Davey Tree Care Sod Winterkill Science of Mowing

JUNE 1969

.

8 0

HARDER







Here's a mechanical sod harvesting machine that is setting the standards for the sod industry! The reason? Years of commercial field performance has proven its ability to handle all types of turf, to do it quickly, efficiently and at a low cost!

An important feature is the choice the grower has as to harvesting sod in rolls or slabs. The rolling and slabbing unit is interchangable, and can be changed quickly and easily.

The NUnes Sod Harvester and 3 men can lift, roll or slab and palletize up to 1200 sq. yds. of sod per hour. The harvester travels alongside, never on top of the turf, during harvesting. The machine is adaptable to all regions taking into consideration terrain, soil and sod conditions. Operator has clear visibility of all operations at all times, field grading of sod is done on the move, field conditions are easily and quickly adjusted for, while in operation, with hydraulic controls.

The NUnes Sod Harvester is the solution for growers looking for a proven way to quickly and economically harvest sod. If you can cut turf with any standard sod cutter . . . our machine can pick up and harvest it!

For more information please contact:

THE JOHN NUNES MECHANICAL HARVESTING CO. 2006 Loquot Ave., Patterson, California 95363, Phone (209) 892-8776



# Send us your lake and we'll tell you how to weed it!

Whatever size (or kind) of lake or pond you've got, we've got a way to weed it. We have the know-how, the chemicals and, if needed, the applicating service to kill the weeds but keep the fish.

And we've got aquatic weed specialists standing by to help.

In case you don't know us (that's possible !)

... we've pioneered in the development of weed control chemicals, and are leaders in applicating service nationwide. That should qualify us!

To get the help you need, just fill out the coupon below with the kind of weeds that trouble you. And the kind and size of your troubled lake.



For More Details Circle (116) on Reply Card



Railroad sidings (1) and security fences (2) are among the many locations where unsightly vegetation is a problem. Other locations in a typical plant where weeds can cause trouble are warehouses (3) tank areas (4) pipelines (5) ditches and roadsides (6) parking lots (7) storage areas (8) signs (9) around buildings (10) and loading docks (11). Take advantage of this market opportunity by selling "Hyvar" X, "Hyvar" X-WS bromacil weed killers or a product containing bromacil.

# These 11 spots are potential trouble... they can mean more profit for you with Hyvar<sup>®</sup> X bromacil weed killers

There is expanding business and profit in selling Du Pont "Hyvar" X and "Hyvar" X-WS bromacil weed killers or products containing bromacil. They get rid of weeds easily and effectively. The potential market is great. Use of these weed killers can stop equipment losses, protect inventories, reduce fire hazards, increase operating efficiency, and keep up "the good housekeeping look."

For more information on Du Pont bromacil weed killers, clip and mail the coupon today.

With any chemical, follow labeling instructions and warnings carefully.



DuPont — Industrial and Biochemicals Dept. Room N-2533-63, Wilmington, Delaware 19898

Please send me more information on "Hyvar" X and "Hyvar" X-WS bromacil weed killers and other Du Pont weed killers.

| I vanie |          |
|---------|----------|
| Title   |          |
| Firm    |          |
|         |          |
| Address |          |
| City    |          |
|         |          |
| State   | Zip Code |

# Special for This Issue

| <b>The Davey Tree Expert Company</b><br>A report on the original tree care company, and how it<br>maintains quality control despite far-flung operations.     | . 8  |
|---|------|
| Monster of Stockbridge Bowl<br>Aquatic weeds nearly destroyed a lake and a community before<br>Allied Biological Control Corporation found an effective cure. | . 14 |
| Science of Mowing<br>There's a relation between the characteristics of grasses<br>and mowing, says J. R. Watson of Toro Manufacturing Company.                | 22   |
| Lubricate or Languish<br>That's the choice you have when it comes to taking care of<br>equipment, says Stan Metsker, golf course superintendent.              | 26   |
| Sod Winterkill Is Extensive<br>Losses in the Great Lakes region point to a sod shortage until 1971.   |      |

# **Regular Features**

| Editorial: You Are Where the Action Is | 6 |
|--|---|
| Meeting Dates                          |   |
| Sod Industry Section                   |   |
| New Products                           |   |
| Classifieds                            |   |
| Advertisers' Index                     |   |
| Industry People on the Move            |   |
| Insect Report                          |   |
| Trimmings: What's in a name            |   |

# The Cover

Dale Nevin easily and safely trims the tall trees in a residential section of Kent, Ohio. An employee of the Davey Tree Expert Company, Nevin is on a line-clearing job for Ohio Edison Company. He's working from the insulated bucket of a Hi-Ranger, manufactured by Mobile Aerial Towers, Inc., Fort Wayne, Ind., one of several units recently added to Davey's massive array of equipment. A story about the Davey Company begins on page 8.



WEEDS TREES AND TURF is published monthly by The Harvest Publishing Company. Executive, editorial: 9800 Detroit Ave., Cleveland, Ohio 44102.

Single Copy Price: 50 cents for current issue; all back issues 75 cents each. Foreign \$1.00.

Subscription Rates: WEEDS TREES AND TURF is mailed free, within the U.S. and possessions and Canada, to qualified persons engaged in the vegetation care industry and related fields in controlled circulation categories. Non-qualified subscriptions in the U.S. are \$7.00 per year; Canada and other countries, \$10.00 per year. Controlled circulation postage paid at Fostoria, Ohio 44830.

© The Harvest Publishing Company, 1969

**Member Business Publications Audit** 





Volume 8, No. 6

June, 1969

Gene Ingalsbe Editor

Alis Anthony Editorial Assistant

Arthur V. Edwards Editorial Director

A. J. Michel Advertising Production

Hugh Chronister President and Publisher

Dan M. Humphrey Vice-President, Advertising

> Roy Bever Director of Circulation

#### ADVERTISING SALES OFFICES

Cleveland, Ohio 44102 9800 Detroit Ave./216+631-6468 William Schmunk, Mgr.

Chicago, Illinois 60601 333 N. Michigan Ave./312+236-9425 Richard Scrymiger, Mgr.

> Shawnee Mission (Kansas City), Kansas 66202 6811 W. 63rd St./913+722-5900 Austin Schnacke, Mgr.

New York, New York 10017 757 Third Ave./212+421-1350 Herbert Laager, Mgr.

Columbus, Ohio 43212 1350 W. Fifth Ave./614+486-9638 Gilman Calkins, Mgr.

Lansing, Michigan 48906 4415 N. Grand River/517+372-5254 Paul Bundschu, Mgr.

Los Angeles, California 90005 The Eschen Company 3142 Wilshire Blvd./213+382-8391 Henry Eschen

> San Francisco, California 94104 The Eschen Company 57 Post St./415+781-7440 Al Pierce

# You Are Where the Action Is

#### EDITORIAL

We send this magazine to you because we think the information in it will be helpful as you pursue your profession or conduct your business. Is it?

Unless you instruct us differently, we intend to continue these editorial objectives:

—To inform you as early as possible about new and improved products you can use;

—To bring you the results of university, industry, and governmental research in your field of interest;

-To report on the activities of the professional associations within the vegetation care industry.

—To keep you posted on legislation that your industry needs and legislation that might unnecessarily restrict your operations.

—To provide a forum for idea exchanges on labor problems, management practices, operating techniques, profit-making, merchandising, community relations, and other subjects.

How well we accomplish that last objective is pretty much up to you.

What goes on in the laboratory or the field test

plots is important. But the real action is where you are.

You decide whether a chemical, an application technique, a piece of equipment, or a management technique is really effective—and practical.

Your evaluation needs to be disseminated. The laboratory researcher and the industry engineer have the "news release" system to spread the results of their efforts.

You have a system, too, if you'll use it—letters to the editor of WEEDS TREES and TURF magazine.

We thrive on letters. No letters is like making a phone call, hearing the ring, hearing the receiver picked up . . . and then nothing.

If an idea has worked well for you, let us know. We'll circulate it. Your reward, most likely, will be something from someone else that you can use.

So the over-all purpose of this magazine is for us to communicate with you, and you with us, and each of you with each other.

No one of us is wiser than all of us together. Why shouldn't we all benefit from our collective knowledge?



#### WEED & BRUSH CONTROL PLANNER

#### **Timing Is Everything**

Throughout 1969 we have been recommending specific chemicals for specific problems at specific times of the year. Our point has been — and will continue to be — that there is a best time of year and a best chemical for getting effective weed and brush control.

The key words are "effective control". If you have already applied "economical" chemicals and yet weeds and brush are still a problem, there has been no economy. You will have to re-apply, which will double your costs for both chemicals and labor.

If you have applied Amchem's specialized herbicide products when and as directed, however, you have effective control. And that is what economy is all about.

Tip: In the North, add the systemic, translocating chemical, Amizol<sup>®</sup> to your tank mix, to kill late-appearing, perennial weeds. In the North or South, if you did not get rid of crab grass or johnson grass in April, add Fenac<sup>®</sup> to your present spray and get long lasting residual kill.

AMCHEM PRODUCTS, INC. AMBLER, PA.



See your Amchem representative for an individualized, month by month prescription for your weed control problems.

First name in herbicide research

For More Details Circle (101) on Reply Card

WEEDS TREES AND TURF, June, 1969



# The Mitts & Merrill Brush Chipper ... most efficient way to reduce branches, limbs, brush

#### These exclusive features:

- Staggered knife pattern . . . means more cuts per revolution, smoother cutting action, smaller chips of uniform size (reusable as mulch)
- New folding feed chute extends to 60" overall length, eases maneuverability and protects cutting chamber.
- Reversible knives . . . give you twice the service between sharpenings; also self-adjusting with positive lock pin to prevent throw-out
- Heavy duty construction . . . coil spring, torsion type suspension; all tubular steel trailer frame
- Torque converter . . . available on all models

For complete information and list of specifications, contact dealer nearest you or write us direct.



#### There's a Mitts & Merrill Brush Chipper dealer near you — ready to serve.

MICHIGAN, Detroit

ARKANSAS, Little Rock ent & Supply Company ody Equip CALIFORNIA, Los Angeles SABCO CALIFORNIA, Sacramento Action Equipment Company COLORADO, Commerce City Macdonald Equipment Company CONNECTICUT, Stamford Muench Company, Inc FLORIDA, Jacksonville Florida Equipment Co. of Jacksonville ILLINOIS, Rosemont Illinois FWD Truck & Equipment Company ILLINOIS, Springfield Drake-Scruggs Equipment, Inc. LOUISIANA, Baton Rouge General Equipment, Inc. MASSACHUSETTS, Needham Heights E. J. Bleiler Equipment Co., Inc.

actors Machinery Company MICHIGAN, Franklin Cannon Engineering and Equipment Co. MINNESOTA, Minneapolis TENNESSEE, Memphis Road Machinery and Supplies of Minneapolis, Inc. Utilities Equipment Company, Inc. NEBRASKA, Omaha Omaha Body & Equipment Company NEW HAMPSHIRE, S. Merrimack Consolidated Utility Equipment Service, Inc. NEW JERSEY, Lodi Dianem Company NEW YORK, Masapegua Park, Long Island Equipment Sales & Service Co. NEW YORK, Albany R. B. Wing & Son Corporation NEW YORK, Syracuse State Equipment Company, Inc NORTH CAROLINA, Charlotte er Equipment Engineering Company OHIO, Massillon, Karl Kuemmerling, Inc.

