The market is rather evenly spread among residential, commercial, educational, and military users, while golf courses and highway departments comprise but a fraction of the sales.

1965 saw 170 acres under cultivation. Despite a ravaging flood early this summer which destroyed almost 50% of the crop, Green Valley has bounced back and now intends to step up its production to 300 to 500 acres in the next three to five years.

Kentucky, Park, and Merion bluegrass are Green Valley's top crops. They are seeded, grown and harvested over a period ranging from 10 to 24 months. Completely new reseeding is done after every harvest. In addition to regular chemical fertilization, some 45,000 yards of humus and animal manure are added annually.

Undesired vegetation such as weeds have been very successfully controlled by frequent applications of weedkillers, in addition to Green Valley's practice



Green Valley's J. R. Wilkins oversees 35-mile irrigation pipe, 5,500 sprinkler system.



Field workers follow sod cutter, rolling sections of turf to be put on pallet ready for market.



In another operation, rolled turf is loaded by conveyor onto truck for delivery to customer.

of carrying each crop through at least one dormant winter season. Only one problem, quackgrass, still plagues the company, but since it only affects a small part of the crop, Green Valley officials are not overly concerned with it now.

Colorado's semi-arid climate poses special problems for the sodman. Constant heavy irrigation is needed, which makes the venture prohibitive to many potential sod growers. Green Valley, using water from river-bottom wells, irrigates up to 2.2 million gallons daily through a network of some 35 miles of light-weight aluminum pipe which feeds about 6,000 rotating Rainbird sprinklers, all automatically sequenced by time-control valves. This elaborate water system also provides the route for closely controlled fertilization.

Good transportation equipment and materials-handling devices are of essence, Green Valley Secretary-Treasurer V. Nelson Shurts points out. "The company's management is involved

in a never-ending search and re-search for materials handling equipment," he told WTT. To date the most successful method they have found is the palletizing of nine-foot-square rolls. Mechanical conveyers of various sizes and purposes are also utilized wherever possible.

Mowing is done twice weekly during summer months by a combination of two flail mowers, one large diesel-powered seven-gang mower and one custom-built rotary mower. The latter is designed for use under irrigation pipes.

Seven tractors with plows, discs, roto-tillers, land levelers, and rollers ease bulk work. Other equipment includes a power sprayer, a rock picker, three sod cutters, miscellaneous small mowers, sweepers, two on-farm trucks, and three highway trucks (including trailers and special four-dual-wheeled dolly with a fifth wheel to handle semi-trailers in the field). Supervisory personnel find an electric powered golf cart especially useful in moving quickly and softly

over turf and delicate aluminum irrigation pipe. The company maintains a complete repair shop tooled with everything from a blacksmith's forge to modern welding equipment to service this array of equipment.

Green Valley holds membership in the Rocky Mountain Turf-grass Association and in the Mid-America Sod Producers Association. Other company officers include Vice President J. Russell Wilkins and General Superintendent Jim L. Jones. Green Valley headquarters are at 7951 South Santa Fe Drive in suburban Littleton, Colo.

### MSU Names S. H. Wittwer Director of Ag Station

Dr. Sylvan H. Wittwer, professor of horticulture at Michigan State University, has been named director of the university's agricultural experiment station, with the title of Assistant Dean in MSU's College of Agriculture.

Wittwer joined MSU's agricultural research division in 1946.

## Changing Your Address?

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## Society of Municipal Arborists Holds First Meet

City foresters, tree wardens and shade tree commissioners representing cities from many sections of the country, converged Oct. 1-2 on Philadelphia to attend the first meeting of the recently organized Society of Municipal Arborists. The event took place in the Hotel Sheraton.

Principal speakers at the sessions were Dr. P. P. Pirone, senior plant pathologist of the New York Botanical Garden, Dr. Henry T. Skinner, director of the United States National Arboretum, Washington, D. C., and Dr. Russell R. Whitten, research entomologist at the USDA Shade Tree Laboratory, Delaware, Ohio.

President of the association is Frank E. Karpick, of Buffalo, N. Y., with Edward H. Scanlon, Olmsted Falls, O., secretary.

Membership in the new organization is available to full-time arborists, and their assistants, directly involved with street tree planning and management.



