



Forty-two persons attended the University of Tennessee's second annual one week winter short course in turfgrass management, under the direction of Dr. Lloyd M. Callahan, associate professor of agronomy. In attendance were golf superintendents and their assistants, park managers and supervisors, grounds managers, horticulturists, landscapers, and turf product sales representatives. From the left, they are: Front row: C. Long (cropped out of picture), R. V. Smith, R. V. Tega, Dr. L. M. Callahan, R. W. Owenby, J. K. Myers, G. E. Herron, W. H. Patty (cropped out); second row: W. S. Kellogg, C. A. Pyron, L. C. Martin, D. Henley, J. O. King, J. West, L. Bacon; third row: Dr. J. G. Staley, D. Kenney, M. R. Moore, W. F. Schoenfield, P. B. Parker, W. E. Womac, W. E. Bell, C. A. Hancock, D. A. Fowler; fourth row: F. E. Browning, B. Shearin, H. J. Felts, J. R. Maurer, H. M. Shoemaker III, D. Leneer, C. H. Romines, D. P. Miner; fifth row: F. T. Bradley, C. H. Wagner, L. F. DeLozier, F. Self, C. L. Chandler, F. S. Atchley, C. R. Chambers, R. P. Keener, J. M. Carson, P. D. Harris, and R. L. Phipps.

cides are caused by eating or drinking them from a container," he said. "In the past few years throughout the country, at least 95 cattle have died from grazing on grass which had received accidental drift from arsenical herbicides from near-by spraying operations. Arsenic trioxide and sodium arsenite were the materials most frequently causing these deaths. However, one of the newer organic arsenical chemicals, MSMA, caused the deaths of a two-year-old girl and 41 beef cattle during 1967-68."

Dr. Bailey said absorption through the skin plus inhalation are the most common ways herbicides attack people, noting oral ingestion of pesticides by workers has not often occurred.

He reminded the specialists there

are four toxicity ratings on pesticide labels:

1. The signal words "DANGER," "POISON," and the skull and cross bones symbol are required on the labels for all highly toxic compounds.

2. The word "WARNING" is required on the labels of all modestly toxic compounds.

3. The word "CAUTION" is required on the labels for all slightly toxic compounds.

4. No special words or symbols are required on compounds with an acute oral half lethal dose (LD<sub>50</sub>) greater than 5000 mg/kg. However, unqualified claims for safety are not acceptable on any label and all labels must bear the statement "Keep out of reach of children."



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### Lincoln, Neb., Ordinance Authorizes Tree Planting

On Mar. 22, 1971, the City Council of Lincoln, Neb., passed an ordinance authorizing the City Park and Recreation Department to plant trees on the city streets of Lincoln. This was in keeping with its past policy of being the state leader in the care of its city trees.

Lincoln has had a control program for Dutch Elm Disease since 1964 and feels this program has been very successful. To date, 12% of the original population of American Elms has been lost.

To maintain its title as a City of Trees, Lincoln felt this was the time to implement the City Tree Planting Program. A survey of the trees on some of the city streets has been completed, and on these streets the varieties of trees to be planted have been selected.

Lincoln plans to use 28 different varieties. The accent will be toward smaller flowering trees

matched to the planting space available.

The new ordinance prohibits planting trees closer than three feet to any sidewalk or curb. This will necessitate considerable planting behind the sidewalk. Fortunately, most of the property lines in Lincoln are four feet behind the sidewalk. This will make it quite easy to plant behind the sidewalk and not encroach on private property.

The City of Lincoln currently maintains a City Nursery stocked with 2,079 trees. A portion of these trees will be planted on the streets. Present department plans call for an expenditure of \$34,000 to purchase 2,800 trees in the spring of 1972. — DONALD J. SMITH, director, Department of Parks and Recreation, Lincoln.

