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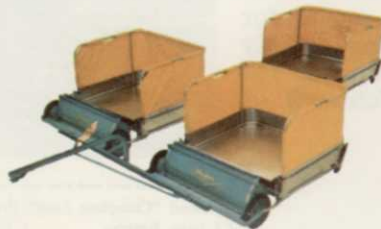


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Boston Tree Party Of ISTC Slated For Aug. 12-16.

Late summer in New England will beckon arborists across the U.S. when the International Shade Tree Conference holds its 49th convention in Boston in August.

Dates of the meeting are August 12-16. A pre-convention meeting of chapter presidents and past presidents will begin on August 11.

Official opening is slated for early Monday morning. This will be followed by an introduction to the Arnold Arboretum by Dr. Richard A. Howard, director.

Hyland R. Johns, Jr., Asplundh Tree Expert Co., will review the new pesticides applicator regulations. Methods of erosion control using wood chips and native plant material will be presented by Joseph L. Beasley, highway landscape supervisor, Massachusetts department of public works.

Dr. John W. Andresen, department of forestry, Southern Illinois University, Carbondale, Ill., will speak on the status of research in the shade tree industry. He will be

followed by Dr. Gordon King, arboriculture department, University of Mass. who will discuss tree care in Europe.

The second day will be devoted to touring the Arnold Arboretum and field demonstrations by exhibitors.

The Wednesday session will be divided into three groups, utility arboriculture, municipal arboriculture and commercial arboriculture. Topics discussed in the utility section include: public relations and line clearance by Robert J. Kelly, Detroit Edison Co., alternatives to chemical brush control on transmission lines by G. A. Kihl, Public Service of Indiana; and a panel on right-of-way clearing, brush disposal and aesthetics, moderated by Richard E. Abbott.

In the session on municipal arboriculture, Jack Rogers superintendent of street trees, City of Los Angeles, will discuss planting trees along city streets. William T. Bell, street tree superintendent, Long Beach, Calif. will lead a discussion on the role of the Municipal Arborists Association.

Effective treatment for controlling bark borers will be the topic of Dr. David Neilson, department of en-



Convention site, Sheraton Boston.

tomology, Ohio Agriculture Research and Development Center, Wooster, Ohio. He will be the first speaker in the commercial arboriculture group. Following him will be a speech on getting your message across by Theodore Stamen, agriculture extension agent, Univ. of Conn.

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DuPont's T. C. Ryker Retires After 26 Years

Dr. Truman C. Ryker, product development manager for seed and soil fungicides of the Du Pont Company's biochemicals department, retired in May, completing 26 years with Du Pont.

The plant pathologist spent six years in research on rice disease at Louisiana State University and started with Du Pont as a field biologist in Baton Rouge. He came to Wilmington in 1950 as development and technical service representative and since 1964 has been product development manager. During this period he has been concerned with seed and turf fungicides and the development of new crop fungicides.

(Editor's Note: "T. C." has been an authority and generally an ambassador of good will in the development of Benlate benomyl fungicide as an aid in the control of Dutch Elm Disease. His energy and enthusiasm in helping to conduct meetings, his unquestioned expertise in the field of plant pathology, and his devotion to Du Pont and the protection of crops and horticultural plants have placed him at the pinnacle of his outstanding career. Few plant pathologists there are who do not personally know of or have not experienced the excellent work of T. C. Ryker. He has the rare gift of knowledge, wit and boyish energy.)

Dr. Ryker is a graduate of Mississippi State College. He received his master's degree from Louisiana State University and his doctorate from the University of Wisconsin. He is a member of the American Phytopathological Society.