**Attending Ohio Nurserymen's Association conclave** in Cincinnati, Aug. 24-26 were (l. to r.) Bernard Decker, of Paul Offenbergh Nursery, Columbus; A. K. Manbeck, A. K. Manbeck & Son Nurseries, New Knoxville; James Tornes, The Burwell Nurseries, Columbus; Merton Natorp, The Wm. A. Natorp Co., Cincinnati; John Horton, Horton Nursery Sales, Rocky River; Bob Richart, Elmer Heitmeyer Nurseries, Cincinnati; Bob Cole, Cole Nursery Co., Circleville; Merlin Pump, Pump Nurseries, Fremont; Morris Allton, Ohio Farm Bureau Federation, Columbus; and Harold Barnes, Barnes Roses, Huron.

## Tax Victory for Nurserymen Announced at Ohio Meeting

A victory for Ohio nurserymen was realized in a decision of the Ohio Court of Tax Appeals which reversed an order of the tax department, ruling in favor of Warner Nursery, of Willoughby.

This information was included in a speech given by Morris Allton at the Ohio Nurserymen's Assn. meeting, held Aug. 24-26 in Cincinnati. Allton, director of public affairs for the Ohio Farm

Bureau Federation, presented other facts, including the recently enacted laws requiring licensing of landscape architects and pesticide formulators.

The original tax order required Warner Nursery to pay a 70% personal property tax on implements and other equipment, rather than the 50% level used for agriculture.

Over 200 nurserymen and their families attended the annual event.

## Thiodan Receives Register

Thiodan (endosulfan) insecticide has received U.S. Dept. of Agriculture registration for control of dogwood and lilac borers, it was announced recently by Niagara Chemical Div., FMC Corp.

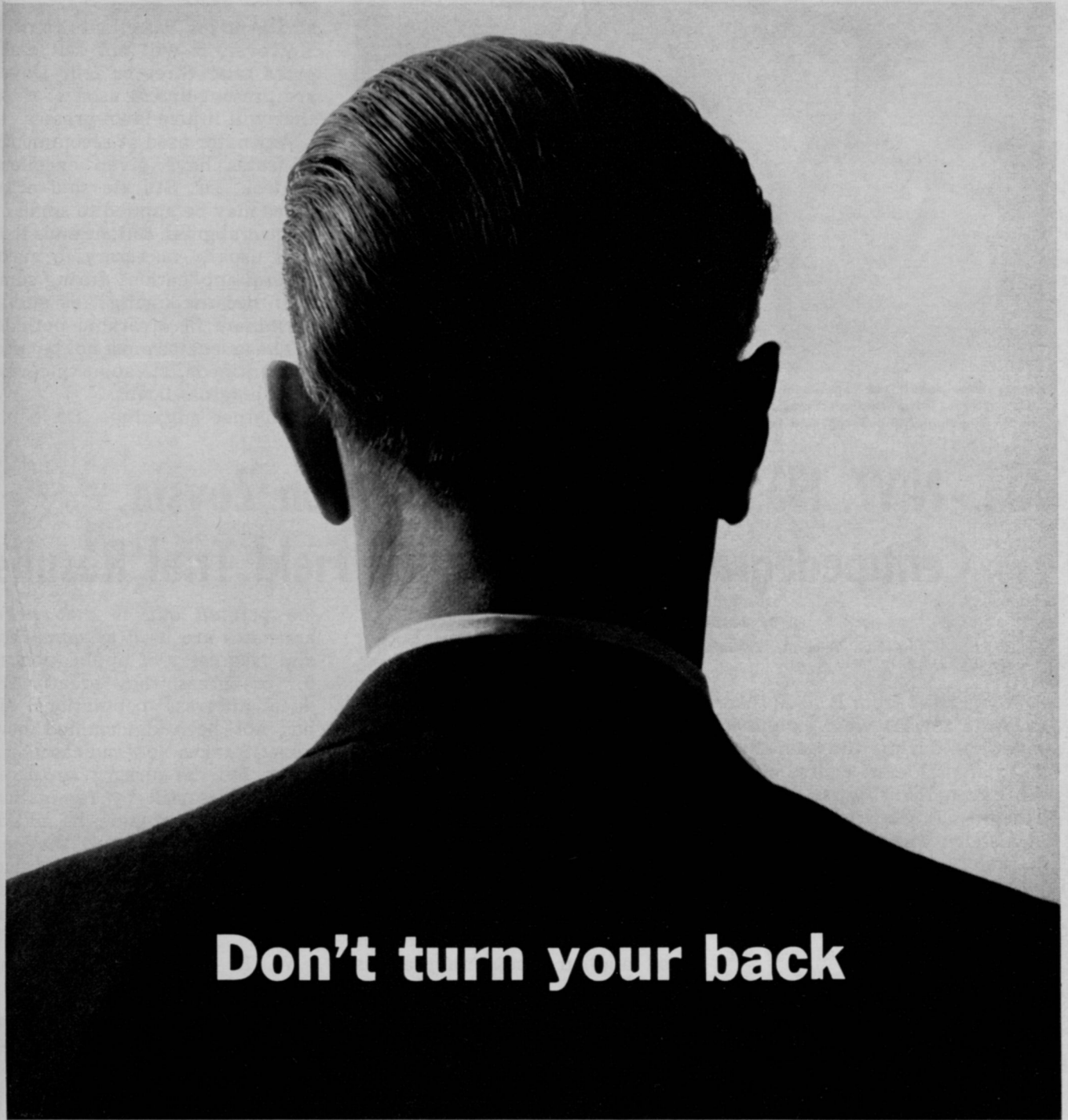
Recommended application of the material is one-half to one pound actual Thiodan per 100 gallons of water. The bark areas of plants should be drenched with the solution in early June and repeated again in 10 to 14 days.