\* \* \*

### Burst of Interest for Old Circular

We enclose a copy of our Extension Circular #148, for which we suddenly have been receiving many requests. It surprised us until we read in one of the re-

quests that they had seen it listed in your March, 1971, issue. If you had seen this bulletin before you listed it, we are wondering if you would have offered it. Factually, for 1962, it was correct — but methods and chemicals have changed tremendously since that time. Of course, the circular is still available, under that date, but we are asking ourselves if you should print some sort of "corrective thinking" in your next issue to keep your readers straightened out with the fact that they are receiving an outdated circular. — B. MONAHAN, publications, Cooperative Extension Service, University of Rhode Island.

**EDITOR'S NOTE:** We regret the outdated circular has been publicized. In our screening process, we tried to list only those publications that were published in the past two or three years. Unfortunately, the list of publications available from Rhode Island did not indicate that Circular #148 was nine years old.

## insect report



### INSECTS OF ORNAMENTALS

#### BOXWOOD LEAFMINER

(*Monarthropalups buxi*)

VIRGINIA: Damage heavy on large planting of American boxwood in Amelia County. Reports indicate heavy damage statewide.

#### AN ARMORED SCALE

(*Odonaspis penicillata*)

FLORIDA: All stages collected on stems and leaves of bamboo plant at Summerland Key, Monroe County. This is a new county record.

#### HOLLYHOCK WEEVIL

(*Apion longirostre*)

MISSOURI: Adults collected in blacklight trap in Platte County. This is a new county record.

### TREE INSECTS

#### A CONIFER APHID

(*Cinara curvipes*)

WASHINGTON: Damage serious to recently transplanted alpine firs brought to Yakima County from Cascade foothills.

### BAGWORM

(*Thyridopteryx ephemeraeformis*)

ARKANSAS: Populations epidemic during summer 1970 in northwest area. Radiographs show heavy winter egg survival. Should survival be above average, populations may be widespread and severe during 1971.

### BARK BEETLES

(*Dendroctonus* spp.)

ALABAMA: *D. frontalis* (southern pine beetle) and *D. terebrans* (black turpentine beetle) damaged isolated pines in Mobile County; numerous pines died during March. SOUTH CAROLINA: *D. terebrans* remains at epidemic level in Sand Hills and Cheraw State Forests located in north-central area of State.

### SOUTHERN PINE BEETLE

(*Dendroctonus frontalis*)

Populations increased to serious levels in Tusquitee and Cheach districts of Nantahahala National Forest in western NORTH CAROLINA, and in Tellico district of Cherokee National Forest of TENNESSEE. Heavy timber losses occurred in Accomack County, VIRGINIA. Populations in SOUTH CAROLINA collapsed during summer 1970, currently very light. Also light in TEXAS, LOUISIANA, and MISSISSIPPI, but heavy brood densities could result in timber losses this spring.

### WALKINGSTICK

(*Diapheromera femorata*)

ARKANSAS: Defoliation of hardwoods heaviest in recent years. Heavy defoliation on 85,000 acres out of 132,729 acres.

## SCS Announces Specialty 'Conservation Grasses'

Commercial nurseries will be getting several more grasses from USDA's Soil Conservation Service this year, reports Wilmer Steiner.

Steiner supervises the work of 20 SCS Plant Materials Centers around the country.

Grasses recently released include Barton Western wheatgrass, a disease-resistant, superior forage producer for areas of the Great Plains, and "Tegmar" intermediate wheatgrass, a dwarf-type grass for the far western states. Tegmar produces tight sod, is drought-tolerant, and is good for stabilizing roadsides or other areas highly prone to erosion that need low, slow-growing ground cover.

This year, says Steiner, SCS hopes to release several more grasses to commercial nurseries through local soil conservation districts or state crop improvement associations. Among them:

● **DEERTONGUE**, a perennial panicgrass that stabilizes and beautifies strip mine spoil areas, steep ditches and highway cuts and fills. It has coarse, broad leaves, great seedling vigor, a height of 2½-3 feet and high tolerance for acid soils. It was developed at the Big Flats, N.Y., Center, in cooperation with Pennsylvania State University.

