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on the move



**PENNSYLVANIA TURFGRASS COUNCIL, INC.**, has elected this leadership for 1971: President—E. R. Steinger; first vice-president—A. W. Wilson; second vice-president—Martin Stolpe; treasurer—Howard J. Miller; executive director—Fred V. Grau; and directors—Frank I. Shuman, Robert L. Coyner, Tom Mascaro, Frank Sirianni, Ken Beachley and J. W. Holman.

Presidential plaques, the first given, went to Alan Mock, T. L. Gustin, Joe Gackenbach, John Tenos, Harry Wilcox, Tom Mascaro, and Don Krigger.

\* \* \*

**HENRY S. BUNTING** has been named vice-president of Thompson-Hayward Chemical Company, Kansas City, Kan.

\* \* \*

**ROCKY MOUNTAIN SOD GROWERS ASSOCIATION** has been formed and these officers elected: President—J. R. Wilkins, vice-president of Green Valley Turf, Littleton; vice-president—Vic Johns, president of Mesa Landscaping Co., Colorado Springs; and secretary-treasurer—Allen Freedberg of Scien-Turf-Ic at Henderson, Colo.

\* \* \*

**DR. JAMES G. HORSFALL**, director of the Connecticut Agricultural Experiment Station, has received

France's highest agricultural award. He received the Order of Merit of Agriculture at the Seventh International Congress of Plant Protection, Sept. 25, in Paris.

\* \* \*

**GORDON CORPORATION** of Kansas City, Kan., has appointed E. K. Spring as "Trimec" sales manager. The patented herbicide mixture contains various concentrations, according to intended use, of 2,4-D, MCPP and Dicamba.

\* \* \*

**DALE R. CHRISTIANSEN**, director of recreation and parks for Berkeley, Calif., has become associate professor of park administration at California State Polytechnic College, Pomona.

\* \* \*

**THOMAS R. LOY** is the new manager of market development for biological chemicals for Velsicol Chemical Corporation.

\* \* \*

**THE UNIVERSITY OF FLORIDA** has selected Dr. Bryson L. James as professor and head of the Plantation Field Laboratory in Ft. Lauderdale. Dr. James, formerly assistant director of horticulture at Callaway Gardens, Pine Mountain, Ga., will coordinate research for nursery and ornamental plants and turf for residential developments, golf courses, and other recreational uses. He also will help supervise aquatic weed control and equine piroplasmosis research programs.

\* \* \*

**JAMES GARRISON** is manager of applications engineering for the commercial marketing department at Textron's Bell Helicopter Company.

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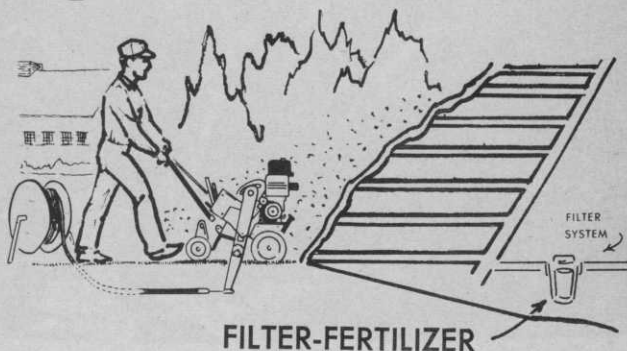
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# MUNICIPAL ARBORISTS:

# Street Lights a

**B**BETTER CARE for city trees can be expected, if for no other reason, from the fact that street lighting engineers and arborists have entered their fourth era of relationship: they're now cooperating with each other.

"Arborists are beginning to get a good understanding of the value of lighting; and lighting engineers are beginning to get a good understanding of the value of trees," Kirk M. Reid told the assembled Society of Municipal Arborists at its sixth annual meeting in October in Middleburg Heights, Ohio.

After progressing through the eras of shouting, grumbling, and learning, Reid said, "They've discovered their common goal is best serving the over-all public interest."

Reid, past president of the Illuminating Engineering Society and co-chairman of the Street Tree and Utility Conference, announced the selection of an SMA committee to work with lighting engineers to revise the manual for street lighting procedures and practices.

Committee members are Darrel Middlewood of Birmingham, Mich.; Joe Plante of Providence, R. I.;

Ralph Quinn, Jr., of Baltimore, Md., and Dick Boers of Toledo, Ohio.

Common problems have helped unite the groups, said Reid, naming three: vandalism, uncooperative property owners, and unsatisfactory employees. A discussion disclosed some others to work on.

"High intensity lights mounted six to eight feet above old ones have made additional trimming necessary," reported Joe Plante. "Guidelines on the reflecting quality of a tree are needed, and flush cuts should be made where possible."

Because new lighting can increase tree-trimming costs tremendously, Ralph Veverka, Cleveland city forester, felt that the question must be resolved on whether the responsibility and the cost should rest with the arborist or the utility.

"Blueprint placement" of utility poles without regard to trees that have been growing for years must end, added Joseph Krepop of Brooklyn, Ohio. Tom Tapp of Flint, Mich., cited an example—a light that ended up in the crown of a maple.

In Richmond, Va., the utility handles the trimming, said Jim Oates. Lamp size and location is deter-

mined by the municipality in Newark, N.J., added Robert Smith.