T. C. retires to his home in Wilmington, Delaware where he will be available for consultation services.

2,4-D Formulation Added To Velsicol Line

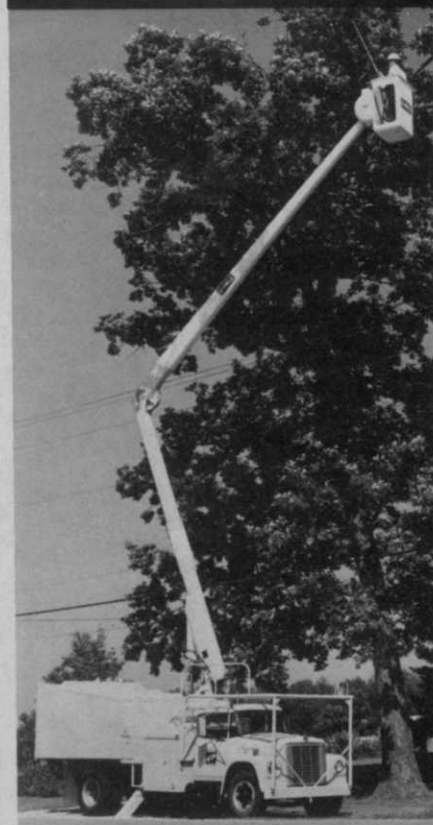
Velsicol Chemical Corporation has introduced a new 2,4-D amine formulation for professional weed control in turf according to a company announcement.

L. E. Carls of Velsicol said the new product "fills a void" in the company's growing line of herbicides and insecticides. Velsicol also manufactures and markets Banvel herbicide, Banvel + 2,4-D herbicides, and offers a complete line of

chlordane and heptachlor insecticide formulations. Bandane herbicide is the company's crabgrass control product.

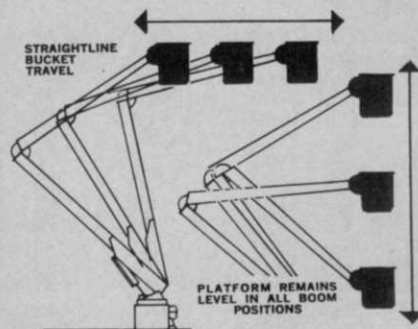
The new 2,4-D amine contains the equivalent of four lbs. 2,4-D acid per gallon, and is economical and effective for controlling many weeds commonly found in turf, along roadsides and fencerows, in grass waterways and drainage ditches. These include: bindweed, burdock, bur ragweed, cocklebur, ground ivy, lambsquarter, morning glory, nutgrass, plantain, purslane, and wild onion.

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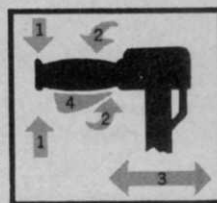
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LARGE TREE MOVING

(from page 21)

of the root system is retained on a tap-rooted tree than on a comparably sized lateral-rooted tree, when both trees are woods collected. Woods collected trees with lateral root systems should be dug with a larger diameter root ball than comparably sized tap-rooted trees. In the nursery, where root pruning is practiced, the original assumptions do hold true, and the tap-rooted trees are the ones which require the larger diameter root ball.

Certain tree species are very susceptible to damage from insects, diseases, and climatic conditions. Susceptibility increases when these trees are weakened by root losses during transplanting operations. These tree species and their primary destructive agents include:

American Arborvitae	—wind burn or desiccation
American Elm	—Dutch Elm Disease
Red Oak	—Oak Wilt
White Birch	—Bronze Birch Borer
White Pine	—White Pine Blister Rust

These species, along with others having a high susceptibility to damage, require considerable care in transplanting because of the increased possibility of loss. We have stopped moving American Elm, Red Oak, and White Pine at the request of the Minnesota State Department of Agriculture. The high incidence of Dutch Elm Disease, Oak Wilt, and White Pine Blister Rust in Minnesota has led to this decision. None of the transplanted trees were actually infected by the diseases, but the potential is still present and can not be ignored.