Niagara markets the product in two formulations—Thiodan Miscible and Thiodan 50 WP. It has already been registered for control of aphids, whitefly, cyclamen mite, and rose chafer beetles on bushes, shrubs and flowers.

Complete data on Thiodan can be obtained by writing to the company at 100 Niagara St., Middleport, N. Y.



**Recently elected officers** who will steer course of the Hyacinth Control Society during 1965-66 are: Seated (l. to r.) James D. Gorman, Tampa, director of Hillsboro County Mosquito Control District, secretary-treasurer; Zeb Grant, West Palm Beach, director of operations and maintenance for the Central and Southern Florida Flood Control District, president; and John W. Woods, Tallahassee, chief, Fisheries Div., Florida Game and Fresh Water Fish Commission, vice president. Standing (l. to r.) are directors Dr. Lyle Weldon, Fort Lauderdale, USDA; Bill Wunderlich, New Orleans, La., chief, Aquatic Growth Control, U.S. Army Corps of Engineers; Bob Blackburn, Fort Lauderdale, USDA; and John E. Gallagher, Amchem Products, Inc., Ambler, Pa. Election took place during the association's fifth annual meeting at Palm Beach.



## Don't turn your back


Photo contributed by Paul Duckworth.

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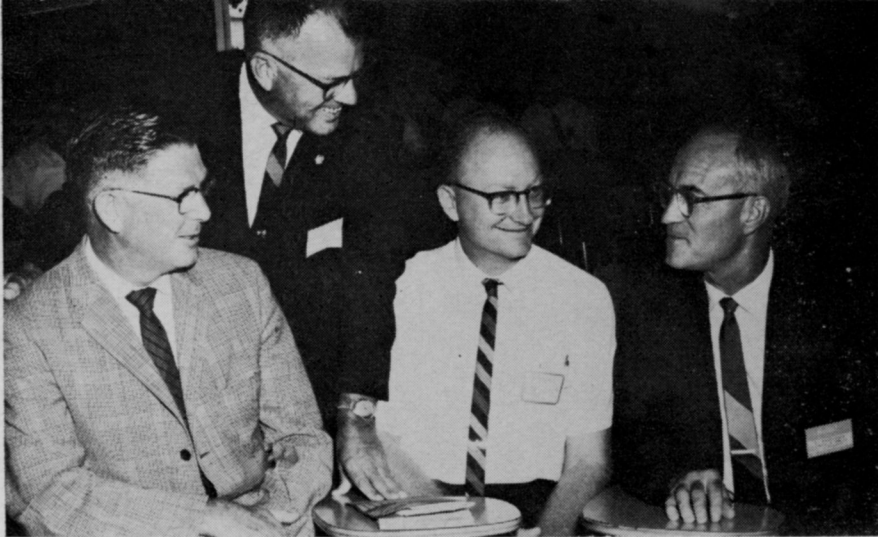
Offer your skills to help in planning for human needs, to assist in budgeting for

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Happy over results of experiments are these five speakers on this year's program for the Ala.-N.W. Fla. Turfgrass Short Course. They are, from left, James B. Moncrief of Athens, Ga., and Dr. Ben Hcgler, Bill Gregg, and Dr. L. E. Ensminger, all of Auburn University. 150 attended.