● **"CAPE" AMERICAN BEACHGRASS**, for use on East Coast beaches and sand dune areas from North Carolina to Massachusetts. Selected at the Cape May, N.J. Center, in cooperation with Rutgers University, it has proved more vigorous than other types of beachgrass tested.

● **MAIDENCANE**, a tough, water-loving native perennial of the Southeastern U.S. for use on the banks of drainage ditches and manmade lakes. Maidencane reduces scouring and wave action damage and is a good forage grass for wet, marshy areas. The major work on improving hardiness and adaptability is being done at the Coffeenville, Miss., and Brooksville, Fla., centers.

## Charcoal Need Not Hinder Crabgrass Herbicides

An agronomist who three years ago found a way to reduce the harmful side effects of herbicides by using activated charcoal has since found that charcoal need not diminish the effectiveness of herbicides later applied for crabgrass control.

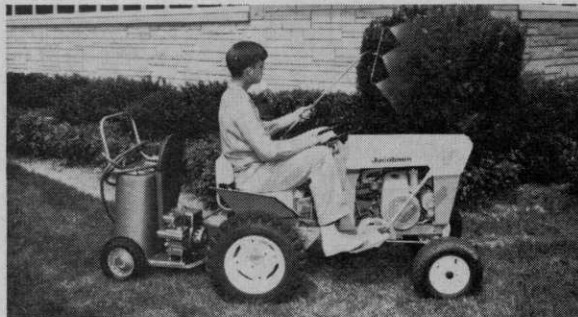
John A. Jagschitz, professor of

plant and soil science at the University of Rhode Island, reported his findings at the Northeastern Weed Science Society.

In 1968, he had published a study on how charcoal could be used to deactivate herbicide residues in turfgrass seedbeds.

According to his most recent study, although greater amounts of charcoal applied to turf caused greater reductions in the effectiveness of herbicides subsequently applied, by increasing the amounts of herbicides, the retarding effect of the charcoal was counteracted.

Effectiveness of standard rates of three herbicides—Betasan, Dacthal and Tupersan—was reduced when they were applied to turfgrass treated five months earlier with 100 pounds of charcoal for each acre. But charcoal applications made 17 months before the herbicide treatment were far less inhibiting than those made five months before, he said. There was no reduction in the effectiveness of three other herbicides—Bandane, Planavin, and tricalcium arsenate—by the previously applied charcoal, according to the study.



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## Nematodes May Provide Another Answer to DED

When an Agricultural Research Service nematologist examined shot-hole borers that had killed a peach tree, he found the insects, a species of bark beetle, to be parasitized by nematodes. Now, he is trying to manipulate these nematodes to attack the bark beetle that carries Dutch Elm Disease.

Dr. William B. Nickle hopes the elm bark beetle can be debilitated

or sterilized effectively with parasitic nematodes. He theorizes that, like another nematized insect, the face fly of cattle, these beetle populations might be reduced to a level where they would no longer be a major problem. The elm bark beetle has no nematode parasites at present.

In his initial studies, Dr. Nickle learned that the nematode parasites, *Neoparasitylenchus rugulosi*, affect the reproductive behavior of shot-hole borers and finally kill them.

Normally, a female shot-hole borer penetrates the bark of a fruit tree,

leaving a shot-size hole. She then makes a gallery about an inch long parallel to the tree stem and lays eggs on both sides of the gallery. After hatching, the new insect larvae mine out lateral tunnels from the sides of the gallery, forming a pattern resembling legs of a centipede. Heavy infestations, especially on trees weakened by drought, wind, or mechanical injury, rapidly kill fruit trees such as cherry, peach, pear, apple, and choke cherry.