Like any new technique, our trans-

planting program has produced its share of disappointments. These disappointments did, however, point out how we could improve our transplanting procedures. Project 6 (Table 3) had the lowest survival rate (73%) of any of our projects. The 18 trees that were lost died because of inadequate watering. Delays in watering of one or two days duration occurred at critical times during the hot, dry, growing season. These repeated delays permanently weakened the trees and many were unable to survive in this weakened condition.

Many of the trees on Project 2 were comparatively large Burr Oak and Sugar Maple. These 8-inch and larger trees were moved with the 72-inch clam digger. Because of the moving chain that cuts through the soil, this machine shakes the root ball while digging the tree. The root system remaining with the tree often receives serious damage from this shaking. In spite of proper pruning and adequate watering, massive crown dieback occurred, probably as the result of damaged root systems.

The 72-inch clam is an obsolete piece of equipment which we no longer use extensively. Because of the moving chain, breakdowns are common and maintenance costs are high. Yet, the 72-inch clam is still the easiest and fastest way to move trees over 6 inches in diameter. Today, we limit its use to trees in the 6 to 8 inch size range, and we only move a few of these large trees on each of our projects.

Our cost for transplanting large trees has varied from a low of \$29 per tree to a high of \$268 per tree (Table 3). The average cost per tree moved over all of our projects is \$132. Most of our tree moving has been accomplished by prime contracts let on a competitive bid basis.

TABLE 3. Summary of Project Survival and Cost

Proj. No.	Season Moved	Number Moved	Number Living	Percent Survival	Project Cost	Unit Cost	Survival Cost
1	Fall, 1968	179	179	100	\$21,865	\$122	\$122
2	Spr., 1969	70	56	80	8,330	119	149
3	Fall, 1969	88	81	92	7,893	90	97
4	Fall, 1969	117	94	80	12,870	110	137
5	Fall, 1969	118	106	90	12,980	110	122
6	Spr., 1970	70	52	74	6,815	97	131
7	Spr., 1970	5	5	100	875	175	175
8	Spr., 1970	30	25	83	5,250	175	210
9	Spr., 1970	97	91	94	2,861	29	31
10 ²	Fall, 1970	96	90	94	25,726	268	286
11	Spr., 1971	53	48	91	5,290	100	110
12	Spr., 1971	57	56	98	2,888	51	52
13	Spr., 1971	43	41	95	2,176	51	53
14	Fall, 1971	118	93	79	20,886	177	225
15	Spr., 1972	60	60	100	13,860	231	231
16	Spr., 1972	209	209	100	39,564	189	189
17	Fall, 1972	172	172	100	20,468	119	119
18	Fall, 1972	144	144	100	17,353	121	121
19	Fall, 1972	27	27	100	2,783	103	103
20	Wtr., 1972	17	17	100	2,465	145	145
TOTALS Incl., 1972		1770	1646	93	\$233,198	\$132	\$142
Before 1972		1141	1017	89	\$136,705	\$120	\$134

² Project costs include a two year experimental watering program.

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However, some trees were transplanted through supplemental agreements in general highway construction contracts, and some trees were moved by our own maintenance forces using rented equipment. These latter two means of transplanting have usually resulted in higher and lower costs, respectfully. Normally, bids of approximately \$120 per tree can be expected if the transplanting is done by prime contract with a minimum of 80 trees to be moved.

Factors which affect this bid price

are:

- the number and size of trees to be moved,
- the distance of the haul (15 miles or less),
- accessibility of the tree source and planting sites,
- the amount of post-transplant work required.

Contracts which include a plant establishment period (1 year of watering and care) have exceeded our average price by as much as \$98 per tree. However, experience has

shown that \$78 per tree is a realistic cost estimate for this added work. All things considered, our average cost of \$142 per surviving tree (Table 3) is very economical, indeed, when compared with the costs of installing comparably sized trees by other methods.

Large, transplanted trees have many uses, especially in a highway situation. Besides blending the highway into its surroundings, large tree transplanting provides:

(continued on page 54)



This Jack Pine was dug with a 42-inch spade. Note that the root system was retained. Tree is about 2½ inches in diameter.