OKLAHOMA, Enid Bert Smith Road Machinery Co., Inc. **OREGON**, Portland Cal-Ore Machinery Co. UTAH, Salt Lake City Truck Equipment Sales Company VIRGINIA, Richmond Baker Equipment Engineering Company WASHINGTON, Seattle Sahlberg Equipment, Inc. WISCONSIN, Brookfield Utility Equipment Company CANADA, Cooksville, Ontario A. E. Joslin Machinery & Equipment Limited Winnipeg, Manitoba Howard F. Powell (1963) Limited Montreal, Quebec Aird Equipment Limited

or contact Mitts & Merrill, Inc., 109 McCoskry St. Dept. WT-79, Saginaw, Michigan 48601

For More Details Circle (115) on Reply Card



How a leader operates

# The Davey Tree Expert Company

"The original and largest complete tree service organization . . ."

WHILE the claim to being largest, depending on definition, may be disputed, the descriptive phase is reason enough to write about The Davey Tree Expert Company.

Founded in 1909 in Kent, Ohio, it operates in 42 states and Canada with nearly 2000 employees, and is expecting sales this year of \$19 million.

The name means what it says, The Davey Tree *Expert* Company, whether the *expert* refers to "tree" (and know-how about other services performed) or to "company" as an opinion of how the business is organized and operated.

Davey's varied operations can be grouped into three categories: utility services represent 60% of the volume; tree care 35%; and landscaping and miscellaneous services the remainder. Many projects include work in more than one category.

Davey men move easily and comfortably in the highest echelons of industry and government. Yet the Davey reputation rests finally with the men who wrestle the rugged brush country, swing skillfully in the trees, and tread delicately over commercial and private lawns. That has been the story since 1909.

Eight years earlier, according to Davey President Alexander M. Smith, founder John Davey published a book, The Tree Doctor.

"He wanted to interest people in preserving trees," Smith said, "for from the time pioneers settled the country, they had toiled to cut down trees. In some respects, the pioneers considered a tree a nuisance as they worked to clear the land to farm."

As early as 1880, founder Davey had spoken of his then revolutionary idea of preserving trees by scientific care. From the time he had arrived in America in 1873 from his native England, Davey had been appalled by the neglect and abuse of trees, and by the seeming indifference toward their ailments.

He wrote his book on the principle that trees are living things, and, with proper care, the life of a tree could be prolonged at least for a span that far exceeded human life.

"The first reaction he got from the book," said Smith, "came from people who couldn't see themselves climbing around in trees. So they ask John Davey to take care of their trees for them.

"And that's about how the company got started."

An early question that comes to mind is: How can a company of this nature achieve uniformity in the quality of products and services? Operations are far-flung, and hundreds of men work pretty much individually and independently of each other as they collectively build the corporate reputation.

The answer comes in a number of parts. Among them:

—a required training course for personnel working in the field;

—written procedure guides for the variety of services performed; —standard billing rates;

-continuing quality control re-

search on all products used; and —a supporting administrative staff well-versed in field operations.

"Practically, every man working in the field has gone through our school, or else works directly under a man who has," said J. W. Joy, vice-president in charge of sales.

#### **First Training Center**

Joy was speaking of the Davey Institute of Tree Service in Kent, the first school of its kind. Company photographer Dick Birkner's albums are filled with hundreds of photos of graduates since the institute was begun in 1909.



There is ample evidence of the Davey spirit in those early days among students beyond learning the fine points of their chosen trade. Albums contain picture after picture of athletic teams — basketball, boxing, baseball, fencing, wrestling. Extra-curricular in some respects, this type of program had its merits. It helped develop able-bodied men, the kind Davey Company is having increasing difficulty finding today.

"We're feeling the effects of the war in Vietnam and the related manpower shortages as are many companies," said Bert Stamp, vice-president for field operations.

Times change, and emphasis is less on athletic competition, but learning the Davey trade is as intensive.

New men, whether they lack a high school diploma or hold a col-

lege degree, start with the apprentice school. They learn *exactly* how a Davey man ties knots and uses a rope; climbs a tree; prunes a limb; repairs a cavity; cares for tools; identifies leaves, twigs and insects; directs a spray stream; feeds brush into a chipper; maneuvers a back hoe or an aerial bucket.

Some men continue their training through a 10-lesson extension course that qualifies them to attend foremanship school.

For the most part, the institute subject matter is technical. Foremen do get sessions on salesmenship, complaint handling, administrative reporting, and employment practices.

Joy readily concedes that Davey foremen, district managers and area representatives are technicians first and salesmen second. Davey leadership is shown at left, at the beginning and present. In the foreground are Alexander M. Smith, left, president, and Martin L. Davey, Jr., chairman of the board. Portraits in the background are those of founder John Davey, right, and successor, his son, Martin Davey, Sr., who served in a number of federal and state legislative posts, including governor of Ohio from 1935-39.

"When businessmen or homeowners call a Davey man, they don't expect a salesman, they expect a consulting arborist," he said.

#### 42 'Profit Centers'

Davey's field organization is similar to that of most large companies. Larger territories usually have a supervisor and district manager, a general foreman, and any number of foremen in charge of the crews. Smaller territories may not have a general foreman and the supervisor and the district manager may be the same person.

The top man in each of the sales territories works solely on commission, "so you might say we have 42 profit centers," said Joy.

"We establish policies and work procedures in detail," Joy explained.



"We planted a forest (1700 trees) in Arlington National Cemetery in 1968," reported Ted Baer, assistant sales manager, in giving an example of Davey customers. Landscaping jobs have included the Deere & Company Administrative Center in Moline, III., and the grounds of four state capitals. More than 30,000 diseased elms have been removed for the City of Buffalo, N.Y. And the new "Bombardier," a tracked vehicle, masters the rugged terrain of rights-of-way spraying jobs for big utilities, such as Duke Power, Consumers Power and New England Power.



Davey crews vary in size according to requirements. The crew above displays its standard equipment.

"Procedure manuals are furnished to every foreman, some 600 of them.

"Standard billing rates cover everything we do. We review them once a year, consulting with the district manager. All billing is handled from the main office."

While men in the field handle most bidding, larger "house jobs" are bid by the home office. Examples are a recent project in Arlington National Cemetery, lineclearing for large utility companies, and certain specialized operations.

"We still contract some new business on the basis of bid," Joy said, "but as customers get to know Davey work, we change to time and material. I would say that 70% of our resale work is on this basis."

#### **Advertising Coordinated**

A full battery of promotional material flows regularly from the home office at 117 S. Water St., announced inconspicuously by a simple 18 x 4inch metal plate on the door.

"We maintain an 80,000-name list of home-owners and contact them by direct mail to solicit their continued tree-care business," said Advertising Manager Henry Schmid.

Yellow-page advertising goes in about 200 books. "We've found that about half of the people have a name in mind when they look for a service, so we feel that being there is most important," Schmid explained.

Hopefully the listing will be connected with Davey's national advertising program.

Though the "front door" is almost hard to find, there is ample living evidence of the Davey Tree Expert Company around Kent — known as the Tree City.

Sizable portions of Kent's residential area look like those of any other city, except for one thing —

Major servicing and customizing of \$3 million worth of Davey equipment is done in a 28,000 sq. ft. shop in Kent, completed last fall. Al Stress, right, directs the efforts of 22 men. The shop is equipped to handle everything from sharpening hand saws to overhauling trucks and cranes.



many of the trees are growing in neatly arranged rows.

"I helped plant one of those," said Schmid, as we drove through one area. "I used to work in the field, and part of the school training is to learn how to plant trees.

"Most of our supervisory people in the home office actually did tree work to begin with. They came up from the field. In the operations end of the business, it's helpful to know how the field work is done."

When the Davey company takes great pains to develop a specialty, whether it's manpower, resources, or equipment, it also goes to extra effort to maintain that specialty.

#### **Employee Benefits Varied**

To keep its skilled manpower, for example, the company offers a complete benefits program, to include insurance, retirement, and savings plans. It maintains a 35-acre park with fishing and picnic grounds for employees in Kent and provides a scholarship program at Kent State University for employees' children.

The Davey Bulletin, monthly employee magazine, is in its 58th year. Editor George Galloway counts among his contributors "All Davey Folks."

Concerning resources, Davey has a research farm and nursery stock near Kent and a 40,000-tree nursery at Wooster, Ohio.

#### Vast Equipment Array

Davey's biggest expression of intent to preserve an asset is a new \$250,000 Kent service center, completed last fall. The 28,000 sq. ft.

# STIHL O41AV electronic

In keeping with our policy of offering the most advanced and most dependable in chain saws – we have incorporated solid state ignition into the STIHL 041 AV Electronic Saw. Other than eliminating the need for points and providing a molded circuit that is impervious to moisture, dirt, and temperature extremes — this model offers big horsepower output coupled with a light 12½<sup>\*</sup>pound weight and the fabulous new vibration absorbing AV handle.

first and only lightweight chain saw with built-in shock absorbers plus solid state ignition



# STIHL American, Inc.

194 Greenwood Ave., Midland Park, N. J. Phone 201-445-0890

lectronic

7364 Lee Industrial Blvd., Mableton (Atlanta), Georgia

Less bar & chain

2468 Teagarden Street, San Leandro, California



In an "indoor forest," students at the Davey Institute of Tree Service, the first training center of its kind, are learning how to repair a tree cavity.

shop-warehouse is on a 10-acre site that may one day include a new headquarters building.

Twenty-two men work yeararound, under the direction of shop foreman Al Stress, to do the major servicing of its massive array of equipment.

At last count, it stood at: more than 700 trucks (half-ton to threeton); more than 300 brush-grinding chippers; 244 shade tree sprayers (truck mounted); 58 tractors; 815 power chain saws; some 5000 hand saws and pole pruners; and 275 electric drills. In addition, some of the 600 foremen have their own trucks. Davey crews are supplied with at least 160 varieties and sizes of tools.

Essentially, the Kent shop-warehouse customizes new equipment, to include Davey identification; does major equipment overhaul; and builds special equipment. The shop features seven truck-repair bays, welding shop, chain saw shop, paint shop, sandblast  $r \circ o m$ , spray pump area, carpenter shop, and two crane repair bays. The building's 11 doors include two 14footers to handle truck-mounted cranes and aerial bucket units.

"We keep a repair record of everything that goes through here," said Al Stress. "That way we can tell when one unit is costing us \$5.50 an hour while another is running for half that."

Davey has four other smaller maintenance shops, but regular servicing is usually done in the area where the vehicles operate.

#### **Materials Evaluated**

Evaluation research goes on constantly under the direction of Bill Jeffers, vice-president of research and development. Jeffers' specialty is weed and brush control; his technical adviser, Henry Gilbertson, has a master's degree in plant pathology.

"We try to insure that the products we purchase are up to standard and will do what the manufacturers say they will do," said Gilbertson.

"We evaluate new materials from chemical companies before they're on the market to see how they might work into our control program. Tests are under way now on slow-release fertilizers for trees."

"We receive samples (300 a year) from all over the country from our field men of their insect troubles or disease problems. We'll run a culture and then recommend, if possible, how the problem can be controlled."

Continuing quality - control research goes on concerning the products manufactured for Davey and that are sold under the Davey label. These include Davey Tree Food, Arbor-Green (an organic tree food), and Davey-Green Lawn Food.

A study is going on now of an infra-red instrument that is supposed to have the capability of detecting faults or a "hot-spot" along utility lines. It also detects pollution in lakes and rivers. This kind of work is an example of the on-going search, President Smith spoke of, that the Davey company will do to broaden the services that the company provides. As another example, he said Davey is doing some cable-burying work for utilities.