# Ala.-N.W. Fla. Turfmen Get Latest on Zoysia, Centipedegrass, Bermudagrass Field Trial Results

By JOHN PARROTT

Auburn University, Extension Service, Auburn, Alabama

Turfgrasses from B to Z (bermuda to zoysia) were examined in detail during the fact-filled sixth annual short course of the Alabama-Northwest Florida Turfgrass Association, Sept. 9-10, at Auburn University.

One of the biggest interest getters seemed to be the discussion and tour centered around the grass demonstration plots of Dr. D. G. Sturkie, Agricultural Experiment Station scientist.

His experiments now in progress involve fertilizer tests with zoysia matrella on four soil types, fertilizer tests on centipedegrass, strain test of bermudagrass, method and removal time of thatch on zoysia matrella, and herbicide use.

## Pre-, Post-Crabgrass Control

For crabgrass control, Dr. Sturkie said the following herbicides have given good control at the corresponding application rates.

### 1. Pre-emergent

Material	Rate A. I. A.
Azak	20 lbs.
Betasan	10-20 lbs.
Dacthal	10-20 lbs.
Simazine	1.5-3.0 lbs.
Treflan	3-6 lbs.

The effect these chemicals

might have, the soil scientist noted, on stands of ryegrass and winter grass mixtures overseeded in the fall following their application has not been tested. Neither has their effect on shrubs, trees, or flowers been tested.

### 2. Post-emergent

PMA (phenyl mercuric acetate), used at recommended rates and applied when crabgrass is

small, gives excellent control. However, it will not kill crabgrass after three or four leaves are present unless used at rates that will injure lawn grasses.

Arsenates used at recommended rates have given excellent control. Dr. Sturkie said arsenates may be applied to small or large crabgrass. But, he adds that it is usually necessary to make several applications during summer because crabgrass seeds germinate in favorable periods.

The arsenates must not be used on centipede, st. augustinegrass or bahiagrass lawns.

Another advantage, Dr. Stur-

kie pointed out, is that when arsenates are used at same rate and frequency of application as for crabgrass, they greatly reduce nutgrass populations. It has not been determined how long it takes to eradicate nutgrass, but the surest way to get rid of it is still by fumigation with methyl bromide, he added.

Experiments showed that arsenates will kill dallisgrass and bahiagrass when used at rates somewhat higher than for crabgrass.

W. R. Thompson, assistant

Early registrants (standing, left to right): Cooper Marcock, Atlanta; T. J. Loftin, Birmingham; Robert L. Tompkins of Jackson; and J. C. Noggle, Gainesville, Fla. Bill Norrie, Jr., of Pensacola, seated left, and Clem Simon, Birmingham, help with the registration. Tompkins is president of the association.



agronomist at Mississippi State University, told about the university's study of golf course turf management practices. He said they are much more effective when performed on a regular schedule than at haphazard intervals.

Thompson observed that most management practices are aimed at both improving air and water penetration into the soil, and controlling thatch accumulation.

Topdressing with soil is the most effective method available for controlling thatch accumulations, the agronomist said. Mississippi research shows that monthly applications of 1/8- to 1/4-inch soil to be best, but bi-monthly applications are far superior to no topdressing.

Thompson also told that vertical mowing is a useful tool for control of thatch and grain accumulation. The danger with vertical mowing, he added, is when it's done at irregular intervals.

"We have found we damage grass less by regular vertical mowing (every 2 wks.) than at wider intervals (6 wks.). To avoid permanent growth patterns, always change direction at each mowing. Begin vertical mowing in the spring and continue until overseeding," he advised.

Spiking is good for spring management. Spike every week to 10 days, beginning just before grass starts turning green. This eases the spring transition by bringing out the bermudagrass faster, according to Thompson.

Monthly aeration allows better water and air movement into the soil and provides a very desirable turf. The agronomist advises to begin aerifying in spring and continuing until 30 days prior to overseeding.