However, Dr. Nickle learned that when the female beetle is parasitized by the nematode, she makes horizontal galleries and doesn't lay eggs. After she dies, hundreds of nematodes emerge from her head.

These emerging nematodes are fourth-age male and female larvae which molt, become adults, and mate within two or three days in the gallery. Then the males die. The impregnated female nematode seeks out a larval bark beetle in a nearby gallery and enters the insect's body to start a new infestation. Inside the insect's body, the nematode takes nourishment and expands into the large, swollen, egg-producing form.

About the time the beetle becomes adult, the female nematode inside the insect lays her eggs. After hatching, the young nematodes continue growing and eventually exit from the beetle's head. The beetle is killed after she has transported the nematodes to a new gallery system where the nearby healthy beetles are attacked.

# Kill 'Em



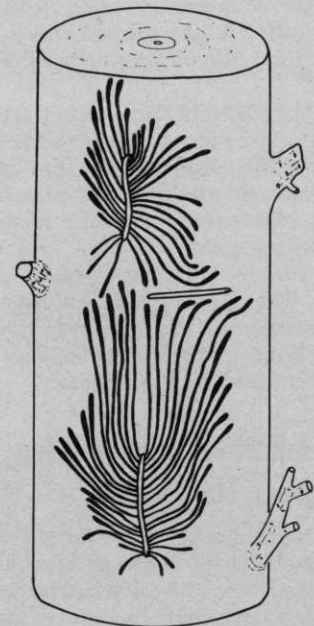
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Normal borer galleries run parallel to the branch with lateral lines formed by larvae. Parasitized borers mine horizontal galleries without lateral lines.



## industry people on the move



**JERRY PFARR**, former associate editor of Golf Digest magazine, has been named midwest facility development consultant for the National Golf Foundation.

\* \* \*

**GEORGE HARRISON** has joined the staff of Washington Tree Service through the purchase of a business division he was managing. Stan Raplee, president of Washington Tree, announced that all hydroseeding equipment and contracts have been purchased from Malmo Landscapers Northwest.

\* \* \*

**VERNON C. BALLARD** has joined TUCO Division of the Upjohn Company as the agricultural chemicals sales representative in Virginia and West Virginia.

\* \* \*

**E. T. WALGENBACH** is the new Northern California and Nevada representative for Union Carbide Corp.

\* \* \*

**DOUGLAS W. SCHIMMEL** has been elected vice-president, personnel, Velsicol Chemical Corporation.

\* \* \*

**WELTON W. MOOREHEAD** has been promoted to manager of Thompson-Hayward Chemical Company's Tulsa, Okla., branch office.

\* \* \*

**PAUL SANKER** is the new vice-president of oper-

ations of Valley Crest Landscape, Inc., division of Environmental Industries Inc., Encino, Calif.

\* \* \*

**RAY O. BENTLEY** has become branch manager of the New England division of Lofts Pedigreed Seed, Inc., Bound Brook, N.J.

\* \* \*

**DR. ELTON L. CLARK**, formerly general manager of the Chipman Division of Rhodia, Inc., has been elected a vice-president of Rhodia.

\* \* \*

**JERRY BOESEL** is the new northern California district manager for Rain Bird Sprinkler Manufacturing Corporation.

\* \* \*

**ROBERT L. SLEIGHER** is the marketing manager of Solo Motors, Inc.

\* \* \*

**DR. LOUIE T. HARGETT** has been named director of product development for the Chipman Division of Rhodia, Inc. Formerly of Geigy, he is an entomologist and plant pathologist.

\* \* \*

**DOW CHEMICAL COMPANY** has elevated C. Benson Branch to president and chief executive officer on the announcement that H. D. Doan is retiring.