Smith is optimistic about the future, citing a "growing awareness on the part of the general public and utility companies" for preserving and beautifying the plant environment around them.



Employees have a wide range of experience, having worked in a number of jobs over the years. F. H. "Whitey" Myers, left, an employee since 1926 and who sharpens hand saws at the rate of 1500 a year, has helped train dozens of Davey students. At right, 12-year employee Henry Schmid strolls through a residential area near Kent enhanced with trees planted by Davey men as part of their training. Schmid once worked in the field, went through the school, and helped plant one of the trees in this grove.

# The second state of the se

anye

Extend the safe transplant season through summer, winter, any time the ground isn't actually frozen. WILT PRUF Anti-Transpirant protection costs just pennies a plant. Thousands of growers, nurserymen, landscapers, ground maintenance men and foresters use WILT PRUF to minimize losses from transplant shock, winter kill, summer scald, city air pollution. Write on your letterhead for 50-page technical manual of applications.



NURSERY SPECIALTY PRODUCTS, INC. / 410 Greenwich Ave., Greenwich, Conn. 06830 (203) 661-5840

#### By JASON M. CORTELL, Consultant Biologist Allied Biological Control Corporation Wellesley Hills, Mass.

Lake Mahkeenac in western Massachusetts became covered with such a lush carpet of aquatic weeds that the community around it was nearly killed before the problem was whipped. The monster was Eurasian watermilfoil (Myriophyllum spicatum) shown below.





# The Monster Of Stockbridge



**S**<sup>O</sup> CLEAR AND CLEAN were the waters of Lake Mahkeenac, also known as Stockbridge Bowl, that, until the turn of the century, it was called the Mountain Mirror.

It drew vacationers, visitors and admirers from far beyond Massachusetts' borders year after year. Before mid-century had been reached, however, the natural beauty of the 375-acre lake had disappeared.

The proud lake and its community

were being choked to death by a lush carpet of aquatic weeds.

The community, which serves as the summer home for the Boston Symphony Orchestra as well as the Stockbridge Bowl Association, was of course deeply concerned.

The once beautiful lake was now being described as "a hideous eyesore," "a swampy morass, useless as a bathing, boating and fishing area," "a murky puree of weeds and mud." And it was, in fact, growing to fit that description.

Several member organizations of the Bowl Association, the Mahkeenac Boat Club, the Stockbridge Parks and Playground Commission and the Sports School Day Camp, took action by employing skin divers to pull out weeds by hand.

#### **Community Declines**

For ten years or more, the lake was all but unusable due to the overgrowth of weeds and water plants. "For Sale" signs began to appear on homes around the lake.

Despite local opposition to the use of chemicals, in 1960 the Bowl Association contracted to have the lake sprayed with an arsenical herbicide. The experiment was ineffective, but



was tried again the following spring with better effect.

The following year, conditions seemed to have worsened; weeds were more abundant than before the spraying had been done, and critics of the operation became increasingly more vocal. Some maintained that only smaller growth had been killed, making room for the profuse growth of more virulent weeds along the bottom of Lake Mahkeenac. Others said snails had been killed, which decomposed and encouraged more weeds. Some wanted to put Japanese carp into the lake to take care of the growth "naturally."

State Sanitary Bio-Engineer Mario Boschetti stated that weeds were more abundant in Stockbridge Bowl due, possibly, to the unusually long spring of 1963. He said that once there is weed growth in a lake, the prospect for increased growth is greater, since existing weeds create fertilizer for future growth.

He added that algae flourished in the kind of weather then being experienced . . . "real hot spells with a great deal of sunlight." Followed by several dark days, as happened, the algae would make huge demands on the oxygen content of the water and could, in effect, cause fish to suffocate.

While the controversy raged, the Bowl became even more choked by weeds in 1964. The Stockbridge Park Commission, responsible for maintaining the town beach, used a mechanical device to remove more than two truckloads of weeds from the swimming area.

The device, an angle iron attached to a cable, was rowed out to the end of the area and dropped into the water. The cable was then pulled into shore by a Jeep, dragging the angle iron with its load of weeds to dry land.

Mechanical removal, while producing immediate results, proved to be extremely costly and time-consuming and soon after was discontinued.

#### Allied Biological to Rescue

At this point, the director of Camp Mah-Kee-Nac, Joseph Kruger, contacted Allied Biological to survey the lake, determine the weed problem and the chemical make-up of the water, and to prescribe a control program.

Our report was that the major problem at that point (though it had been a secondary one in 1960) was Eurasian watermilfoil (*Myrio-phyllum spicatum*).

The submerged weeds had indeed grown profusely and formed large masses around the perimeter of the lake. Though rooted, they are easily dislodged, and many had washed ashore in large numbers interfering with bathing, boating and fishing, and causing an odor nuisance upon decomposition.

Many of the local people who had previously dealt with watermilfoil at the Bowl felt this problem was impossible to control, that the only alternative was to live with it, or else restrict water activities to areas not yet infested.

#### Unique Approach Needed

We knew differently, but realized the Stockbridge Bowl problem could not be solved by conventional methods. Working with Amchem Products, of Ambler, Pa., we agreed on a new approach for tackling the job. Because of the great depths involved (22 feet average depth), a liquid herbicide would, at least initially, be costly and possibly hazardous to fish.

We were convinced that by using a new granular herbicide called Aqua-Kleen 20, the problem could be solved without endangering wildlife. Camp Mah-Kee-Nac's director agreed to finance our plan to fieldtest the bottom-release granular chemical.

We began the experiment on a two-acre plot in front of the camp. The trial run proved so successful, an additional 15 acres around the cove at the upper end of the Bowl, were approved for treatment by the State Department of Public Health.

Strangely enough, local opposition to the use of chemicals in the lake grew even louder.

But biologist Boschetti, heading the State Public Health Aquatic Weed Control Section, decreed the spraying operation as safe, and this

(Continued on page 18)



For More Details on Following Page Circle (106) on Reply Card 🌢

# Mower knives thin enough to fine-cut...thick enough to resist breakage

Worth more when you buy, use, trade



#### International 70 flail mower with 2444 Lo-Boy tractor

Many purchasing agents insist on the safety of a flailtype mower to eliminate the hazards of thrown debris.

International 7-foot flail mowers not only offer greater safety by driving debris down toward the ground, not out—but give you a good grass-grooming job as well. Easily reversible double-edged knives are thin enough to fine-cut grass which sifts down as fine particles. Yet they're thick enough to resist breakage from cans, stones and sticks.

Mower safety is assured by the husky contoured housing, formed and bead-welded to the heavy frame. A thick rubber safety curtain at the rear discharge end makes sure debris is deflected to the ground. Unlike canvas, this curtain resists ripping, rotting or shredding.

The mower is powered by an International 2444 Lo-

Boy tractor with a  $43\frac{1}{2}$ -hp diesel or a 47-hp gas, 4cylinder engine. This tractor is famous for its short,  $8\frac{1}{2}$ -foot turning radius and low, 50-inch profile. Choose your transmission: standard Hi-Lo with 8 speeds forward, 2 reverse or optional 8 and 8.

See your International dealer for all the details on 70 flail mowers and 2444 tractors—plus IHCC credit plans that easily dovetail with your purchasing program.



International and Lo-Boy are registered trademarks of International Harvester Company, Chicago 60611.

Double up with International 2444, flail mower and 110 hydraulic drive side-mounted mower.



#### Monster of Stockbridge Bowl

(Continued from page 15)

became a prime catalyst in the decision to undertake the extensive Bowl project in 1965.

A special act of the State Legislature provided the necessary funds to begin work on reclaiming the rest of the 375-acre body of water.

In June 1965, ten tons of the granular Aqua-Kleen (20% 2,4-D) were applied to Lake Mahkeenac at a rate of 100 pounds per acre, utilizing a newly developed Aeri-Blower. Three days were used for the entire operation, and in the relatively short time of only four weeks the lake was clear again for the first time in perhaps 20 years.

Together with Boschetti, a complete post-treatment biological survey was conducted early in September, 1965. Our survey showed that 95 percent of the watermilfoil growth in the Bowl had been killed, and the few remaining patches of weeds showed signs of disintegration.

Needless to say, the results were extremely encouraging. They proved that our method and type of program could be carried out without endangering the public or wildlife.



Allied Biological Control Corporation determined that its aircat airboat method of spraying liquid herbicide, as is being done above, would not be practical because of the lake's depth . . .

#### **Community Awakens**

"For Sale" signs have disappeared from around the lake and renewed vacation home building is taking place. But work on the Bowl is far from completed. The aquatic weed problem has not been eliminated. but it is now under control.

Under a state supported program, surveys and spot-treatments are being carried out annually. New species, such as pondweed (*Potamogeton*), are being attacked as soon as they appear.

#### LETTER TO THE PUBLISHER

# Air Pollution Negligible From Burning Wood

I'm writing with reference to the April article regarding the burning of wood, brush and leaves, by William H. Bartles of Hyde Park, N.Y.

He is not alone on this subject. We of the Fairmount Park Commission of the City of Philadelphia are confronted with the same problem. I have been under the same impression that the burning of these materials is of little, if any, contamination of the air.

Certainly a chipper is not the answer, since this equipment is designed for grinding up brush or wood and the chips used as a mulch.

In my opinion, an analysis of the actual, if any, smoke from the burning of these materials should be made to determine the chemical content, whether poisonous or non-poisonous.

We run into the problem of tree diseases, such as Cankerstain of Plane and Dutch Elm Disease. The recommendations are that the trees be disposed of by burning.

I would like to quote from the book, "Trees," by Andreas Feininger, published in 1968:

"Wood certainly does not look as though it is made of water and air — it is neither liquid nor gaseous but heavy, substantial stuff. Nevertheless, that these are the components of wood can be proved easily by burning wood in a fireplace.

"At the end of several days of burning and the consumption of perhaps a 100 pounds of wood, all that is left is a few handfuls of fluffy, almost weightless ashes — the mineral components of the tree. The 'substantial stuff' h as burned.

"Since well-seasoned logs are relatively dry, already having lost most of their water content through evaporation, what is left — the dry wood — must have come from the air. "It is indeed carbon, which the tree has taken from the atmosphere in the form of carbon dioxide and used to build its tissues. During the burning process this carbon combines once more with oxygen to form carbon dioxide and escapes into the air as a gas, returning to the great reservoir from which it came."

Air pollution certainly is a serious problem and should be dealt with by the proper authorities. I believe the burning of the aforementioned materials is of very little consequence, but disposal by other methods is certainly a very large problem.

I would like to congratulate you on your magazine and I look forward to every issue. I do hope that more people will show an interest in the burning of wood, and so forth, and a solution will be reached. — **BRUCE M. HUNTER**, Park Arborist, City of Philadelphia, Pa.



... and instead pressed into service a newly developed Aeri-Blower to apply a granular herbicide that would sink 22 feet to the bottom. Ten tons of Aqua-Kleen (20% 2,4-D) applied at the rate of 100 pounds per acre cleared the lake for perhaps the first time in 20 years.

John E. Gallagher, the Amchem research coordinator who worked on the project, observed that "The achievement of the program is notable in that the lake is now well on the way to being reclaimed."

Similar undertakings can be handled just as effectively in other parts of the country. Before attempting them, however, several important points should be taken into consideration.

Proper use of herbicides is vital, and should be left to professional aquatic applicators to handle. Selecting the proper chemical for the particular problem is equally important, and again, should be left to the experts. Results can be bad, if not disastrous, if these basic points are overlooked. Getting community approval of the project is very important; convincing the public that the



operation is safe and that it will bring good results.