#### Overseeding Bermudagrass

James B. Moncrief, agronomist, USGA Green Section, Southeastern Region, discussed overseeding bermuda greens. He said that even though ryegrass is still used quite often for overseeding, interest in fine-leaved grasses is growing because:

1. There is poor transition in the spring with ryegrass;
2. Color is retained by fine-

leaved grasses in severe cold weather;

3. Ryegrass is very competitive with bermuda but dies fast when hot weather prevails; and

4. There's a constant disease problem with ryegrass, but it can be controlled with fungicides.

Moncrief added that cost definitely influences the type of seed some courses use for overseeding. However, he said the cost of seed per 1,000 square feet can be deceptive. For instance, 40 pounds of ryegrass at eight cents per pound equals \$3.20 per 1,000 square feet. Bent seed (colonial) at five pounds per 1,000 square feet at \$.60 equals \$3.00 per 1,000 square feet. Pennlawn at \$.60 per pound at 10 pounds per 1,000 square feet equals \$6.00.

#### Grass Choice Secondary

Dr. Robert W. Schery, director, The Lawn Institute, in his discussion of lawn maintenance said, "Response of the turf is generally contingent upon a number of primary and secondary practices, which, in toto, can be more important than the type grass. Any one of these can limit performance, but mistakes in planting, mowing and fertilizing are apt to be more serious and will show more quickly. All maintenance practices together establish the environment for the lawn, and if they are adjusted to

meet the ecological needs of the particular grasses chosen, there will be a minimum of problems and failures. The grass then fights most of its own battles against pests."

Other speakers on the program were: Marshall S. Helm, program chairman, Alabama-Northwest Florida Turfgrass Association; Tom Mascaro, West Point Products Corp., West Point, Penn.; and Warren Whitney, vice president and general manager, James B. Clow and Sons, Inc., Birmingham, Ala.

Participants in the conference from Auburn University, Auburn, Ala., were: L. E. Ensminger, professor, agronomy and soils; Bill Gregg, agronomist-seed; R. T. Gudauskas, associate professor, Department of Botany and Plant Pathology; Henry P. Orr, professor, ornamental horticulture; and Hoyt M. Warren, assistant director, Extension Service.

Dr. T. B. Hagler, chairman of Plant Science Division, Auburn University Extension Service, was chairman of the short course.

About 150 people attended from the two-state area, including turfgrass producers, country club and golf course superintendents, cemetery managers, park and recreational area caretakers, military groundskeepers, nurserymen, fertilizer dealers and landscape consultants.



Nothing like colored slides to show results, these participants agreed as they readied their part of the Ala. program. Shown are, from left, Dr. R. W. Schery of Marysville, Ohio; Dr. D. G. Sturkie and Dr. R. D. Rouse, both of Auburn University; and H. G. Smock of Montgomery, Ala.

# Pruning, Beetles, Pesticide Safety Are Topics at Minn. Tree Maintenance Course

By JOSEPHINE B. NELSON

"The benefits of pesticides to man have far outweighed the small risk taken by their use," Neil Miles, extension horticulturist at the University of Minnesota, told 147 men attending the annual Shade Tree Maintenance Short Course on the University's St. Paul Campus, Sept. 20-21.

Delegates to the two-day meeting were also treated to a comprehensive discourse on that important phase of tree care involving pruning by Dr. L. Snyder, head of Minnesota U.'s Department of Horticultural Science. Entomology department head, Dr. A. C. Hodson told why some trees are more susceptible than others to insects.

Miles defined pesticide safety as "the wise and judicious use of fungicides and insecticides. It requires an intimate knowledge of both host and parasite and an awareness of the ramifications of the procedures used to control the pest. It requires common sense—common sense on when and how to apply pesticides and when and how not to apply them.

Furthermore," said Miles, "it requires an understanding that pesticides are poisons; they are to be feared and respected as all poisons should be. But it is further understood that these poisons can be used in such a manner that they are not dangerous." In conclusion, he challenged the group to plan a pest control program that is "flexible to move in when needed and restrained when no practical use can be foreseen."

## Conifers Less Tolerant

Ways of detecting and evaluating insect damage and need for control of common insects of shade trees were stressed by Dr. A. C. Hodson. Conifers, he pointed out, have much less ability to withstand defoliation than broad-leaved trees. Once a conifer has been completely defoliated by insects, the tree is dead. Deciduous trees, on the other hand, can tolerate two or three years of complete defoliation by insects without dying. Although they will show some

injury, they will put out a new set of leaves within about three weeks.