Root system retained on a 2½ inch diameter Bigtooth Aspen when dug with a 42-inch spade.

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TVA'S 3-D PROGRAM

from page 14)

chemical maintenance is by the basal method using 2,4,5-T esters and diesel oil mixtures. Tordon 10K pellets are used for spot treatment of small areas and are an excellent tool if their usage is properly planned. Tordon 101 was used in our helicopter spray program until 1972, and it was effective on most of the species with the exception of Ash and Red Oak.

We realized that these resistant



This area is owned by a large landholder who cooperated in a game food project. One year after seeding, note ground cover of orchard grass, white Dutch clover, Korean lespedeza, brown top millet, scattered soybeans and bicolor lespedeza.

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species would eventually present problems in areas not accessible to ground crews, so in 1968 we began testing helicopter spray applications of Tandex. We found that 15.2 pounds active material per acre would eliminate all the species remaining on the right of ways. In 1972 the greater part of our helicopter spraying was with Tandex using 19 pounds of 80-percent active Tandex in 20 gallons of water per acre.

Most of TVA's right of ways are easements which afford TVA the right to build, operate, and maintain transmission lines and the right to clear the right of way and keep it clear of brush, structures, and fire hazards. The property owner may make any use of the land that does not conflict with TVA's easement rights.

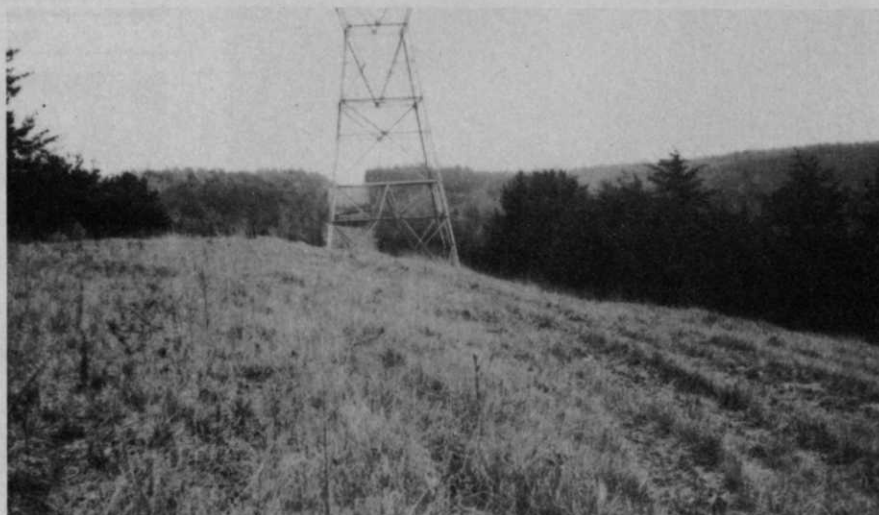
For many years we have encouraged property owners to make

agricultural and other compatible uses of the land; but in 1968 TVA developed cooperative arrangements in which TVA contributes to the clearing, seed bed preparation, fertilizing, and seeding in order to encourage the conversion of brush acres to compatible uses, such as grazing, agricultural crops, wildlife refuges, and recreational areas.

In this cooperative program the property owner may agree to perform certain work, such as clearing, seeding, and fertilizing, and TVA may agree to provide certain materials or labor, depending upon the resources of the property owner and upon the comparable costs to TVA of other right of way management alternatives. The plant mutually agreed upon is then confirmed in a letter agreement signed by the property owner and by TVA.

We believe that after he is stimulated to participate in making

This is Picket State Park near Jamestown, Tenn. where TVA cooperates in a seeding and maintenance program with the state of Tennessee. Resistant species of brush are controlled with Tandex.



compatible use of the right of way across his property, the owner is very likely to continue to use the right of way and that his use will, in effect, relieve TVA of further right of way maintenance across his property.