A combination of factors contributed to the success achieved by Allied Biological at Stockbridge Bowl, including the cooperative efforts of state and local officials, lake association and chemical manufacturer.



For More Details Circle (105) on Reply Card

# Who'd want this rotten job?

A MARY MAR OIL IN

HELP WANTED

Weed-control crew

\* No weekends off \* No evenings off

\* No vacations \* No sick leaves

for industrial lawns

and landscaped grounds

\* No lunch hours · No cottee breaks

· No benefits

And you'd better be good!



# We would!

It's harder to find competent personnel. It's more expensive to keep those you've got. Why not free-up your help for more productive work? Let Elanco's pre-emergence weed control crew efficiently and economically stop troublemakers before they get started.

DEPENDABLE WEED GRASS CONTROL IN TURF. Balan<sup>™</sup> granular gives you complete control of virtually every one. Crabgrass, Poa annua, goosegrass (crowfoot or silver crabgrass) barnyardgrass, foxtail—killed as they germinate. Balan holds fast through rainfalls and irrigations for months of effective results. And it offers a high degree of safety. Contains no poisonous arsenic, mercury or lead to create a hazard.

ALL-SEASON WEED CONTROL IN ORNAMENTALS. Use Treflan<sup>®</sup> around shrubs, trees and flower beds. It controls all annual grasses and many broadleaf weeds. Yet Treflan is gentle. The only herbicide you can apply right before planting new stock. And weatherproof Treflan won't leach out. Use it without fear of residue build-up. Available as liquid or granules.

WINTER WEEDS A PROBLEM? Dymid<sup>®</sup> can be used anytime to stop a wide range of weeds and grasses in ornamentals. But fall application has special advantages. Dymid controls chickweed and other winter-germinating troublemakers through early spring. Wettable powder or granules, whichever you prefer.

DICHONDRA AND ICE PLANT WEED CONTROL. In western areas, Dymid is widely used on ground covers. For continuous results apply Dymid every six months.

See your distributor and put Balan, Treflan, and Dymid to work. They'll whip your weed problems and free more time for jobs only people can perform.





(BalanTM—benefin, Elanco) (Treflan®—trifluralin, Elanco) (Dymid®—diphenamid, Elanco) Elanco's dependable weed-control crew.

ELANCO PRODUCTS COMPANY A division of Eli Lilly and Company Indianapolis, Ind. 46206, U.S.A.



By J. R. Watson, Director of Marketing Toro Manufacturing Corporation

GOOD MOWING practices are perhaps the most important single factor contributing to a wellgroomed appearance and the longevity of any turfgrass.

Grass cutting is perhaps the major time consuming operation in the maintenance of turfgrass. The manner in which grass is cut also will greatly influence its health, vigor and density. These factors, along with an adapted grass, proper fertilization, aeration and judicious watering will determine the ultimate quality of turfgrass. All are instrumental in the degree of weed invasion which may occur and, collectively, they control the overall appearance of the lawn.

An understanding of the basic growth habits and characteristics of grass is essential for the development of proper mowing techniques.

#### **Growth Habits**

On the basis of growth type, grasses may be classified into three general groups:

Bunch-type grasses, such as ryegrass and chewings fescue, produce new shoots which grow inside the sheaths of the previous stem growth. Stoloniferous grasses, such as bentgrass, spread by runners or stolons which develop from shoots that push through the sheath and run along the surface of the ground, rooting at the nodes (joints). Kentucky bluegrass, a rhizomatous type of grass, develops shoots at the underground nodes.

Some grasses, such as bermudagrass and zoysiagrass, spread by both rhizomes and stolons. This is one reason why bermudagrass is such a vigorous grower and is so difficult to control and keep out of flower beds, gravel walks and similar areas. There are, also, intermediate types with decumbent stems which root at the nodes, such as crabgrass, nimblewill and some fescues.

The grass leaf is adapted for intercepting a maximum of sun rays, which are essential for photosynthesis. The long flattened grass blades provide a maximum of exposure with a minimum amount of protoplasm, thus making efficient use of the living tissue.

A reduction in the plant leaf area exposed to sunlight reduces the plant's capacity to carry on photosynthetic activity. This is a vital and basic consideration in determining the frequency and height of cut of turfgrasses.

The ability of grasses to withstand frequent and relatively close cutting is related to certain peculiarities of the grass family.

Grasses exhibit basal growth, as opposed to terminal growth found in most other plants. Basal growth means simply that growth initiates at the base rather than at the tip of the blade or stem. From a practical standpoint, this means that normal and frequent mowing does not cut off the growing areas of the grass leaf. Removal of too much leaf surface at any one cutting may, however, destroy some of the growing points.

#### **Height of Cut**

The height at which a given perennial grass can be cut and still survive for extended periods is directly related to its ability to produce sufficient leaf surface for the photosynthetic activity required for its growth.

Basically this ability is related to the inherent type and habit of growth found in the grass. The length of internodes, the number of stolons or rhizomes, and the number of basal buds all influence the amount of leaf mass produced by a given grass; hence, affects its ability to withstand low heights of cut.

Creeping-type plants, such as bentgrass and bermudagrass, when properly fertilized and watered, are able to produce adequate leaf surface at very low heights of cut (3/16 inch). Buffalograss, although a creeper, cannot produce sufficient leaf mass at low heights because too few basal buds exist and, therefore, cannot withstand low clipping. For this same reason. Kentucky bluegrass and fescue must be cut relatively high (1 to 11/2 inches). If bunch-type grasses are cut close, too much leaf surface is removed, and the plant can no longer carry on sufficient photosynthetic activity to sustain satisfactory growth.

#### **Frequency of Cut**

Frequency of mowing also is an important consideration in the maintenance program. Infrequent clipping allows the grass to elongate to such a degree that any subsequent clipping removes an excessive amount of leaf surface.

At no time should clipping amounts in excess of 1/4 to 1/3 of the total leaf surface be removed at a given mowing on lawns.

Removal of large amounts of leaf surface will result in a physiological shock to the plant, cause excessive graying or browning of the leaf tips, and greatly curtail the photosynthetic production of food. While this may not seriously damage the plant, it does cause the lawn to look "butchered."

In addition, the accumulation of excessive clippings may smother the grass and provide excellent environmental conditions for disease organisms and insects. The frequency of clipping must be governed by the amount of growth, which in turn is related to weather conditions, season of the year, soil fertility, moisture conditions and the natural growth rate of the grasses.

#### Stage of Growth

The stage of growth of turfgrass plays a major role in mowing practices. Young tender growth in the spring is generally soft and succulent. The moisture content of young immature turfgrass is much higher than that of mature grass. Likewise, the fiber content of young grass is much lower that that of mature grass. Such a condition influences mowing practices.

Tender young grass must be cut with a sharp, well adjusted mower to avoid mechanical damage. The early growth must be cut frequently to avoid the problems associated with high moisture.

Mowing practices during the early stages of growth exert a material influence on density of turfgrass. Cutting at heights somewhat lower than normal during early spring will encourage lateral growth which, in turn, promotes density and helps prevent weed invasion. Such may cause a reduction in root depth and should not be continued indefinitely.

#### **Mower Selection**

Good mowers are characterized by high maneuverability, easy adjustment, durability and adequate horsepower for size and usage. In addition to these inherent design features, the ready availability of parts and service is important.

Two basic types of mowers are available—reel and rotary. Choice of a given type will be governed by the particular duties the unit will be expected to perform. Each type has certain advantages and limitations





For More Details Circle (111) on Reply Card

which should be carefully considered before final selection of a mower is made.

**Reel-type mowers** are always recommended for the cutting of formal and semi-formal turf areas, including golf greens, tees, fairways and lawns cut less than one inch. Reeltype gang mowers are, also, the most efficient and economical for mowing large open areas such as airfields and parks. The cutting action of the reel is like that of a pair of scissors.

Reels, when sharp and properly adjusted, give a clean even cut which cannot be equalled by any other type of mower. Certain kinds of grass should always be cut with reel type mowers. Bentgrasses and bermudagrasses used on putting greens are an example.

The use of reel type mowers may be limited in some turf areas because they require relatively smooth ground upon which to operate, and they will not cut tall, rank growing weeds. In addition, the cost of maintenance is somewhat higher that that of other types of mowers.

**Rotary mowers** are widely used. They are versatile and adapted for use on most home lawns. They are always recommended for rough conditions and on areas where control of grass, rather than appearance, is the predominant consideration.

Rotaries also may be used to grind up leaves, cut tall stemmy weeds, and to trim. The rotary cuts by impact similar to the cutting action of a scythe. For this reason, a sharp, properly balanced blade is necessary to avoid ragged tearing of the grass blade and to prolong engine life.

Cutting with a dull blade generally results in a graying and subsequent browning of the leaf tip. When selecting a rotary mower, give particular attention to the safety features, the type of blade and method of blade mounting, ease of adjustment and horsepower.

Power requirements—the highest of any type of mower—and scalping on uneven or rough terrain, are the major limitations of rotary mowers. The cost of maintenance is low on the rotary unit, although the cost of engine maintenance may be much higher than on reel units, particularly if the unit is underpowered or used under dusty conditions.

#### Washboard Effect

Turfgrass areas regularly cut with power mowers or gang mowers



sometimes develop a series of wavelike ridges running at right angles to the direction of mowing.

The development of this washboard effect may be prevented or partially remedied by regularly changing the direction of mowing (diagonal or right angles). Alternate directions of cut will partially control runners of creeping grasses and aid in the prevention of grain and thatch.

# Prison Inmates Study Plant Care

Horticulture and arboriculture are part of the curriculum of Stateville Penitentiary, near Joliet, Ill.

Arborist - humanitarian Archibald E. Price of Glenview, Ill., became interested in rehabilitative prison work eight years ago, when he volunteered to organize and instruct classes in plant care. Since then, class membership has grown from 17 to 140, and instruction covers a complete range of horticultural subjects from gardening to greenhouse care.

At the end of the 26-week course, Certificates of Completion are presented to those inmates who have finished the series.

Recently, Price received two awards recognizing his contribution to penal rehabilitation. These are the John Howard Association 1969 Award, and the Award of Outstanding Laymen in Correction, presented by the Illinois Probation, Parole and Correctional Association.

The latter reads: "Citation to Archibald Enoch Price, in recognition of his humanitarian contribution and deep interest in the correctional process throughout the State of Illinois penal system. The vocational training and guidance in the field of horticulture has been beneficial to a multitude of men returning to the community."



Archibald E. Price, left, Illinois arborist, presents Certificates of Completion to three men for their participation in the Stateville Penitentiary horticulture course. Price has been conducting a 26-week class in plant care at the Joliet, Ill., prison since 1961.



A very similar washboard appearance is often observed on turf areas, but is no fault of the mowing equipment or the operator. Many times land is plowed for seedbed preparation and not properly disked and leveled prior to seeding. Settling then takes place in the plow furrows and unevenness develops.

Such a situation may be reduced in severity over a period of years by heavy aeration followed by dragging. The dragging operation operation generally will remove most of the soil cores from the high areas and deposit them in the low areas.

#### Wet Conditions

Mowing wet grass should be avoided as much as possible, although available labor and time often make it impractical to do so. Dry grass cuts more easily, does not ball up and clog the mower, and gives a much finer appearing lawn. Timing tests show that mowing dry grass requires less time than mowing wet grass.

#### **Uneven Terrain**

Mowers are not built for grading purposes. Turf areas containing high areas which are continually scalped should be regraded so they may be cut properly and to reduce the wear and possible damage to mowing equipment.