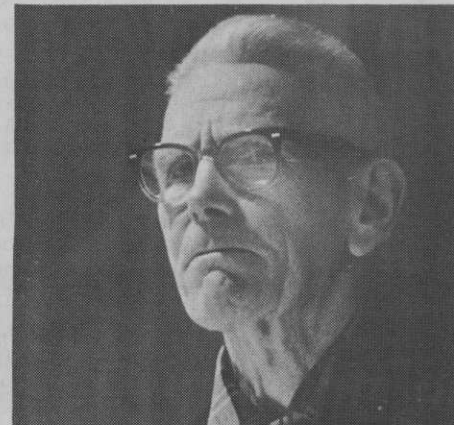
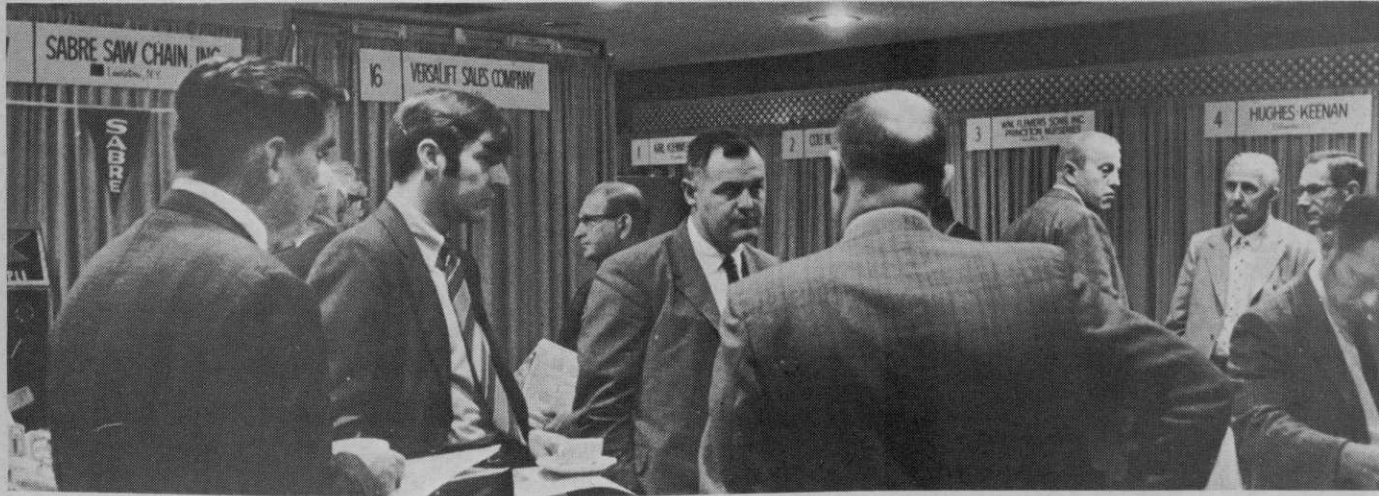
While there is a lot of talk about the value trees contribute to urban life, Dr. Ray Keen, horticulturist from Kansas State University, Manhattan, suggested that trees also could create slums.

Trees too big for the location and planted too close together have been known to make lawn-growing impossible and to cause constant paint-peeling on houses. People who care about the appearance of the place where they live then move out. The result, he said, is a steadily deteriorating neighborhood.

Reporting on the tree situation in Kansas, Keen said spraying had stopped completely in Manhattan. Topeka is spraying in parks only. Wichita is practicing intensive sanitation, taking advantage of the state law providing that if a private property owner won't take down a tree, the state will—and send him a bill.

"The big tragedy is in our smaller cities and towns," said Keen. "They don't have the trained specialists the big cities have."

The unique problem in the Heartlands—that once was prairie land,



# ees Can Mix, After All

Keen said, is that 85% or more of the city trees are elms.

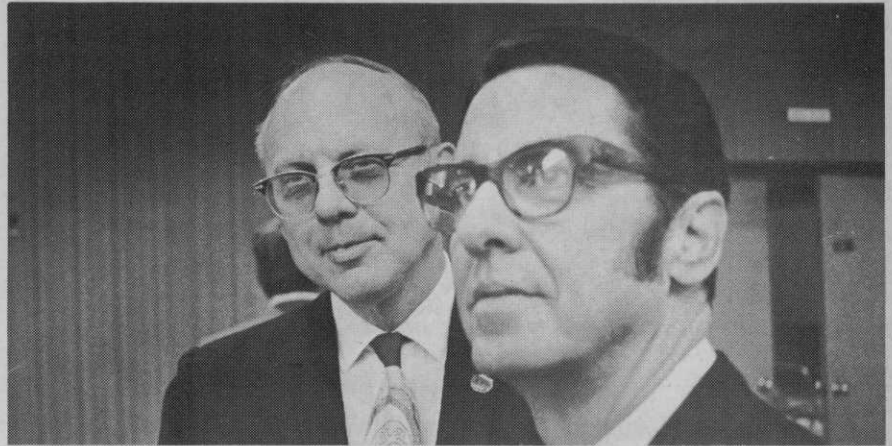
"Arbor Day years ago used to mean the youngsters trouped to the nearest stream and brought back either an elm or a cottonwood. We may thank our lucky stars for Dutch Elm Disease. It will give us a chance to do the job right.

"A lot better planting is needed. Arborists should be a part of overall city planning.

"What are you going to plant 20 years from now? Nurserymen should know your needs at least 10 years in advance."

Not enough study has been done to determine what effect trees have on climate and reduction of wind velocity, believes Keen. He added that the search must be hastened to find suitable trees now growing. "In some cases, we don't have time to breed."

Tree research for the artificial environment has been directed in the past largely toward selecting for shape, size, and color, said Dr. Charles L. Wilson, USDA researcher from the federal shade tree laboratory at Delaware, Ohio. Work is just beginning to select varieties with



Emilio L. Fontana, right, of Omaha, Neb., passed the presidential reins to Robert Miller, municipal arborist at Dayton, Ohio.

consideration, backed by research, given to salt tolerance; air, soil and water pollution; root system development in a variety of soil types and conditions; and pollution reduction capability.

We need to know more about container-grown trees, he continued, including which trees are best adapted, what kind of containers are best, and what soil types are best.

Tree breeding is highly important because it speeds evolution, he said, "but first we must sell the importance of urban trees before we can sell urban tree research."