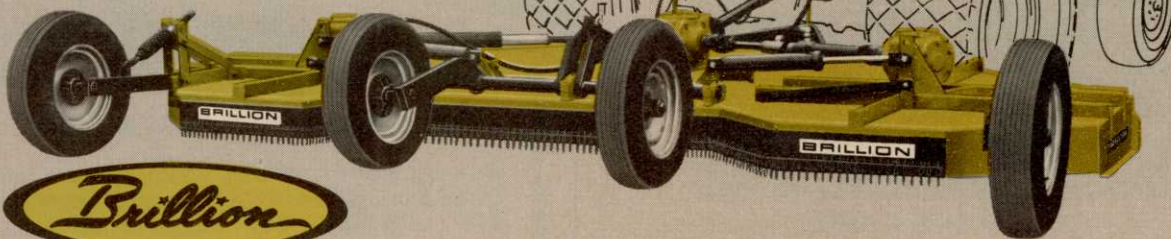
\* \* \*

**H. G. BOSCH** is the new president of Chemagro Corporation, Kansas City, Mo.

\* \* \*

**JAMES R. FISHER** has been appointed an assistant agronomist in the Turfgrass and Seed Inspection Service of Maryland's State Board of Agriculture.

## 180" Versa-Mower. Its wings float 60° up... 22° down.



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Stanley Clarke puts his new sand trap machine into action before the South Florida Golf Course Superintendent's Association.



William J. Brennan demonstrates the chemical spraying of golf courses by helicopter. Photos courtesy of Miami-Metro Department of Publicity and Tourism.

## Sand Trap Rig, 'Copter Seen as Labor Savers

Two Miami men are pioneering in South Florida golf course maintenance with imaginative labor-saving techniques, according to Paul Turcotte, president of the South Florida Golf Course Superintendents Association.

The two new approaches to solving ever-increasing labor costs are a riding-type, sand trap machine and chemical spraying by helicopter.

The sand trap machine was developed by Stanley Clarke, of Miami Springs, Fla. Former Vietnam helicopter pilot William J. Brennan has launched the aerial spraying of golf courses.

"Either golf course superintend-

ents have to mechanize or we go under, largely due to the present cost of hand labor," explained Turcotte, manager of the City of Miami LeJeune golf course.

"For example, it would take five men to rake the sand traps, but with this new machine one man can do the job in the same amount of time.

"Whereas it used to take a week to spray a golf course, you can now do

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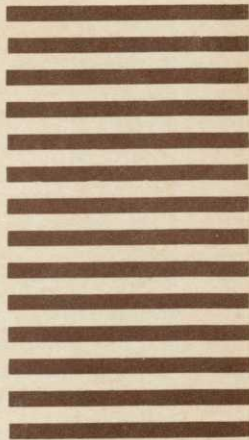
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it by helicopter in two or three hours and very accurately," Turcotte added.

The device Clarke designed looks a lot like the common power lawn mower which can be ridden. But the Trapmaster model can maintain 100 sand traps in an eight-hour day.

Powered by a seven horsepower, four-cycle gasoline engine, the Trapmaster can handle all types of contours, turning almost on a dime, and can also be used for dragging in top soil after top dressing, as well as raking.

The chemical spraying of golf courses by helicopter, though a fairly new concept in South Florida, has been applied in the northern United States and is similar to the accepted practice of crop-dusting.

Clarke, property manager at the LaGorce Country Club on Miami Beach, operates the Stanley Clarke Equipment Co., Inc., at 665 Mokena Dr. in Miami Springs. Brennan, a graduate of North Miami High, is with Crescent Airways at the West Perry Airport in Hollywood, Fla.

#### BOOK REVIEWS

**TURFGRASS PESTS.** Manual 41. \$2.00. Agricultural Publications, Office, University of California, Berkeley, Calif. 94720, or from Extension offices throughout the state.

A new University of California publication uses 72 color photographs and simple diagrams to explain turfgrass weeds and pests and how to control them.

The 50-page booklet has a particularly useful chapter for small turfgrass growers which tells how to measure your property and convert "gallons per acre" formulas to your use. Other chapter headings cover pesticide handling, weeds, insects, diseases, nematodes and rodents, and there is a glossary of terms.