Inadequate insect control can become a serious mowing problem. Areas heavily infested with earthworms or ants will have many soil mounds caused by their activity which will result in a poor appearing area and will cause damage to mowing units. Mounds of earth thrown up by gophers and other soil burrowing animals will have the same result.

#### **Improper Operation**

Irregular or uneven cutting often occurs from the bobbing motion of mowing units. This may be caused by mowing at excessive speeds or by equipment not built correctly for the grass it is cutting. This often occurs where the grass is extremely heavy or dense and the mower, because of insufficient weight and/or cutting ability, bobs up as the mower hits heavy grass.

On specialized areas, such as putting greens, bowling greens, lawn tennis courts, etc., improper handling of the mower on turns will result in turf damage through bruising and wearing of the grass.

#### **Terraces and Banks**

Terraces and banks offer a difficult mowing problem. Scalping generally will occur if the bank or terrace is mowed across the slope. Up and down mowing generally is the most satisfactory method of cutting these areas.



By STANLEY E. METSKER Golf Course Superintendent Boulder, Colo., Country Club

# Maintenance choice is clear:

# Lubricate Or Languish



Author Stanley Metsker, left, is getting lubrication recommendations on an H. D. Hudson Company sprayer from sales representative Cooper B. Baldridge of Memphis, Tenn.

ANYONE who is responsible for the care of machinery must know something about lubrication.

The life and service of a machine depends to a large extent upon the care it is given. It is a constant problem to see that each need is met with the proper lubricant at the proper time and in the proper amount. Results of neglect are expensive.

Lubricants generally are either an oil or a grease. An oil has four specific functions to serve in the modern engine. It must lubricate, seal, cool and cleanse. To perform its most important function, that of lubricating, the oil must possess three properties, the ability to:

- make surfaces "slippery;"

- adhere to metal surfaces;

— maintain a lubricating film between all friction surfaces under varying extremes of pressure and temperature.

Sometimes certain chemicals are added to oils to help take care of specific problems. These chemicals are called additives. Among reasons they are added are to:

- better protect bearings;
- resist oxidation of the oil;
- better resist wear;
- better disperse the oil;
- hold dirt in suspension
- (detergents);
- make the oil flow better;
- make the oil thicker;
- keep the oil from foaming;
- resist rust.

Fortunately most of us never have to worry about which additive to use. Oil companies make oils to do certain jobs and add the additives accordingly.

All you have to do to take advantage of these additives is to buy good oil from a good company in the MM or MS class. Oil classifications are explained later. Remember that oils for severe operating conditions will contain more additives than the oils for light duty and will therefore cost more.

#### **Detergent Oils**

Detergent oils are generally used in all but the lightest of engine applications. Detergents in oils dissolve gummy or resinous deposits and even more important they keep the minute solid particles formed by fuel and oil deterioration in suspension so they will be drained out with the oil change instead of being left in the engine.

A reasonable oil change practice is a money-saving practice. The secret to using these detergent oils to their fullest potential is to change them before they become overloaded with dirt. Because this type of oil keeps carbonaceous material in the crankcase in suspension, it becomes discolored sooner than would straight mineral-type oil. Oil color, therefore, looses its meaning as a means of determining oil cleanliness.

Detergent oil is not recommended for use if your engine has been in service for a long time using nondetergent oils, because the contaminants it loosens in the system by its purging action may cause plugging of the oil lines and oil pump screen, resulting in damage to your engine. Under normal operating conditions, oil should be changed every 100 hours in a tractor.

#### What API Ratings Mean

The American Petroleum Institute (API) lists the following motor oil classifications for gasoline engines:

- ML Light duty, favorable operating conditions for mild engines with no abnormal lubrication requirements.
- MM Moderate to severe operating conditions where deposits or bearing corrosion may be a problem when crankcase oil temperatures are high.
- MS Unfavorable or severe operating conditions where there are special lubrication requirements for deposits, wear, or bearing corrosion control, due to operating conditions or engine design or fuel characteristics.

Current automotive engine design and motorist driving habits would fall in the MS category. An MS type oil should be used in most tractors and even in most single-cylinder engines.

The Society of Automotive Engineers (SAE) classification indicates the viscosity of an oil. An SAE 10 would be thinner than an SAE 30 oil. SAE 10-20-30 can be used all year long.

In addition to the oils mentioned above, some of the following special use oils may be needed:

— Penetrating oil, for loosening tight nuts and bolts;

 Cutting oil, for making threads on pipes or bolts;

- Turbine pump oil, a highly-refined oil for turbine pump motors;

- Gear oils, for transmissions, differentials and gear boxes.

The best advice on how to take care of your machinery comes in the form of a booklet which is sent along with the machine. These instruction booklets should be kept for future reference.

The purpose of any lubricant is to reduce friction between two moving parts.

To keep two metal surfaces separated, the lubricant must keep the metal wet with oil and resist being displaced by pressure. A lubricating grease must also serve other purposes such as cooling, prevent corrosion and keep out contaminants. For most purposes a multipurpose grease can be used.

The Jacobsen Turf King triplex mower is a good example of a machine with many different lubrication requirements. The sealed bearing that acts as a V-belt idler for the belt running to the front reel never needs to be greased. In contrast, the bearings at each end of the shaft that hold the rollers for the mowing units need grease every four hours the machine is run. Other bearings on this machine need grease at other intervals.

#### **Follow Makers Instructions**

Each machine has definite needs and can only perform at its best when the manufacturer's instructions are carefully followed.

A WORD OF CAUTION: If you use water or steam to clean equipment, be careful about forcing water into bearings. It is a good idea to grease the equipment after washing to force water out of the bearings. Also, keep water out of the air filter.

Constant lubrication is necessary but over-lubrication is also bad.

Some men put so much grease into motors that they would fail from excess grease clogging up the windings. Over-greasing also can push out grease seals and let in dirt.

Following is a list of lubricants that you generally need for turfgrass equipment:

**Oils**—Motor oils of class MS. An SAE 30 oil for summer and a 10 or 20 for winter, or 10-20-30 year around. Outboard motor oil for two cycle engines. SAE 90 or 140 oil for gear boxes. Hydraulic oil. Penetrating oil. Cutting oil. Turbine pump oil. Other special oils for special cases.

**Grease** — Water pump grease is sometimes needed, but for most jobs a multi-purpose grease will do.

Lubrication is a job that must be done. When done right, you will have equipment that runs better, longer and cheaper. You must lubricate or languish in the mire of your own neglect.



# **TREEmen tell US!**

Owners and operators of HI-RANGER tree service equipment "wrote the book" that lists the features exclusive with HI-RANGER . . . \_ single hand 3-D bucket control, \_ automatic "deadman" safety system, \_ stronger, tapered upper boom, \_ power-reserve accumulator system, \_ constant-angle upper boom movement with straight-line bucket travel, \_ selfleveling bucket, and \_ maximum safety with faster, easier operation for more work at low cost.

#### TREEman's FACTBOOK

Read what owner-operators and cost-minded tree service men say. Get your copy of this book with the "inside" facts:





MOBILE AERIAL TOWERS, INC. Dept. N 2314 BOWSER AVENUE FORT WAYNE, INDIANA 46803 For More Details Circle (108) on Reply Card



At the recent 39th Annual Michigan Turfgrass Conference, Thomas H. Gauthier, right, (left picture) received the Certificate of Scholarship Award from the Golf Course Superintendents Association of America. Presenting the award was Norman Kramer, Association vice-president. The award was made for outstanding achievement in Michigan State University's turfgrass management course. The two-year technical course is offered by the University's Institute of Agricultural Technology. In the picture at right, Clarence Wolfrom received the third annual Meritorious Service Award. Frank Forier, right, and James Standish, Michigan Turfgrass Foundation president and executive secretary, respectively, made the presentation. Wolfrom was honored for his contribution to Michigan's turfgrass industry.

## Six States' Growers Form Midwest Turfgrass Assn.; Joe McDermott Is President

Growers from six states have formed the Midwest Turfgrass Growers Association, with headquarters in Kansas City, Mo.

Representatives from Nebraska. Missouri, Illinois, Kansas, Iowa and Colorado organized at a meeting Apr. 22 in St. Joseph, Mo.

The regional group is "not a substitute for the national organization," explained elected president Joe McDermott, Loveland Lawns, Omaha, Neb. Rather, he added, it is a step toward an organized approach to dealing with problems unique to

#### **New WTT Staff Member**

Alis Anthony joined the staff of WEEDS TREES and TURF magazine on Apr. 14 as an editorial assistant.

She succeeds Kathy Thomas who resigned on May 1.

Miss Anthony is a graduate of Wittenberg University at Springfield, Ohio. She holds a bachelor degree in education.

Since graduation, she has worked in the newspaper, trade magazine, and book publishing fields. the region, such as local tax and water problems.

"Since the exploration by Lewis and Clark," said McDermott, "the Midwest has been known for its billowing bluegrasses. Present expansion of nursery-grown bluegrass acreage is so great that the formation of the association was imperative.

"We'll be working closely with state universities to tackle the maze of growing problems confronting this expanding industry."

Officers elected with McDermott are: Vice-president, Ed Keeven, Emerald View Sod Farms, O'Fallon, Mo.; and secretary-treasurer, William Latta, Princeton Turf of Kansas City.

Two-year directors are Claude Wiewel, Wiewel's Blue Grass, Quincy, Ill.; Melvin Briggs, Briggs Turf Farm, Stillwell, Kan.; and Don White, White Turf Farm, Des Moines, Ia.

One-year directors are: Jack Meyers, Meyers Turf Farms, Inc., Stillwell, Kan.; Bob Bechtold, Bechtold Landscaping, Columbia, Mo.; and Melvin Rich, Richlawn Turf Farms, Denver, Colo.

Another purpose of the Midwest group, said Latta, is to "promote and up-grade research and quality in the sod-growing and sod-installation industry."

Kansas City was selected as the association's headquarters, said Latta, because of its central location and the fact that three of the directors are from the immediate area.

## Features Are Announced For 45th Tree Conference

"Beautify With Trees" is the theme of the 45th International Shade Tree Conference.

The five-day event, Aug. 10-15, will be at the Hilton Hotel at Portland, Ore. Riley Stevens, president, Stevens Tree Surgery, is chairman.

Activities begin with a hospitality session Sunday evening, at the Hilton, courtesy of the Western Chapter of the Shade Tree Conference.

Delegates will feast at a salmon barbecue Monday evening on the beach at Gearhart.

Although the name is yet to be announced, an international authority on trees will be the keynoter at the Aug. 12 noon luncheon.

Equipment suppliers will demonstrate the newest and best of their merchandise Aug. 13 in Westmoreland Park.

Thursday night's annual banquet will feature The New Oregon Singers, a group of entertainers who have entertained U.S. troops in Vietnam and recently completed a world tour.

For the women, tours of the city will include Portland's International Rose Test Gardens and Lloyd Center, the world's largest shopping center. Other tours will include a trip up the Columbia Gorge with lunch at Multnomah Falls and a visit to Bonneville Dam.

Post convention tours include deep sea fishing excursions, a tour around Mt. Hood, an Alaska tour and a Canadian Rockies tour.

# Meeting Dates



Dates for this column need to reach the editor's desk by the 10th of the month preceding the date of publication.