An uppermost value of tree research, Dr. Wilson stated, is that "to elevate the profession of arboriculture, we must elevate the level of our knowledge."

Warren Edman, vice-president of roadway lighting for the Holophane Co., of New York City, demonstrated the advances in street lamps. He showed how light output had been increased many times and how new lamp globes had been developed to direct the light where it is best needed.

Light output has brought about greater spacing between poles. Globes have been developed to direct that light on a more horizontal plane. It means, he said, that more attention must be directed to objects, such as trees, that obstruct the light. Tree trimming is going to become more critical, he predicted.

Street lighting will continue to improve and the cost will become less than the cost of operating an automobile's headlights, he said.

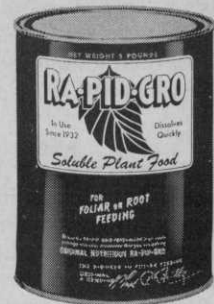
"I am confident we will see the day," Edman said, "when we will approach many of our cities at night and read the sign: 'Welcome, please turn off your headlights.'"

The arborists elected Robert Miller, municipal arborist of Dayton, Ohio, as president. Darrel Middlewood, superintendent of parks, Birmingham, Mich., was elected vice-president. Ed Scanlon, owner of Scanlon's Nursery, Olmsted Falls, Ohio, was re-elected to a three-year term as secretary-treasurer. Dick Boers, commissioner of forestry for Toledo, is the new member of the executive committee.



Coffee with commercial exhibitors provided a morning and afternoon break from adjacent educational sessions. Karl Kuemmerling & Co. brought its "traveling hardware store," left below. Richard Collins, sales representative, visits with Al DeShano, right, Condesco, Inc., Hamilton, Ohio, and Robert S. Miller of Dayton, Ohio. Near left is lead-off speaker Kirk M. Reid, past president of the Illuminating Engineering Society. Above, Frank Karpick gets the Sabre Saw Chain story from Ron Zinser, left, and F. D. Tubesing. (Ed. Note: Mr. Tubesing died unexpectedly Oct. 14 of a heart attack. He was 52.)

## KEEP AMERICA BEAUTIFUL

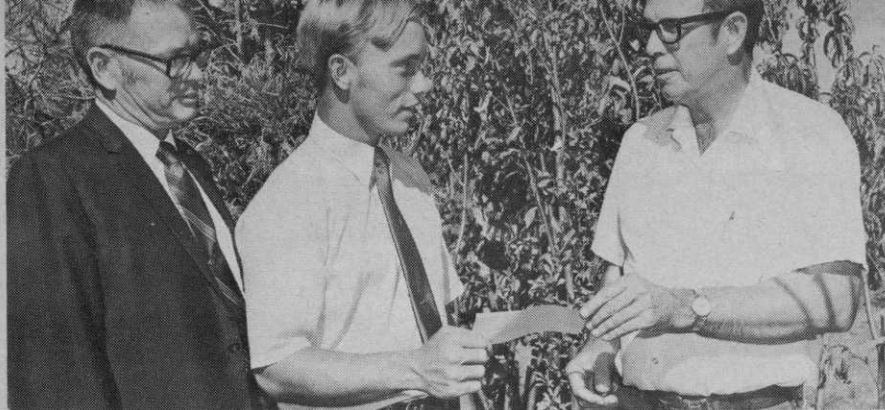


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## RAPID-GRO

For More Details Circle (109) on Reply Card



John M. White, center, sophomore horticulture major at New Mexico State University, receives a tuition scholarship check from Horace Woodburn, right, Garden Center Nursery, Las Cruces. Woodburn presented the check as president of the New Mexico Nurserymen's Association, donor of the award, as Dr. Fred Widmoyer, head of the NMSU horticulture department, looks on.

## AAN Publishes Nationwide Nursery Stock Locator Guide

A national source book of nursery stock, supplies and equipment has been published by the American Association of Nurserymen called the 1970 Stock and Supply Locator.

According to Robert F. Lederer, AAN executive vice-president,

"With more than 6,400 listings in 16 different categories of plant material and supplies, the Stock and Supply Locator is probably the most thorough reference guide existing for anyone who uses nursery stock. In addition, it is cross referenced for ease in locating nursery stock."

Copies are available from AAN, 835 Southern Building, Washington, D. C. 20005, for \$3.00 each.

## Landscape Maintenance Group Formed in Minnesota

Minnesota Landscape Maintenance Association was formally organized Sept. 22. George Lilli of Lilli Landscape, St. Paul, is president.

The need for cooperation among landscape maintenance firms has been a matter obvious to most of us for many years, Lilli said. The new organization, he believes, can more readily solve the numerous mutual and individual problems of landscape maintenance men.

Officers elected with Lilli are: Vice-president — Andy Anderson, Green Thumb, Minneapolis; secretary — Dwayne Albrecht, Albrecht Landscape, Minneapolis; and treasurer — Ed Oswald, Paradise Landscape, South St. Paul.

Landscape maintenance men interested in joining the new association should contact George Lilli, 105 Dell Lane South, St. Paul, Minn. 55119. In Minneapolis, phone 881-5554; in St. Paul, 739-1201.

## insect report



### TURF INSECTS CHINCH BUGS (*Blissus* spp.)

WEST VIRGINIA: *B. leucopterus* (chinch bug) damage heavy to several lawns in Kanawha County; damage moderate to lawn in Harrison County previous week.

PENNSYLVANIA: *B. hirtus* (hairy chinch bug) damaged many lawns in September. Statewide, but especially troublesome in eastern half of state.

### A MARCH FLY (*Dilophus orbatus*)

CALIFORNIA: Larvae and adults heavy in lawns at Loomis, Placer County, and Sacramento, Sacramento County. Swarms annoying homeowners. Many complaints from residents with mixed dichondra and grass lawns.