Along with it comes a pamphlet describing up-to-date information on chemicals and recommended dosages for controlling pests and diseases. The larger manual makes no attempt to keep up with changing regulations or technology in the pesticide industry.

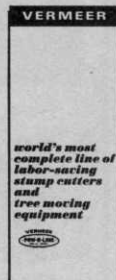
Noting that "a healthy grass is the best means of pest control," the publication warns growers to consider improving management practices as a first step in reducing pest problems before applying chemical controls.

## VERMEER'S 30-30 TREE SPADE ...



# does more than move trees.

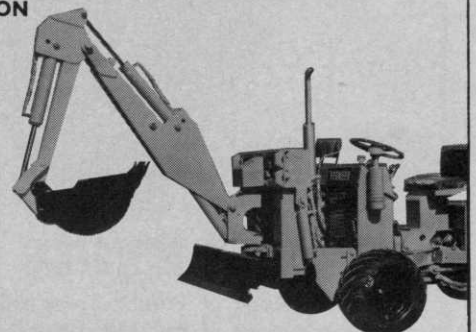
You can dig, move, ball and transplant large-size trees with Vermeer's 30-30 Tree Spade . . . but that's just half the story. We've mounted this economical, labor-saving, tree-moving unit on one end of Vermeer's heavy-duty, multi-purpose M30 tractor. On the opposite end you can quickly mount a hydraulic loader, or a combination blade-backhoe unit, or a big 5' wide dozer blade. And, for even more versatility, Vermeer has a heavy-duty trencher attachment you can mount in place of the tree spade . . . for open field trenching of service lines, irrigation lines etc. Here's a highly maneuverable, center-articulated, 30 hp unit, with fully enclosed drive system and 4-speed transmission—an all-in-one landscaping machine for nurseries, tree service firms, municipalities and landscapers. Let us demonstrate for you!



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## New England Producers Publish Sod & Soil Specs

A five-section specifications booklet for sodding and soil preparation has been published by the New England Sod Producers' Association, Inc.

Patterned after a Maryland-Virginia publication, the first of its kind, the New England booklet is available to architects, landscape and general contractors, building committees, grounds maintenance supervisors and homeowners. Copies are available from New England Sod Producers' Association, Inc., P.O. Box 6364, Sta. A, Hartford, Conn. 06106.

The five sections in the 16-page booklet consider: Specifications for subsoil preparation where topsoil is to be added; specifications for topsoil material and application; specifications for fertilizer and lime materials and final soil preparation; specifications for sod materials and installation; and specifications for maintenance of installed sod.

An appendix recommends varieties of turfgrasses best suited for the New England area.

trimmings

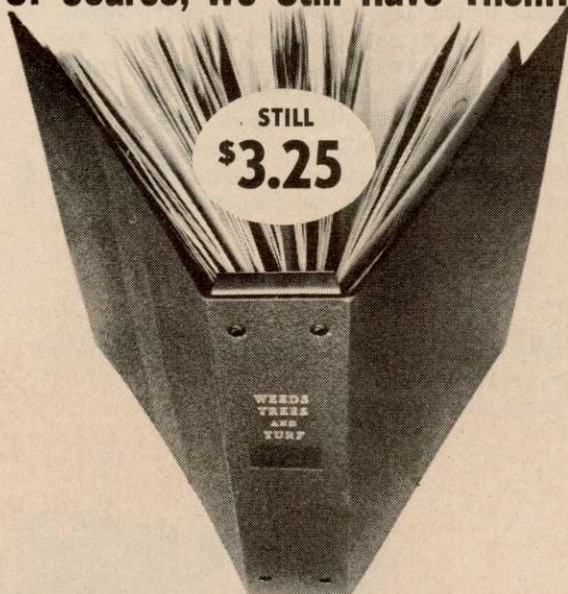


**DONALD S. REEVES**, 64, of Westfield, N.J., a vice-president of Asplundh Tree Expert Co., died March 22 of a heart attack. Reeves had been with the Jenkintown, Pa., tree company for 35 years and had been named vice-president and New Jersey area manager in 1956.