- Central Plains Field Day, Central Plains Turfgrass Foundation, Research Plots, Kansas State University, Manhattan, Kan., June 2.
- Turf Research Field Day, Rutgers State University College of Agriculture and Environmental Science, New Brunswick., N.J., June 11.
- **Hyacinth Control Society** ninth annual meeting at the Holiday Inn, Palm Beach, Fla., June 15-18.
- Michigan Association of Municipal Cemeteries, 9th Annual Conference, Holiday Inn, Traverse City, Mich., June 20-21.
- Annual Meeting, American Society of Agricultural Engineers, Purdue University, Lafayette, Ind., June 23-25.
- National Fertilizer Solutions Association, Round Up Program, Ridpath Hotel, Spokane, Wash., July 8-10.
- National Fertilizer Solutions Association, Round Up Program, Hotel Muehlebach, Kansas City, Mo., July 22-23.
- American Sod Producers Association, Third Annual Field Days, College of Agriculture and Environmental Science, Rutgers University, New Brunswick, N.J., and Princeton Turf Farms, Cranbury, N.J., Aug. 4-5.
- Turfgrass Field Day, U.S. Department of Agriculture, at the Agricultural Research Center, Beltsville, Md., Aug. 6.
- 45th International Shade Tree Conference, Hilton Hotel, Portland, Ore., Aug. 10-15.
- National Fertilizer Solutions Association, Round Up Program, Marriott Motor Inn, Atlanta, Ga., Aug. 13-14.
- Golf Course Superintendents Field Day, University of Rhode Island, Kingston, R.I., Aug. 20.
- Lawn and Utility Turf Field Day, University of Rhode Island, Kingston, R.I., Aug. 21.
- Turfgrass Management Conference, Hawaii Turfgrass Association, East West Center, University of Hawaii, Honolulu, Hawaii, Aug. 27-29.
- Annual Turfgrass Field Day, Michigan State University, East Lansing, Sept. 4.
- Lawn and Ornamental Days, The Ohio Agricultural Research and Development Center, Wooster, Sept. 9-10.
- Michigan State University Sod Producers' first field day at the Much Experimental Farm northeast of East Lansing, Sept. 10.
- Virginia Cultivated Turfgrass Association sod field day at the Kidwell farm near Remington, Va., just off U.S. 29, Sept. 14.
- Central Plains Turf Conference, Kansas State University, Ramada Inn, Manhattan, Kan., Oct. 15-17.

National Fertilizer Solutions Association, National Convention and Equipment Exhibition, Cincinnati Convention Center, Cincinnati, Ohio, Nov. 9-13.



# "There is no substitute for Heller-Gro"

says Frank Holmes, Norman V. Holmes Tree Surgeons, Inc., Lafayette Hill, Pa.

"We've been using Heller-Gro for years," Frank Holmes reports. "We probably do more liquid feeding than anyone in our area, and we've learned from experience that there is no substitute for Heller-Gro!"

Completely soluble in water, Heller-Gro is the concentrated plant food suitable for almost every professional application. And because Heller-Gro is compatible with insecticides, fungicides, and specialpurpose products such as anti-transpirents, it can be used in complete confidence in any combination to save time and money.

Use Heller-Gro wherever you need a 15-15-15 complete plant food, from trees to tender seedlings. Heller-Gro won't burn — use on lawns, greenhouse stock, transplants, even field crops.

# Heller-Gro

Distributed Nationally by Knowles Tree Service, San Leandro, California

For FREE sample and booklet on how concentrated Heller-Gro can help you, write to: Boyle-Midway, Inc., Box 2255, Phila., Pa. 19103



# Sod Winterkill Extensive

# Shortage until 1971 seen in Great Lakes region

**S**<sup>OD</sup> WILL BE in short supply in the Great Lakes region possibly through the spring of 1971.

Producers have come to this realization as the effects of widespread winterkill in Wisconsin, Illinois and Michigan have become known.

Damage has been greatest on sod that would have been marketed this spring and summer. The shortage is most acute now and will taper off as new grass is planted and becomes available.

Most producers expected a price increase, though predictions varied. A few saw no change; a few saw prices going as high as 75 cents a square yard wholesale to the Chicago market. Yet the consensus c a m e quickly that whatever the price it would not be enough to cover the loss.

A high-low temperature situation the last few days of March brought on the kill.

#### **Cause Explained**

Dr. James B. Beard, associate professor of crop science at Michigan State University, explained the effects of Mother Nature's sneak attack:

"The kill occurred in late winter when the turf grass plants' resistance to lower temperature stress was drastically weakened. Temperatures dropped in a short time to near zero in late March. Both crowns and roots of grasses with a high water content were killed by freezing."

In a freeze of this type, the cellular structure is disrupted by ice causing the plant to die.

Wisconsin and Illinois producers suffered the greatest losses.

"If we (speaking of Wisconsin producers generally) can ship 50% of what we marketed last year, we'll be fortunate," reported Richard Horner of Horner Sod Farms at Union Grove, Wis. "And we planted more acreage this year than a year ago."

"Our farm is a good example," he continued. "By May 1, we had shipped only 10% of a year ago. I look for the situation to improve. We'll probably ship more in the fall -we'll have to in order to reach 50%."

Horner reported one experience that supports Andersen's explanation. In the Portage, Wis., area, one farm was completely ice-covered when the warm streak came in March. Apparently the cover kept the ground temperature low enough that the grass retained its winter resistance. "When the ice cover finally did melt, there was no damage at all," Horner said.

Ben Warren, president of Warren's Turf Nursery in Palos Park, Ill., largest grower in the country, estimated that nearly 80% of his grass plantings were killed. Another Illinois farm, H. E. Sod Nursery, in Tinley Park, reported a similar loss.

Michigan's loss was considerably less, judged to be about 15% statewide after an air-ground inspection. Some individual fields, however, suffered up to 80% damage.

New York and New Jersey area producers apparently were spared. Elwood Tantum, Manager of Princeton Turf Farms, Princeton, N.J., said in early May that "So far, we haven't seen any unusual problems. We have had a cold, wet spring and cuttings are behind normal."

#### Air Tour in Michigan

As the reports of damage came in from Wisconsin and Illinois, a steering committee for a sod producers' organization in Michigan joined with Michigan State University to sponsor a tour of the state's farms.

WTT's editor accompanied a threeplane, nine-man party that included university turf specialists and sod producers. The group inspected, eith-



Mottled field at left, in Michigan, illustrates two problems: the extent of damage (dark spots are water from recent rain); and the difficulty of harvesting what good sod remains. Above, Dr. James Beard, squatting and gestering, Michigan State University crop scientist, is explaining to most of the Michigan tour party what has happened. The inspection party included Beard; Axel L. Andersen, professor in MSU's Department of Botany and Plant Pathology; Ralph Hepp and Paul Rieke, MSU agricultural economists; Donald Juchartz, Wayne County extension agent; sod producers Bob Daymon of Gregory, Bob Hozak of Fowlerville, and Ted Bosgraaf of Hudsonville; and WTT's editor.





The men in the left picture were instrumental in arranging the air-ground tour of Michigan sod farms. They make up the steering committee working toward the formation of a state association of growers. Ted Bosgraaf of Hudsonville is comparing the root system of live sod (in his right hand)

with that of grass winterkilled. Looking on is Bob Daymon center, of Gregory, and Bob Hozak of Fowlerville. At right Donald Juchartz, Wayne County extension agent, examine apparently healthy sod that exhibited no root system. He predicted the grass would die in a few days.

er by air or ground, some 35 to 40 farms or about 50% of the state's total acreage.

Bob Hozak, owner of Tech Center Sod Farms at Fowlerville, summed up the Michigan situation as being the "worst of three out of five bad years," the others being in 1965 and 1968.

"We've seen a little bit of everything — disease, freezing, desiccation," observed Axel L. Andersen, MSU professor in the department of Bontany and Plant Pathology. The disease, he said, probably was active last fall and is showing up this spring as the weakened grass was killed by a combination of low temperature and flooding.

One farm showed evidence of *Fusarium* blight; another fairy ring. A close inspection of one field of

apparently healthy turf revealed to Michigan's Wayne County Extension Agent Donald Juchartz that something else must have happened last fall. For some reason, the grass had grown no root system at all. Juchartz predicted that the lush leaf system would soon overtax the roots and that the plant would die.

Evidence on another turf farm supported the theory. Patches of green grass turned brown "almost overnight."

Still other growers were worrying about a more recent problem. A late April two-inch rain inundated sizable portions of farms in the Jackson, Mich., area.

"If the weather were to warm up, there would be more damage," said Beard. University experiments, he added, have shown that grass can



"Losing the sod is bad enough, said Bill Johnson, owner and genera manager of Halmich Sod Nurseries "but plowing the dead sod is anoth er thing. You just can't get it al plowed down, and that affects the next crop."

The "hopscotch" harvesting tha will be necessary to lift good so from a field spotted with winterkil "could double cutting costs," said Horner.

Actual dollar loss on sod alone i difficult to estimate and the los through related costs — such a fixed overhead, higher production costs, lost wages, etc. — almost in calculable.

#### **Price Increase Expected**

Prices were expected to go up.

"Wholesale prices of 40 cents las year were expected to go up two to five cents anyway," said Warrer "With the shortage, the price could go to 60 cents or even higher. A bij determining factor will be the trans portation costs of bringing sod from other locations."

Horner felt wholesale prices migh peak at 75 cents. "Some buyers may think we're gouging them, bu

For More Details Circle (102) on Reply Card

a member of ASPA.

AMERICAN SOD PRODUCERS ASSOCIATION

If you are a Sod Grower you should be

Keep in touch with progress.

Allied Industries are welcome.

invites your participation



Some evidence of disease was found, such as Fairy Ring above, but most damage was caused by a high temperature period followed by a hard freeze.

there's just no way to cover our costs."

"This kind of a loss," said Warren, "will cause a lot of us to do some thinking and investigating to see if a federal disaster loan of some kind is available and if a type of crop insurance can be obtained for future protection."

With the winterkill so widespread and coming on the heels of a bad year in 1968, Bob Daymon predicted that the Great Lakes region would feel a shortage "until the opening of the spring season in 1971."

"It will take that long for producers to regain the marketable sod acreage lost to winterkill."

Daymon, whose farm is near Gregory, chaired the steering committee of the fledgling Michigan sod producers group. He and the other members, Ted Bosgraaf of Hudsonville and Bob Hozak of Fowlerville, both producers, were instrumental in arranging the plane tour of Michigan farms.

## First World-Wide Turf Meet Set July 14-17 in England

The first international turfgrass research conference is slated for July 14-17 in Harrogate, Yorkshire, England.

According to Organizing Committee Chairman Dr. James B. Beard, the conference's objective is to establish a forum for the exchange of information on turfgrass problems, research methods and results. Some 60 world specialists are expected to attend.

Creation of a permanent organization is also on the agenda. The date and place of the next international conference will be discussed, Dr. Beard added. He is affiliated with Michigan State University's Department of Crop Science.

Conference proceedings to be published will include: turfgrasses and their improvement; soil modification and nutrition; environmental stress; turfgrass pests—weeds, insects and disease—and their control; construction and maintenance systems; and turfgrass terminology and definitions.

U. S. conference publicity director is Dr. James R. Watson, director of agronomy for Toro Manufacturing Corporation, Minneapolis, Minn. The other two organizing committee members are J. R. Escritt, Sports Turf Research Institute director at Bingley, Yorkshire; and Bjarne Langvad, horticulture director for Weibulls, Landskrona, Sweden.

# ASPA Sod Field Days Open at Rutgers, Aug. 4

Two turfgrass research and development sites and a commercial turf farm will be the focal points of the third annual summer conclave sponsored by the American Sod Producers' Association, Aug. 4-6.