Hodson outlined three major ways shade trees can be injured by insects:

1. By leaf-chewing insects such as caterpillars which defoliate trees.

2. By sap-sucking insects such as aphids and scale insects. Symptoms of such injury include spotting and mottling of leaves, leaf curling or distortion, and some galls. Galls disfigure the foliage but otherwise have little effect on the health of the tree.

3. By boring insects, like bark beetles, which feed just under the bark, and by other borers which go deeper into the wood.

## Dying Trees More Susceptible

Actually, bark beetles are secondary rather than primary pests, Hodson explained. The tree was already unthrifty and dying *before* the bark beetles arrived, *not because* they were there. The elm bark beetles, which spread the fungus that causes Dutch elm disease, breed in dead and dying trees.

## Pruning Tips

In his discussion on pruning, Dr. L. C. Snyder underscored the importance of understanding the growth habits of a tree in order to prune properly. Among suggestions for proper pruning he listed: making cuts close to the stem to facilitate healing, shaping the cut to facilitate healing, pruning at the right time of the year for each species, using wound dressings on all branches over 2 inches in diameter, and using correct tools. Above all, understand the growth habits of the tree.

Why prune? Snyder mentioned improvement of the



Treemen for parks, and public or private grounds attended the fact-filled conference. Here, at left, Dan Neller, Alexandria, Minn. Telephone Co. registers as Neil Miles and C. G. Hard, right, both extension horticulturists at University of Minnesota, look on. Debbie Grendahl of the Dept. of Agricultural Short Courses supervised registration of nearly 150 delegates.



health and appearance of trees, and safety.

The health of trees, he said, can be improved by (1) removing dead or decaying branches, thus preventing the entry of disease organisms into main branches or the stem; (2) thinning the crown to permit light and air circulation; (3) removing branches that cross and rub each other; and (4) removing branch stubs to prevent decay.

Consider the natural form of the tree in pruning to improve appearance, Snyder advised, since the natural form is the tree's most beautiful form. Except in formal plantings, avoid shaping by shearing, he suggested. For more symmetrical conifers, remove double leaders.

To improve safety conditions, it is important to remove broken or weak branches that might fall and endanger life, to remove branches that interfere with vision at street intersections, and to remove lower branches that interfere with traffic.

While removal of dead wood is one aspect of pruning that is concerned with both the health and the appearance of shade trees, don't be content with merely cutting off the offending branches. Determine the cause of dead wood and correct the cause if possible, Snyder urged. He listed these major causes of dead wood in shade trees: improper nutrition, soil compaction, fill around the tree, injury

to the root by construction, uncontrolled insect or disease injury.

Other speakers included Hugh Thompson, associate professor of entomology at Kansas State University; Bob Wright, Bachman's, Minneapolis; and University of Minnesota professors D. B. White and H. G. Johnson.

The annual Shade Tree Main-

tenance Short Course is an annual event on the University of Minnesota's St. Paul Campus. The course is planned for people professionally engaged in tree maintenance in parks, on public or private grounds. Sponsors of the event are the University's Department of Horticultural Science and the Agricultural Extension Service.

## Danville Junior College Introduces

### 2-Year Ornamental Horticulture Course

A new two-year curriculum to prepare students for specific positions in businesses that require horticultural training, is being offered students this fall at Danville Junior College, Danville, Ill.

Supervisor of vocational agriculture, James Nickell, says the two-year curriculum is a post high school program encouraged by the Vocational Education Act of 1963.

Graduates of the program will be trained as semiprofessional workers to fill positions such as foremen, assistants, and technical workers. They will qualify for employment in such fields as turf management, greenhouse management, park management, floriculture and floral design, highway beautification, tree surgery, arboriculture, and landscape.

According to a study by the Illinois State Advisory Commit-

tee on Ornamental Horticulture, it was learned that if 300 students trained in horticulture were graduated each year for the next 15 years the demand for these technicians would not be met.

In addition to classroom training, students will engage in on-the-job training during summer months with area horticulture businesses. A high school degree is not necessary providing an entrance exam to the college is satisfactorily passed. Some scholarships for students entering the program will be provided by the Illinois Nurserymen's Association.

Persons interested in training for a career in ornamental horticulture can obtain complete information by writing to James Nickell, Supervisor, Vocational Agriculture, Danville Junior College, Danville, Ill.