### WHITE GRUBS

UTAH: Damaged several Washington County lawns. OHIO: *Cyclocephala borealis* (northern masked chafer) grubs damaged lawns in Franklin, Licking, and Fairfield counties. Grubs about third instar. PENNSYLVANIA: *Cyclocephala* sp. averaged as many as 50 grubs per square foot, turf dead in Lawrence County.

### TWO-LINED SPITTLEBUG (*Prosapia bicincta*)

ALABAMA: Adults and nymphs heavy on centipede grass lawns in Dallas County.

### INSECTS OF ORNAMENTALS

#### AZALEA LACE BUG (*Stephanitis pyrioides*)

CONNECTICUT: Infestations on azaleas heaviest in years in Fairfield County.

#### MEALYBUGS

FLORIDA: *Rhizoecus* sp. eggs and nymphs moderate

on 65% of 1000 plants of Norfolk Island pine. (*Araucaria excelsa*) at Snead Island, Manatee County. CALIFORNIA: *Spilococcus implicatus* one per leaf on cypress trees in 0.5-acre planting at Aualala, Mendocino County. This is a new county record.

### A PSYCHID MOTH (*Apterona crenulella*)

OREGON: Larval cases collected at Baker, Baker County. This is a new county record.

### TREE INSECTS A CONIFER APHID (*Cinara palmerae*)

MARYLAND: Collected on blue spruce at College Park, Prince Georges County. This is a new state record.

### A MEGALOPYGID MOTH (*Norape ovina*)

SOUTH CAROLINA: Larvae collected from redbud at York, York County. This is a new state record.

### NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*)

VIRGINIA: Damage currently at peak in Coastal Plain. Light, 20% infestation, in pine plantations in Richmond and Essex counties. Heavy in young Virginia pine throughout southwest counties; moderate in loblolly plantations in Frederick County.

### NOTODONTID MOTHS

ARKANSAS: *Heptercampa manteo* (variable oak leaf caterpillar) heavy past few weeks in central and eastern areas. Trees nearly stripped of leaves, especially along Crowleys Ridge in eastern and northeastern areas. Heaviest infestations in 10 or more years. IOWA: *Dicentria lignicolor* defoliated linden, redbud, and maple trees at Leon, Decatur County, and fed on oak at Whitten, Hardin County. *Symmerista conicosta* and *Datana ministra* (yellow-necked caterpillar) currently defoliated 75-100 acres of timber in Lyon County; larvae 6-12 per leaf at one time.

# GLOBE, ARIZ., 2,4,5-T CAPER

## Much Ado About Nothing

Herbicides applied to control brush in the Tonto National Forest were not responsible for most of the injury to plants, any injury to animals, and may have been associated with one minor case of human illness reported in the nearby Globe, Ariz., area last year, a panel of scientists concluded in a U. S. Department of Agriculture study.

The report is the result of an on-site inspection last February by the panel and subsequent laboratory analyses of soil and animal tissue samples collected in the Globe area in addition to the herbicides used on the spray project. The investigation was undertaken in response to charges of damage from the spraying raised by citizens in the area after the herbicide silvex and some 2,4,5-T, together with small quantities of diluted 2,4-D and 2,4,5-T, were aerially applied by the Forest Service in June 1969 to control chaparral on 1,900 acres in the Kellner Canyon-Russell Gulch section of the Pinal Mountains.

The investigating panel consisted of scientists from the Departments of Agriculture, Interior, and Health, Education, and Welfare, and from the National Academy of Sciences, with observers from the Office of Science and Technology and the Arizona Extension Service.

The report stated that the deformity seen in the goat and duck examined in the Globe area were not the result of the chemicals used in the spraying project. The deformed goat, born about five years prior to the 1969 spraying, was caused by severe nutritional deficiency. The duck, hatched four miles away from the site of herbicide application, had a slipped tendon. This condition is not uncommon in fowl and it could not have been caused by the 1969 spray because hatching started before spray application.

"Human illnesses reported were those that occur commonly in a normal population," the panel said, pointing out that it had contacted nine of the 13 physicians serving the Globe area in the course of the investigation. The only case of human illness that

may be related to the spraying is eye irritation and skin rash in one individual who had steam-cleaned herbicide barrels for the Forest Service in previous years, it was indicated.

The report said that some herbicide damage to vegetation occurred on private property near the spray project either from direct overflight or from drift. However, insects, disease, woodpeckers or sapsuckers, low soil moisture, and air pollution from a nearby copper smelter were also said to be contributing factors to the plant damage observed in the Globe area.

Many of the original allegations of injury from the spraying were related to the possible presence of a contaminant, tetrachlorodibenzo-p-dioxin, in the chemicals used in the project. Analysis of the silvex used in the spraying, and some of the 2,4,5-T, showed that only very low amounts—less than 0.5 parts per million (ppm)—were present. The soil samples taken from spillage areas on the heliports contained silvex but no 2, 4,5-T, and less than 0.2 ppm of the dioxin. No silvex or 2,4,5-T residues were detected in liver and muscle tissues from an animal slaughtered shortly after the spraying.

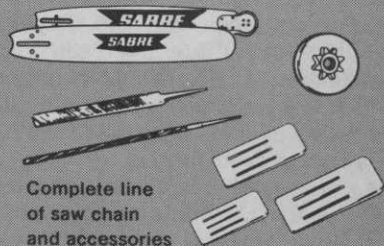
The chaparral control project in the Pinal Mountains of the Tonto National Forest was initiated in 1965 by the Forest Service with the approval of the Federal Committee on Pest Control. The objectives of the program were to manipulate dense brush cover so as to increase water yield and improve soil stability, improve wildlife habitat, increase livestock forage, reduce fire hazard, and provide better recreational opportunities for hikers, campers, and hunters.