Activities will center at Rutgers University's College of Agriculture and Environmental Science in Brunswick, N. J.; Princeton Turf Farms in Cranbury, N. J., and the U.S. Department of Agriculture Research Center in Beltsville, Md.

A turfgrass research plots tour will highlight the Aug. 4 field day at Rutgers. Guests will inspect the internationally famous turfgrass breeding program, then attend a dinner business meeting.

On Aug. 5, the newest sod production equipment and products will be displayed and demonstrated at Princeton Turf Farms.

USDA's field day is Aug. 6 at its Beltsville research center.

Interested exhibitors should contact Dr. Henry W. Indyk, executive secretary, Rutgers' College of Agriculture, New Brunswick, N.J. 08903.



- WILL ELIMINATE UP TO 10 MEN FROM YOUR LABOR FORCE.
- DEPENDABLY PRODUCES 1500 PLUS YARDS OF NEATLY ROLLED AND PALLETIZED SOD PER HOUR.
- THE "HARVESTURF" NEVER TRAVELS ON THE SOD, ALLOWING HARVESTING UNDER MOST WEATHER CONDITIONS, AND NEVER DAMAGING THE TURF.
- ALL POWER IS FURNISHED BY HYDRAULIC MOTORS WHICH ARE FULLY ADJUSTABLE AT ALL SPEEDS.
- THE "HARVESTURF" IS ABLE TO HARVEST SOD AT WIDTHS UP TO 24 INCHES AND LENGTHS TO 82 INCHES.

BIG 'J' PRODUCTS, INC. A DIVISION OF SHAMROCK TURF NURSERIES, INC. / HANNA, INDIANA 46340 PHONE: 219-797-2215

For More Details Circle (114) on Reply Card

# **New Products . . .** Designed for the Vegetation Care Industry



Gator Trailers Corporation, Jacksonville, Fla., now offers "The Superintendent" (Model 211), a utility trailer for removing clippings or moving sod, shrubs, bushes, etc., plus small equipment. The trailer shown at left is pulled by a golf cart (can also be towed by tractor, truck, truckster), which uses only 35% of its batteryoperated power in the daily task of mowing greens, says Gator. One man can mow, dump clippings, repair ball marks and rake traps quickly and efficiently. The 1150-lb.-capacity unit is 96" long, 54" wide. For more details circle (701) on reply card.

Spraying Systems Company, Bellwood, Ill., is marketing its new No. 17-CM TeeValve that mounts to tractor cab walls and provides 7 settings for complete spray control of all sections of a 3-section boom without your leaving the cab, the firm says. Control handle and face plate are located inside cab wall and valve body is outside for easy connection to liquid lines. Internal parts are corrosion-resistant plastic; body is aluminum and stainless steel. For more details circle (702) on reply card.





Avco Ezee Flow Division, Coldwater, Ohio, adds a 3-point hitch spinner model to its fertilizer spreader line. Ideal for spreading pelleted, granular and semi-granular fertilizers and most seeds by broadcast application or directional or band spreading, says Avco. Hopper holds more than 11 bushels of material and spreads from 13 to 1600 lbs. per acre in a uniform pattern up to 30 ft. wide. Hopper bottom is divided, each section having an agitator and adjustable metering gate that feed material to the twin spinners. For more details circle (703) on reply card.



**Century Engineering Corp.'s HPW-3 "Scotty" Washer** draws cleaning solution from 55-gal. drums at 2 GPM, delivers 500 lbs. pressure. 3-way control lets you apply solution, rinse and refill drum with water. Handgun and 30' hose included. For more details circle (704) on reply card.



Hub States Chemical and Equipment Corp., Indianapolis, offers Roll-About Electric Sprayer with 5-gal., polyethylene tank that removes for cleaning. Unit discharges mist spray from 1.8 to 5.3 GPH, residual spray from 6 to 14 GPH. For more details circle (705) on reply card.



Motorola Communications & Electronics, Inc., Chicago, makes available non-incendive Handie-Talkie 2-way radios safe to use in hazardous atmosphere of oil, gas, chemical, mining, etc., industries. For more details circle (707) on reply card.

I. Case Company, Racine, Wis., as self-contained CB70 Carrier oom operable with any type ump to deliver concrete 60 feet r higher. Controlled from truck r by remote control. Unit has 000-lb.-capacity (at 80° boom ngle) auxiliary lift line, operates ver-the-road at speeds to 70 mph. or more details circle (708) on eply card.





Clark's truck-mounted sprayer has 1000-gal., stainless steel tank with rubber-lined saddle. Full-length sparging tube is welded to tank bottom for agitation. Model U-37, 10-row channel boom shown has 1" hose, resists corrosion. Choice of engine and pump units. Shown is 7 H.P. Wisconsin engine with M.P. (flomax 10) 180 GPM centrifugal pump. Accommodates most fertilizer solutions, mixed, liquid and suspension materials, says Clark's. For more details circle (706) on reply card.



Fort Myers Iron Works, Fort Myers, Fla., makes available Litter-Whisk attachment for Wheel Horse tractors. Unit is 37" wide, whisks up 15 bushels of cuttings, leaves (even wet ones), pine needles, paper, etc. Tractor-mounted, it simplifies dumping and maneuverability. Hopper can be emptied from driver's seat. For more details circle (709) on reply card. Sabre helps you to cut down the cost of cutting





#### "The Pioneer in Foliar Feeding"

Honored by American Horticultural Council "for demonstrating in a practical way that plants could be fertilized through their leaves; for being the first to develop and market an effective plant food for foliar feeding; and for opening the way to a new cultural practice in horticulture."



## Elm Tree Losses a Record In Milwaukee, Wis., Area

Milwaukee County, Wis., elm tree fatalities soared to nearly 35,000 last year, according to Stanley Rynearson, Milwaukee area agri-business agent for the University of Wisconsin extension service.

Dutch elm disease, according to Rynearson, was the culprit, costing the county and municipalities more than \$1.6 million in 1968. Seventyfive percent of this figure was earmarked for tree removal, he said.

Of the 26,017 replacement trees planted last year, 64% were maple, a lower ratio than for previous years. Also, the extensive elm loss has deterred several municipalities' plans for further comprehensive control, Rynearson continued.

It is believed that this year's absence of DDT from control recommendations will hamper additional control efforts. Despite the heavy elm tree losses, Milwaukee County still has some 240,000 elms, Rynearson reported.

Of the \$1.6 million cost figure cited by Rynearson, nearly \$949,000 was borne by the city itself, the remainder having been paid for by the suburbs and county. These figures included tree removal, disease control, and elm tree replacement costs.

#### Board Okays Bylaw Changes For Helicopter Association

Directors of the Helicopter Association of America have ratified bylaw changes requested by the membership at the January annual meeting.

Action came at a May board meeting in Vancouver, B.C., Canada. Changes incorporated include:

1. Increase elected board members from six to nine.

2. Adoption of three-year terms for newly elected directors; three directors to vacate annually, being replaced by three newly elected directors.

3. Representation of industry airframe manufacturers by one exofficio member serving a one-year term in an advisory capacity to the board.

4. Permanent ex-officio board membership of the full-time executive director, who also will serve on all committees.

5. Elimination of associate Class C membership. Corporate or individual commercial helicopter or STOL equipment operators—in either bus-



#### Career Opportunities in Tree Care



Mark a sense for the entrof these and other here. Interval through the work of many sum or older "advorted". These attractions protein a sense of "advorted". These attractions protein a sense of proteining the sense through the through the proteining at the sense of the through the constraints of the through the constraints of the through the sense of the

#### UTIES OF THE ARBORIS

ande and ornamental trees are definitely part of the m to make our constry more benefiti. The bords is called upon to design and fullow through the tree plattings. This requires consideration as to a type of tree needed for the particular environmals conditions and the executions of propagienglanting the trees to the new location. More we any plantic development of the part of the explanted now will be higt trees requiring the riven of a trained arborist.

This new tree care brochure has been released by the National Arborist Association. It describes the arborist's duties, physical, educational and training requirements, and tools and equipment needed. Copies are available from Association headquarters at 700 Southern Building, Washington, D. C., 20005, free of charge up to 10 copies. Eleven copies or more cost five cents apiece.

iness or personal capacities—are eligible for regular membership involving regular member dues payments. This category expressly excludes leasing companies.

6. Adoption of a full membership mail balloting system for major projects and elections of directors. New ballots include provision for membership write-in candidates.

All first-year regular members' dues continue at the \$100 flat rate. Thereafter, dues entail the flat rate plus \$20 for each aircraft, to a maximum of \$260. International members outside the western hemisphere also pay \$100 annual flat rate dues, in U.S. currency.

Regarding the Association's controversial malfunction program, Executive Director John E. Ryan stated:

"This is not a part of the Association reorganization, but our directors have ruled that the termination of this program remains entirely with the manufacturers concerned.

"As soon as they institute a satisfactory and workable communications system with their customer/ operators to report mechanical malfunctions immediately, there will no longer be a requirement for the H.A.A. malfunction program. Until that time, these malfunctions must be reported to all members regardless of the equipment operated."

## Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102. Rates: "Position Wanted" 10¢ per word, mini-mum \$3.00. All other classifications 20¢ per word, minimum \$4.00. All classified ads must be re-ceived by Publisher the 10th of the month pre-ceding publication date and be accompanied by cash or money order covering full payment. Bold-face rule box: \$25.00 per column inch, two inch minimum.

#### FOR SALE

FOR SALE - Sod Farm - 160-acre sod farm, 100 acres muck in sod, rest is mineral soil. In Ingham County. Phone 313 662-9398.

#### USED EQUIPMENT

7 GANG Roseman mowers, rebuilt, \$1,295.00; separate mowers, \$150.00 each; 32' tandem flat bed trailers, as each; 32' tandem liat bed trailers, as is, \$300.; OC 6 crawler with hydrau-lic, \$2,200; MD-IHC with loader, \$700.00; tilt top trailer with winch, \$250.00; Quickway backhoe on 4x4 truck, as is, \$350.00; 6x6 GMC trac-tor, large tires, \$650.; <sup>1</sup>/<sub>2</sub> tracks for Ford, \$150.00. Ellis Foulkes, Fall Piror Wisconsin 53032 Phone: 414 Ford, \$150.00. Ellis Foulkes, Fall River, Wisconsin 53932. Phone: 414 River, 484-3941.

50 FT. HI RANGER with dump box on 1965 International, excellent shape. Write: Paulson Tree Service, 12242 Cliffwood, Garden Grove, California 92640.

#### **HELP WANTED**

WORKING FOREMAN for sod farm. Top wages and percentage, or would consider land lease. Ellis Foulkes, Fall River, Wisconsin 53932. Phone: 414 484-3941.

#### BUSINESS OPPORTUNITIES

FOR SALE - Active Tree Business Connecticut, New York. J. R. Experts, New R Krapowicz Tree Experts, New Canaan, Conn. 06840. Phone Pound Ridge 4-5002.



"Say, friend, would you like a job trimming trees?"

## **Oregon State Accelerates Testing of New Herbicides**

In an effort to speed up the development and safe use of effective herbicides, Oregon State University researchers are involved in a fastpaced program of evaluating new herbicides.

Fifty-one chemical companies from the United States, England, Germany, Switzerland, Japan and France-producing new chemicals at the rate of 150 per year-are cooperating.