"Pruning improves not only health, but appearance of trees as well," Dr. L. C. Snyder (second from left) tells this group at Minn. Tree Maintenance Short Course. Listeners are, from the left, Bob Wright of Minneapolis, Eugene Buechner and B. L. Woodward, both from the St. Paul Parks Dept. Snyder's pointers were programmed to come just before fall tree pruning season.



## Thompson Mfg. Acquires Hayes

Thompson Mfg. Co., Los Angeles-based producer of lawn and garden sprinklers and turf irrigation systems, has acquired the Hayes Spray Gun Co., of Pasadena, manufacturer of hose sprayers for fertilizers and insecticides. Announcement was made jointly by Stephen F. Hinchliffe, Jr., president of Thompson, and Merle H. Banta, a Thompson officer and new president of Hayes.

Thompson Mfg. is located at 2251 E. 7th St., Los Angeles, Calif. The Hayes Spray Gun Co. is at 98 N. San Gabriel, Pasadena.

# "No more legislation a possibility," Washington Ag. Director Moos Tells Pacific NW Sprayorama in Seattle

Area Spraymen Form Regional Assn., Elect Officers

By MARILYN IRWIN

Eventual elimination of the need for additional Federal and local controls in our field of endeavor will come if individual professional applicators show increasing concern for improving and upgrading the image of pesticides in the public mind. This was the outlook forecast by Donald W. Moos, Director, Washington State Dept. of Agriculture, keynote speaker at the 1965 Sprayorama. Sponsored by The Washington Association of Ground Sprayers, the two-day meeting headquartered at the new Seattle Center, Sept. 20-21.

Moos said there are great opportunities for growth in the professional application of pesticides, but underlined the heavy responsibilities which go hand in hand with the future of spraymen.

Hosted by W.A.G.S.' president, Jack Daniels, the conference moved into high gear with a talk on turf diseases by Dr. Charles J. Gould, plant pathologist at Western Washington Experiment Station in Puyallup. He stressed the value of regular, well-timed applications of good fungicides, and pointed up the importance of two fall applications, one about Sept. 15 and the other around the end of October.

Proper preparation of areas before planting, plus good management of already planted areas, play as important a role in effective weed control for ornamental plantings, as do herbicide applications, according to counsel given delegates by Arthur Myhre, association horticulturist at Puyallup. The amount and type of herbicide necessary vary with areas and types of weeds, but the principles of sound preparation and

management do not change. If they are ignored they can render impotent, or only partially effective, an otherwise good weed control program, Myhre cited.

## Don't Overuse Surfactants

"An increase of 50% and more effectiveness can be gained from pesticides with the addition of oil-type surfactants," Tom Hall of Colloidal Products, Yakima, Wash. explained in his talk that was accented with full-color microphotographic slides. He used this method to illustrate how results vary with and without surfactants in the spray. But, he cautioned, "Overuse can be even worse than using no surfactant at all." Follow label and manufacturer's instructions, Hall urged.

## "Lush Look" Fertilization

Nitrogen fertilizer applied after August 1 each year is vital to proper turf care in the Northwest climate, according to Dr. Roy Goss, extension agronomy specialist, Western Washington Experiment Station. He underlined the basic importance of



Prophetic prediction of less legislation was given northwest applicators in Seattle by Washington State Dept. of Agriculture Director, Donald W. Moos at opening session.

regular fertilizer application for best results. Healthy turf situations resulting from proper fertilization, coupled with careful local selection and usage of herbicides fitted to specific problems, will produce that "lush look" that all customers desire, Goss explained.

Presided over by King County Extension Agent, Art Mehas, second day of the conference centered on plant diseases. Dr. Otis Maloy, extension plant pathology specialist, Washington State University, illustrated at length the complete plant disease pathology, indicating symptomatic detecting techniques which must be employed if proper identification and treatment are to follow.

## Misread Symptoms Foil

"Too often," Dr. Maloy reminded the applicators, "improper identification of a disease, due to misreading of symptoms,



Sprayorama host, Jack Daniels (standing), emceed banquet. At the table with him are (left to right) Claude Mills and Mrs. Mills, Lake Grove, Oregon; Errett Deck, Washington Dept. of Agriculture; Mrs. Daniels; Mrs. and Jim Overton, Portland, Oregon; Tom Hall, Yakima, Wash.; Clark Brown, Washington Dept. of Agriculture; and Mrs. Jack Irwin, W.A.G.S. secretary.