\* \* \*

**TOBACCO'S NICOTINE** is good for something, writes nurseryman Norman H. Cannon of Bridgeville, Del. "The holly midge, *Asphendylia ilicicola*, Foote is cause for failure of berries to turn red on trees of *Ilex opaca*. After three years of failure to obtain satisfactory midge control using the latest in systemics and insecticides, one researcher disgustedly blew cigarette smoke into a quart jar containing live adult midge. Based on trials in May, 1970, 98% control of the midge can be achieved by thoroughly spraying all inside surfaces of leaves, twigs, and branches of pistillate epacas with nicotine sulfate 40% at two tea-

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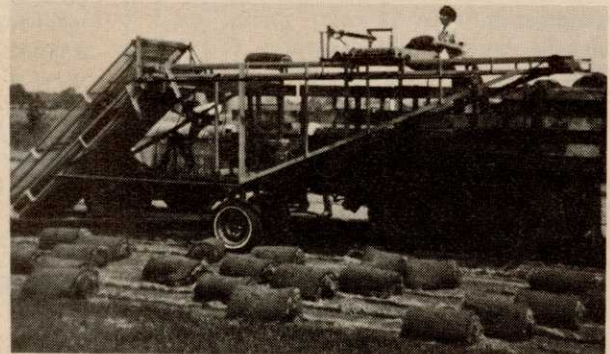
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spoons per gallon of water (soap flakes added). Timing of spray is critical. Application must be made on the fourth or fifth day after opening of the first bloom. A second spray, two or three days later is recommended."

\* \* \*

**TO PROVE DDT ISN'T HARMFUL**, a California pest control operator and his wife, Mr. and Mrs. Robert Loibl, are taking DDT pills. The dosage is said to be 300 times the average a person would consume in a normal daily diet. In fact, Loibl says, since he and his wife began taking 10 milligrams per day, he feels better, his appetite has picked up, his wife's dandruff has disappeared and her teeth and gums are healthier.

\* \* \*

**A SCHOLAR DOLLAR TOURNA-MENT** is being promoted by the Virginia Turfgrass Council to raise money for the Virginia Turfgrass Scholarship Fund. The council has asked each golf course superintend-

ent to hold a "Closest to the Hole" golf tournament each Saturday during the month of June. The entry fee of \$1.00 would be forwarded to the fund.

\* \* \*

**AN X-RAY MACHINE** to detect disease and insect infestations in trees has been developed by Picker Corporation. The device resulted from an idea conceived by USDA's Forest Service laboratory at Delaware, Ohio. The machine can X-ray thicknesses up to 16 inches.

**HOW DO YOU WASH** a dirty pine tree? In San Diego, park maintenance supervisor George Kempland went to the fire department. He had noted that firemen practiced their skills with periodic drills in a parking lot. Rather than just wasting the water, he proposed they wash trees for him while they practiced. A recent project involved washing the grit from about 100 pine trees in Presidio Park. The washing, said Kempland, is to reduce the possibility of pollution damage.

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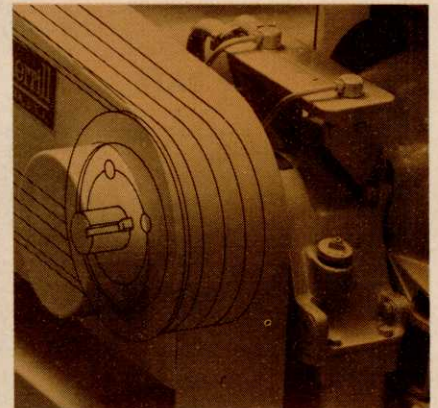


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