The program's intent is to bring together all new herbicides produced by the world chemical industry that are still in an early stage of testing. The chemicals are then

Advertisers -INDEX TO ADVERTISERS

| Amchem Products, Inc                 |
|--------------------------------------|
| American Sod Producers Association   |
| E. I. duPont de Nemours & Co., Inc 4 |
| Elanco Products Co                   |
| Fairfield Chemical Company4th Cover  |
| Heller-Gro Company 29                |
| Hypro, Inc. 19                       |
| International Harvester Co. 16/17    |
| Jacklin Seed Company 3rd Cover       |
| Locke Mfg Companies 25               |
| Mitte 9 Magnill lag                  |
| Mitts & Merrill, Inc.                |
| Mobile Aerial Towers, Inc            |
| John Nunes Mechanical                |
| Harvesting Company2nd cover          |
| Nursery Specialty Products Co        |
| Pennsalt Chemicals Corp              |
| Robert B. Peters Co., Inc.,          |
| Rain-Jet Corp                        |
| Ra-Pid-Gro Corp                      |
| Sabre Saw Chain, Inc                 |
| Shamrock Turf Nurseries              |
| Stihl American, Inc                  |

compared under as many conditions and on as many crops and weeds as necessary to adequately assess their potential.

By testing herbicides in Hawaii and South America, in addition to Oregon, researchers can obtain three seasons of information in one year. The program hopes to reduce by a year or more the time it takes for a promising chemical to become available on the market. Currently it requires five years or more.

No secrets are kept on any findings . . . information is available to anyone, say program director Dr. W. R. Furtick, Oregon State Professor of Farm Crops, and his assistant, L. C. Burrill.

# Industry People On the Move



Rain Bird Sprinkler Manufacturing Corporation, Glendora, Calif., appoints H. Gary Underhill vice-president of marketing. He had been hardware sales manager and market development manager since 1964. \* \*

Ansul Company, Marinette, Wis., announces the appointments of Dr. O. V. Luke as director of research and Jerome A. Hagen as director of development. Luke had been retained as a consultant for the past six months. Hagen takes on additional responsibilities in the area of fire protection. \* \*

Morton Chemical Company, a division of Morton International, Inc., Chicago, names Terrel W. Mayberry a field development representative in its agricultural chemical division. Mayberry was formerly employed by Chevron Chemical Company in Fresno, Calif., as a research specialist.

WEEDS TREES AND TURF, June, 1969

Diamond Shamrock Corporation, Cleveland, Ohio, welcomes Dr. James A. Winchester to its research department as a senior field specialist. He will supervise the corporation's Florida research farm operations in Boynton Beach. \* \*

International Harvester Company, Chicago, appoints Charles L. Walker general supervisor of advertising of its farm and industrial equipment. Beginning his career with International Harvester at McCormick Works, Walker joined the advertising department in 1963 after a variety of assignments in industrial relations and with the firm's Harvester Central School.

Velsicol Chemical Corporation, Chicago, appoints three new regional managers for its agricultural division. G. Quentin Brown becomes Midwest regional manager with offices in Omaha, Neb.

Eugene Taylor, new Northeast regional manager, will be located in New York City. He was formerly national sales manager of agricultural chemicals at American Oil Company.

Philip Snow becomes Southern regional manager, with offices in Houston. He moves from Kansas City, Mo., where he was manager of the country operations division of Bartlett & Company.

# Gulf Conducting Research On 'Time-Pill' Fertilization

A single feeding which could nourish plant growth for several years is being researched by Gulf Oil Corporation's Harmarville, Pa. subsidiary.

This "time-pill" research is known technically as encapsulation, or coating of fertilizers and plant foods. These are suspended in a wax coating with additives for soil distribution in powder, structural and "stick" form. Water gradually releases the nutrient from the coating, so that the plant receives a continuous, "sustained release" feeding.

Gulf scientists envisage encapsulation in all planting activity timbering, forestration, pesticide and herbicide application, and even in prolonged feeding of aquatic pets.

Gulf scientists examine results of a wax encapsulation experiment for fertilizing and feeding plant life. The nutrients are released gradually as the plant is watered. The beaker in the foreground contains various forms of wax encapsulations.



# Weed Society Announces Three Policy Changes

Decisions affecting Weed Science Society of America members were made recently by the Society's executive committee. according to F. W. Slife, business manager.

The decisions include publishing the Weed Science journal six times annually instead of four. The anticipated bimonthly schedule is January, March, May, July, September and November. The purpose is to shorten the time between paper submission and printing. The change becomes effective beginning with Volume 17 in 1970.

Page rates will go from \$10 to \$20 per page, effective for all manuscripts submitted on or after Aug. 1. Those who cannot obtain page charge payments approval from their employers are asked to contact Slife.

Also, beginning with 1970, Society membership fees will be raised from \$10 to \$12 per year, and subscription rates will increase to \$15. Graduate student membership fees will remain at \$5.

#### A WEEVIL

(Rynchophorus cruentatus) FLORIDA: Continues problem on Canary date palm in nursery at Homestead, Dade County; controls used.

#### TREE INSECTS

A CONIFER APHID

(Cinara sp.) WISCONSIN: Eggs unusually heavy on red pine needles at Western Dane County site.

#### EASTERN TENT CATERPILLAR

(Malacosoma americanum)

OKLAHOMA: Third instars on wild plum in Noble, Payne and Mayes counties. First report of year. MIS-SOURI: Hatching on wild cherry in Phelps County. OHIO: Hatch expected about Apr. 25. VIRGINIA: On wild cherry in lower Nansemond County.

#### AN OLETHREUTID MOTH

(Epinotia subviridis)

CALIFORNIA: Larvae heavy on cypress trees at Laguna Beach, Orange County.

#### **RED-HEADED PINE SAWFLY** (Neodiprion lecontei)

FLORIDA: Outbreaks begun late last fall still continuing at Tennile, Steinhatchatchee, and Keaton Beach in Taylor County. About 100 acres of 2- to 8-year-old commercial longleaf pines involved. Killed 500 8-year-old trees; damage still being evaluated; defoliation followed by attacks of *Ips* sp. (an engraver beetle) and *Pissodes* sp. (a weevil) in dry weather. *N. lecontei* eggs to fourth instars heavy on more from 600 acres of year-old slash pine. *N. lecontei* and secondary infestations of probably *Pissodes nemorensis* (deodar weevil) killed 1000-yearold slash pines in 1968. Infestations total more than 1000 acres.

#### WEEDS TREES AND TURF, June, 1969

# Insect Report

WTT's compilation of insect problems occurring in turfgrasses, trees, and ornamentals throughout the country.



#### TURF INSECTS

#### A BILLBUG

(Sphenophorus venatus vestitus)

CALIFORNIA: Adults of this and Sphenophorus phoeniciensis light in lawn turf at Anaheim, Orange County.

#### SAY STINK BUG

(Pitedia sayi)

NEVADA: Adults medium on range plants, especially Stanleya sp., in Clark County.

#### INSECTS OF ORNAMENTALS

#### SIX-SPOTTED MITE

(Eotetranychus sexmaculatus)

FLORIDA: Eggs and adults moderate on 850 of 1,000 azalea plants at Mango, Hillsborough County.

#### ARMORED SCALES

CALIFORNIA: Hemiberlesia lataniae heavy on evergreen pear on hospital grounds at Santa Maria, Santa Barbara County, and Aspidiotus nerii (oleander scale) heavy on Cycas sp. nursery stock at San Diego, San Diego County. Lineaspis cupressi heavy on juniper nursery stock at Torrance, Los Angeles County.



# - Trimmings -

**CAN YOU ALWAYS** capitalize on a good reputation? Hank Schmid, advertising manager for The Davey Tree Expert Company, Kent, Ohio, isn't so sure. He tells that famous author John Steinbeck, in his book of a few years ago, "Travels With Charlie," begins a chapter by writing that his dog, Charlie, was becoming quite a tree expert. In fact, he claimed Charlie "could probably get a job as a consultant with the Davies people."

"We would like to think he meant the Davey people," said Schmid, "but even if he did, we're not sure what to say about it."

A QUESTION concerning another name came up after the recent plane tour of Michigan sod farms damaged by winterkill. Producers were on the verge of forming a state association, and Bob Hozak of Fowlerville was asked what the new organization might be called.

"Right now," he replied, "the appropriate name would be the Michigan Sad Producers."

WHILE WE'RE ON NAMES, you'll note another staff change on the contents page. Kathy Thomas, editorial assistant for a little more than a year, left Harvest Publishing Company May 1 ostensibly to go to California. She got only as far as St. Louis, where she married banker Richard Illyes on May 3.

AND A FELLOW named Robert Finch, U.S. Secretary of Health, Education and Welfare, says the average person has a concentration of DDT in his fatty tissues of about 12 parts per million. The government confiscates foodstuffs if the amount exceeds 7 parts per million, he adds.

So keep in mind that you are unfit for human consumption . . . in case a cannibal should ask.

. . .

**MUCH OF THE CAMERA** supplies we purchase to take pictures for this magazine come from the Eastman Kodak store here in Cleveland. We deal with the camera supplies representative whose name is Henry P. Flash.

#### Weeds May Be Detected By Infra-Red Photography

Infra-red photography may soon be used to detect weed infestations from the air, reports Dr. J. R. Orsenigo, a horticulturist with the University of Florida's Everglades Experiment Station, Belle Glade, Fla.

Orsenigo says that ground and aerially exposed conventional and infra-red color photography have been compared in weed science applications with agronomic and horticultural crops and weeds. Gradations in plant response can be noted, but the effect of background color on infra-red film may hinder evaluation, he reveals.

Simultaneous paired exposures of conventional and infra-red color films may be needed for optimum information in weed science, he concludes.

#### Private Property Offers Sanctuary for Sick Trees

Kansas City, Mo., lost more than 4100 street and boulevard trees to Dutch elm disease during 1968, the highest number of such "fatalities" since 1964, it was recently reported to the city's parks and recreations board.

The increase was attributed to lack of city authority to remove diseased trees on private property.

Attempts to get such legislation in the past have "fallen on very deaf ears in Jefferson City," according to Herbert Brackney, chief planner for the department. However, with the revelation that the spread of DED through connecting root systems was particularly noticeable in Kansas City last year, a new effort that may reach the Missouri Legislature is currently being prepared, it was reported. SPLENDOR IN GRASS is 0217® brand Fylking Kentucky bluegrass

Jewel among lawngrasses, Fylking has an entire complement of splendid features. Unusual density due to abundance of sideshoots creates a weed-free lawn. A ground-hugging carpet of green splendor, its outstand-ing color continues all season because it's so diseaseresistant. Winter hardy and drought tolerant, Fylking grows thicker in summer. Doesn't produce ugly seedheads, mixes well with other varieties, gradually dominating. Fine, thick texture can be cut as low as 1/2 inch for home putting greens, or 3/4 inch for beautiful home lawns. Specify 0217® Brand Fylking Kentucky bluegrass lawn seed — at your seed distributor.



WEEDS TREES AND TURF, June, 1969

For More Details Circle (120) on Reply Card For more details on Back Cover circle (117) on Reply Card #



As pretty as they can be, they're still weeds! And to kill 'em—all of them—you need Tandex™.

Tandex will kill many different types of weeds. Broadleafed. Grasses. Even woody species! Use it in noncropland areas, such as highways, airports, railroad and pipeline rights-of-way, petroleum tank farms, lumberyards, storage areas and industrial plant sites.

Tandex is a urea-carbamate compound that's persistent. Lasts a whole season or longer. Yet it's non-toxic to man, animals and fish. Has minimal lateral movement in the soil. Non-flammable.

Tandex is available in wet-

table powder and granular form. It can be combined with fortified oils and other herbicides for special control situations.

For more information, write to Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