After citizens protested, the chaparral project was suspended Oct. 16, 1969, pending a re-examination of all environmental aspects.

The investigating panel was headed by Dr. Fred H. Tschirley, Assistant Chief for Crops Protection Research, Agricultural Research Service, Beltsville, Md.



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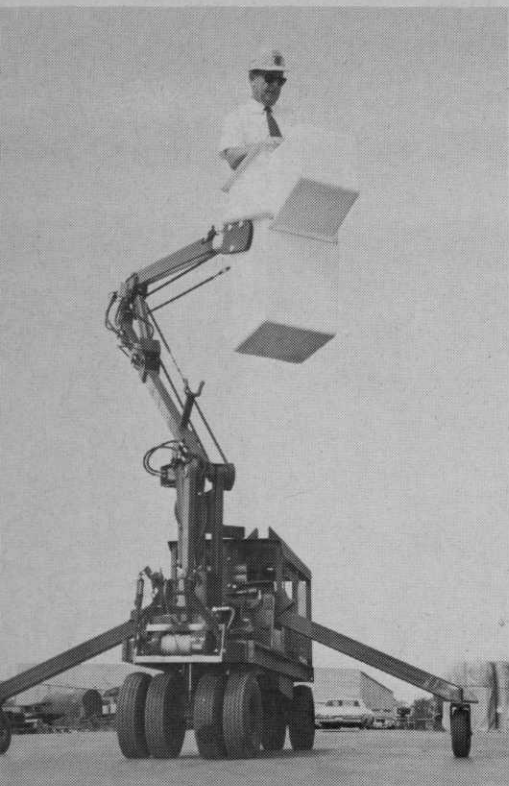
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## Davey Tree Buys Company; Enters Equipment Field

Alexander M. Smith, president of Davey Tree Expert Co., headquartered at Kent, Ohio, has announced the purchase of a Virginia nursery and an interest in a Colorado equipment company.

Ridgwell Nursery Company at Virginia Beach becomes a part of the nationwide Davey family. Former owner William D. Ridgwell becomes the Davey area tree care representative, responsible for tree-moving and landscaping.

Ridgwell also will operate a new Davey Tree Garden Center, offering a complete line of plant materials and gardening supplies at the nursery site at 469 S. Lynnhaven Rd. The garden center is scheduled to open in the spring.

Davey Tree now claims complete landscaping and yard-care services for the Norfolk-Williamsburg-Virginia Beach areas.

Davey's entry in the equipment field is through an interest in the Mini-Lift Company of Denver.

The company has initiated manufacture of a self-propelled lift basket that will safely lift a 250-lb.

load 23 ft. in the air, and yet pass through a 7x2½-ft. opening.

Operation of the Mini-Lift is accomplished by the man in the basket, or an operator on the ground. The unit is designed for tree trimming in confined areas on electric and telephone utility lines, or for use inside industrial buildings, or warehouse aisles. The Mini-Lift's eight balloon tires prevent damage even to wet lawns.

## Smithco, Inc., Buys Thuron Line of Spray Equipment

Smithco, Inc., of Wayne, Pa., has purchased Thuron Sprayer Manufacturing Co. of Dallas, Tex. In announcing the acquisition, effective Sept. 22, President Ted Smith said the expansion was another step in the development of systems for efficient turf maintenance. Smithco is the developer of a line of small, mobile work carts for golf course and other turf maintenance personnel. Thuron makes a wide range of sprayers and spray equipment for golf courses, parks, state and agricultural use. All inquiries regarding Thuron sprayers should now be addressed to Smithco, Inc., Wayne, Pa.

## Aldrin, Dieldrin Called Essential for Nurseries

Withdrawing aldrin and dieldrin from use could be disastrous for some nurserymen, the U.S. Department of Agriculture has been told.

American Association of Nurserymen has asked that registered use not be withdrawn because there are no adequate substitutes.

A survey of members indicated these materials are primarily used to meet federal and state quarantine requirements, AAN said, and that without these materials members believe nursery stock, especially balled and burlapped . . . could not meet federal and state quarantine requirements.

"If the quarantine requirements cannot be satisfactorily met, the only alternative is to cease producing nursery stock in the quarantine regulated areas. This would be disastrous for many nursery firms and would seriously reduce the supplies of nursery stock needed for environmental improvement plantings."

AAN also said that one possible alternative for aldrin and dieldrin—chlordane—can be used only when applied to the soil as a preplant treatment. "However, in the case of more mature nursery stock where tillage is neither practiced or ad-

visable, chlordane cannot be substituted. This means that in many situations there is no alternative."

AAN listed a number of reasons that registered use of the two pesticides for the control of quarantine insects and those insects for which there is no other known control should not be withdrawn. Among those reasons were:

1. The bulk of nursery use of these chemicals is for quarantine purposes applied under the careful supervision of state or federal inspectors.

2. Quarantines prevent the long-distance spread of imported and other hazardous soil-inhabiting insects thereby delaying or reducing pesticide needs.

3. The eradication of hazardous soil insects in the nursery, possible with dieldrin and aldrin application by experienced personnel, reduces the overall potential for environmental contamination over that which would occur if control is left to homeowners and others less well informed as to what pest is present, which pesticide to use and how to properly apply the pesticide.

4. Controlled use of the chemicals in the nursery effectively reduces

the general spread of these insects, thereby gaining more time for research to develop satisfactory alternate controls.

5. Alternatives to persistent pesticides as dieldrin and aldrin applied to the soil to control the insect in the larvae stage are pesticides to control the adult insect. These require very precisely timed, repeat foliar applications thereby reducing the potential for success. Unfortunately, many of these alternates have very low mammalian toxicity ratings thereby exposing man and any small animals present to the extreme hazard of sudden death.

6. Use of dieldrin and aldrin is needed to meet the phytosanitary requirements for nursery stock to be exported to certain foreign countries.

7. Scientific monitoring studies continue to indicate that pesticides, including the persistent pesticides dieldrin and aldrin, when applied according to USDA recommendations, do not create hazardous contamination or build-up. Reckless and improper use by careless or uninformed individuals continues to be a greater problem than that of the chemicals.

## Double-Action Herbicide Getting USDA Evaluation

An experimental chemical with an unusual double action against both broadleaf and grassy plants is being evaluated by the U.S. Department of Agriculture.

A commercially-developed herbicide, known by the code number 6706, is closely related to the older compound, pyrazon. But unlike pyrazon which causes growth inhibition, desiccation, and death of green foliage, 6706's first symptom is the development of white foliage in plants. This closely resembles the action of other herbicides that prevent greening in plants.

Studies show that 6706 acts herbicidally like pyrazon by direct inhibition of a step in photosynthesis. Though pyrazon and 6706 are equally phytotoxic in this reaction, the experimental chemical has an additional herbicidal advantage. It remains phytotoxic in treated plants whereas pyrazon is rapidly inactivated in most plant species.

Time of treatment appears to govern which mechanism is principally involved. When 6706 is applied



New York State Highway Department has just purchased this group of 12 slope tractor-mowers from Slope Tractor, Inc., Harper, Kan. The tractor in the foreground is simulating mowing a slope of up to 30 degrees while operator and controls remain level.

preemergence, the plants come up—white or red depending on whether the plant can make red anthocyanin pigments—and grow as long as food reserves in the seeds hold out. Herbicidal action results from the lack of functional chloroplasts necessary to manufacture products of photosynthesis for continued growth.

In contrast, when 6706 is applied to established green plants, herbicidal

action and growth control result from the direct inhibition of photosynthesis in the preformed functional chloroplasts. And should new leaf tissue develop on the treated green plant, the direct inhibition action is supplemented by the failure of these new leaves to develop green tissue. Thus, photosynthesis is prevented by two different mechanisms in the foliage developed before and after treatment.

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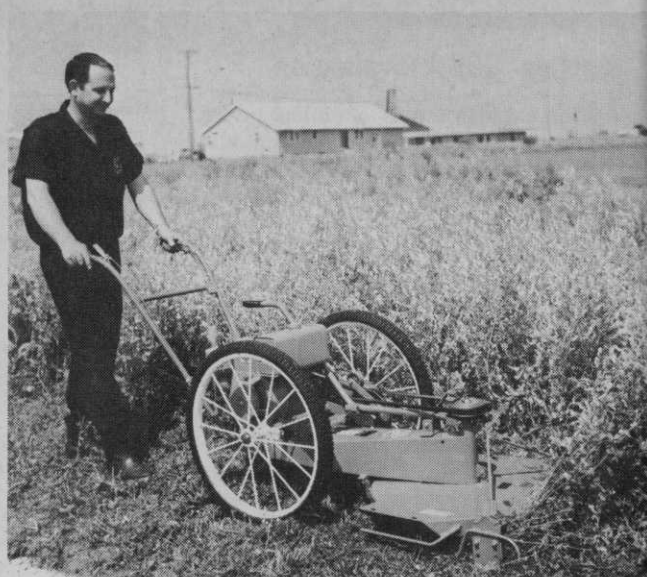
**DECEMBER 2-3**

Sheraton-Eastland Hotel, Portland, Maine



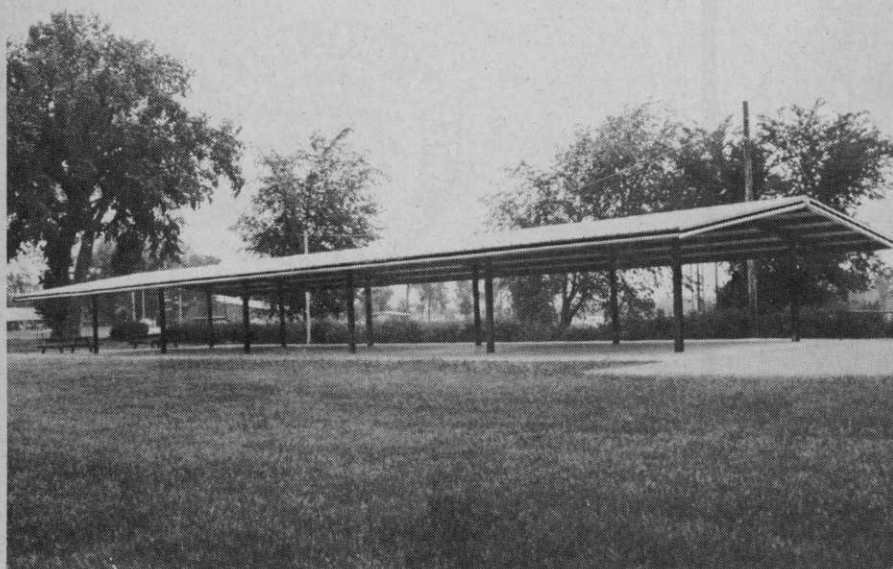
**HEAVY BRUSH/GRASS TRACK-DRIVEN MOWER, Heath International, Inc., Richmond, Mich.**

Heath's J-5-T is a combination of a J-5 track-driven vehicle made by Bombardier, Ltd., Valcourt, Quebec; newly designed universal three-point free floating hitch (patent pending); a hydraulically driven Bush-Hog mower, and a hydraulically actuated front piling blade that also serves as a counter weight for greater stability. Cutting speeds range from 1 to 12 mph (5-ft. path). Top speed is about 20 mph. Second operating configuration, the J-5-T Fire Fighter, utilizes the SIECO plow to establish 10-ft. fire lanes at speeds up to 15 mph. For more details, circle (701) on the reply card.



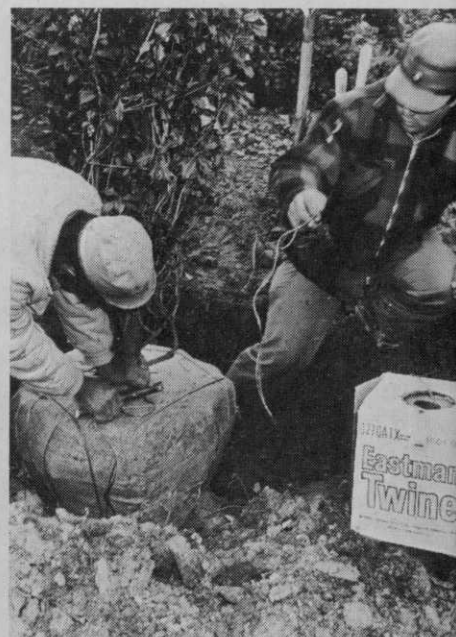
**BRUSH TO LAWN MOWER, Roof Manufacturing Co., Pontiac,**

Roof's VP-75 is called an extremely simple, tough, totally reliable single-belt machine with excellent cutting versatility. For clearing brush and timber, the unit can be equipped with a 20" blade; one man easily changing the blade with a wrench. For fine lawn mowing, the same unit can be equipped with a lawn shield unit with runners, or the 30" lawn shield unit with swivel glide caster wheels. A 26" weed cutting kit is also available for use with the basic machine frame. Large operation is made easier by equipping the VP-75 with an riding operator's cart. The machine is powered by a 7 hp engine. For more details, circle (702) on the reply card.



**MODULAR PARK SHELTER, Cuckler Building Systems, Monticello, Ia.**

A pre-engineered modular park shelter, this building can be erected by a local builder or supplied as a package for customer erection. Basic shelter, with three structural steel frames on 20' spacing, covers an area 52'x36'. The six-frame shelter illustrated has three additional 20' modules. Roof extends 8' beyond columns on sides and 6' at ends. Eave height is 8'. Twenty-six gauge roof panels with a 20-year color coating are attached to steel Z-purlins on 4' centers. Package includes frames and frame bracing, purlins, roof panels pre-cut full length, fascia, rake flashing with inset color stripe, boxed eave flashing, rubber ridge closure strip and steel ridge cap, and self-drilling fasteners for attaching roll panels to purlins. For more details, circle (705) on the reply card.



**PLASTIC TWINE, Eastman Chemical Products, Kingsport, Tenn.**

After three years use, Powers Taylor of Dale Nurseries, Hawthorne, N.Y., reports Polypropylene Tying Twin is superior to twine because of its inherent resistance to mildew and the damaging effects of weather. He says plastic twine is stronger and easier on the hands. For more details about Eastman Twine, circle (706) on the reply card.



ADVANCED PRODUCTS FOR ENVIRONMENTAL SANITATION

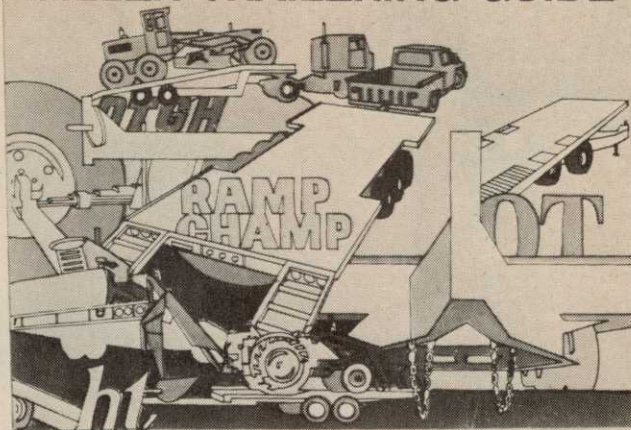


DEODORIZERS FLOOR CARE SANITIZERS PESTICIDES HERBICIDES

PRODUCT CATALOG, Hub States Corporation, Indianapolis, Ind.

This quick-reference catalog uses brightly colored symbols and page indexes, clearly dividing the company's environmental sanitation products into five easy-to-find sections. The products are: Cleaners and deodorizers; floor care products; sanitizers; pesticides; and herbicides. The catalog is free. For more details, circle (703) on the reply card.

MILLER TRAILERING GUIDE



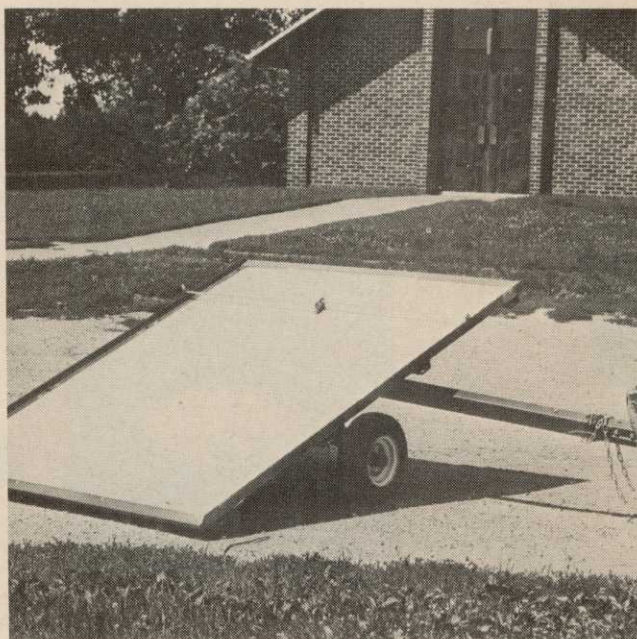
TRAILERING GUIDE, Miller Tilt-Top Trailer, Inc., Milwaukee, Wis.

Miller's 24-page booklet is a combination catalog and manual on trailering safety. The safety aspects are covered in detail, containing suggestions useful to the novice and the professional. The catalog section features include a list of construction equipment, by model and manufacturer, and a matchup guide indicating the Miller trailer specifically designed to handle the piece of equipment. The company claims the quick-loading and unloading features of its trailers permit the user to cut unprofitable idle time of working machinery by moving it from job to job efficiently. For a free copy of the catalog, circle (704) on the reply card.



ANALYSIS OUTFIT, LaMotte Chemical Products Co., Bertown, Md.

The AM-31 provides chemicals for making 250 tests and includes 50 resealable soil sample bags. Individual models of chemical test equipment for making soil pH tests for determining levels of nitrogen, phosphorus and potassium are furnished in polypropylene cases. The pH tests are made by means of a unique comparator that provides permanent color standards for the following values: 4.0, 5.0, 6.0, 6.5, 7.0, 7.5, 8.0 and 9.0. Kit also contains complete instructions and soil analysis report forms. For more details, circle (707) on the reply card.



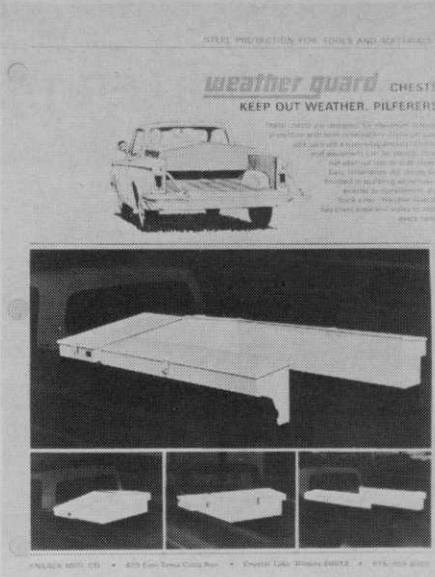
EQUIPMENT TRAILER, Clark Manufacturing Co., Atherton, Mo.

Load capacity is 1,000 lbs. Deck is 6'x8' replaceable pentatreated, exterior grade plywood. Remove one pin and the deck will swivel and tilt forward or backward for easy loading and unloading. Trailer has all-steel frame, automotive type springs and demountable wheels equipped with tapered roller bearings. Standard equipment includes combination stop, tail and directional lights, reflectors and safety chains. Sideboards are optional. For more details, circle (708) on the reply card.



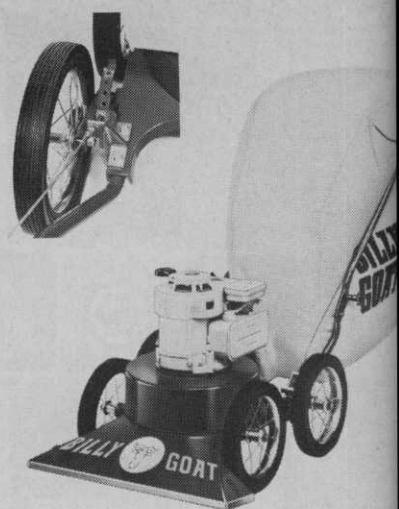
**EQUIPMENT SERVICE LIFT,**  
G & H Products, Inc., St. Paris, Ohio

The new G & H Uni-Lift safely lifts 1,000 lb. loads to any working height up to 80" in less than 30 seconds. Rugged steel construction. Motor has automatic overload protection and a safety chain that locks into the bed when it is at working height. Heavy steel runways are 72" long and adjustable in width from 17" to 46". The Uni-Lift can be moved from spot to spot, if required. For more details, circle (709) on the reply card.



**WEATHER GUARD CATALOG,**  
Knaack Mfg. Co., Crystal Lake, Ill.

A newly revised edition of the Weather Guard catalog has been announced. The catalog illustrates several improvements to the line of truck chests and accessories. It also publishes changes to ordering procedures made necessary as the result of the recent purchase of Weather Guard by Knaack Mfg. Co. Copies are available free by circling (710) on the reply card.



**VACUUM IMPROVEMENTS,** Billy Goat  
Industries, Grandview, Mo.

Cast aluminum snout on the KD40 five height settings, from 3/8" up to 80". Operator changes height by releasing remote lever while pushing down on the handle. Steel impeller pulverizes leaves, twigs, thatch, clippings, and other litter to one-tenth original size. Bag is mildew-resistant. Optional 1/2 inch diameter flexible hose can be used to clean shrubbery. For more details, circle (711) on the reply card.



**PRUNING SAW,** Village  
Blacksmith, Watertown, Wis.

Electric tree surgeon pruning saw reaches 15 ft. into tree. Called the first adjustable electric "vertical action" remote control reciprocating pruning saw with a 15 ft. aluminum pole and drive shaft power head that removes branches 3 to 4 inches in diameter plus trash and twig growth without injuring tree. For more details, circle (715) on the reply card.



**SPRINKLER PATTERN SPRAY GAUGE,** Larson Co.,  
Santa Barbara, Calif.

Fast and accurate, this gadget for checking precipitation rate also indicates distribution efficiency of sprinkler irrigation system. Using a set of 10, a grounds superintendent can measure irrigation in about 5 minutes. When just 0.05 inches of water is collected in the cup, the signal flag floats free and drops by gravity. For details, circle (716) on the reply card.



**GASOLINE-POWERED PRESSURE WASHER/SPRAYER,**  
L&A Products, Inc., St. Paul, Minn.

L&A Model 6030 brings power cleaning to remote job sites where running water and electricity aren't readily available. Water supply may be from a storage tank or garden hose. Powered by a 4-cycle, 7 hp engine. Applies solutions at 3.2 gpm at 500 psi pressure. Unit features complete remote control starter and a remote control on the gun. Three spray patterns — 0 degrees, 15 degrees, and 45 degrees. Fourth position provides low volume at 100 psi pressure. For more details, circle (717) on the reply card.