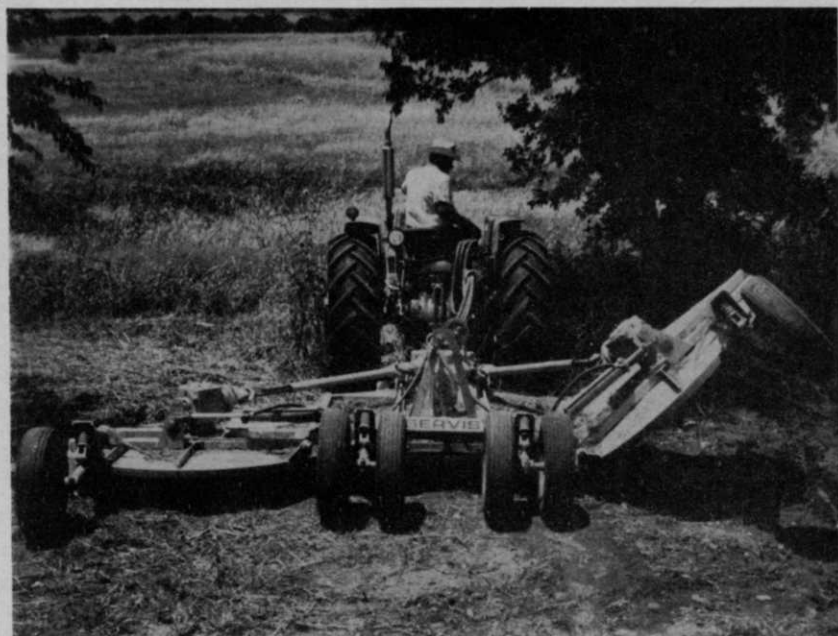
From 1957 until 1967 TVA's initial right of way clearing included stump treatment. However an analysis of the combined cost of stump treatment and "clean-up" operations after construction indicated that the right of ways could be prepared and seeded at approximately the same cost. In 1970 TVA began seeding all initially cleared right of ways where feasible. The areas of steep and rough terrain, which do not readily lend themselves to seeding, will probably be maintained by the use of herbicides.

Adoption of right of way seeding has not only promoted ideal transmission line access and security but has also produced aesthetically attractive right of ways and has assisted TVA's land buyers in negotiating with the property owners for easements. We have been very pleased to observe that many property owners immediately begin to utilize the seeded right of ways for livestock grazing.

Natural screens are left at all interstate and U.S. highways and at heavily traveled state and county roads regardless of the method of right of way maintenance that is used. Screen depths are determined by the locations of the line crossings and the general terrain features. Screen maintenance plans include removal of trees that grow tall enough to endanger the transmission line and encouragement of low-growing trees to take their places. In some cases tree trimming will be necessary, but we shall limit trimming to situations of absolute necessity.

Many of TVA's right of ways across Federal and state lands are being converted to game-management areas. In these cases TVA and the agency involved enter into share-cost arrangements similar to the shared-cost plans previously described between TVA and individual property owners.

We believe that our present right of way maintenance program is providing right of ways that are more attractive, more useful, and better for transmission line access and security than has any previous right of way maintenance program. The present program is good; but we are certain that there are ways to make it better, and we are dedicated to finding them.



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VERMEER TREE EQUIPMENT DIVISION

For More Details Circle (119) on Reply Card

POA ANNUA CONTROL

(from page 16)

bentgrasses or leave bare areas.

Perkins⁴ obtained good control of *Poa annua* with Betasan applied at 30 pounds (active ingredient) per acre. However, at 15 pounds active ingredient per acre this herbicide was not effective at five yearly applications. Because annual bluegrass seed does not require the after-ripening process for germination, it is likely that spring and fall applications of preemergence herbicides to coincide with germination are necessary.

Preemergence herbicides which

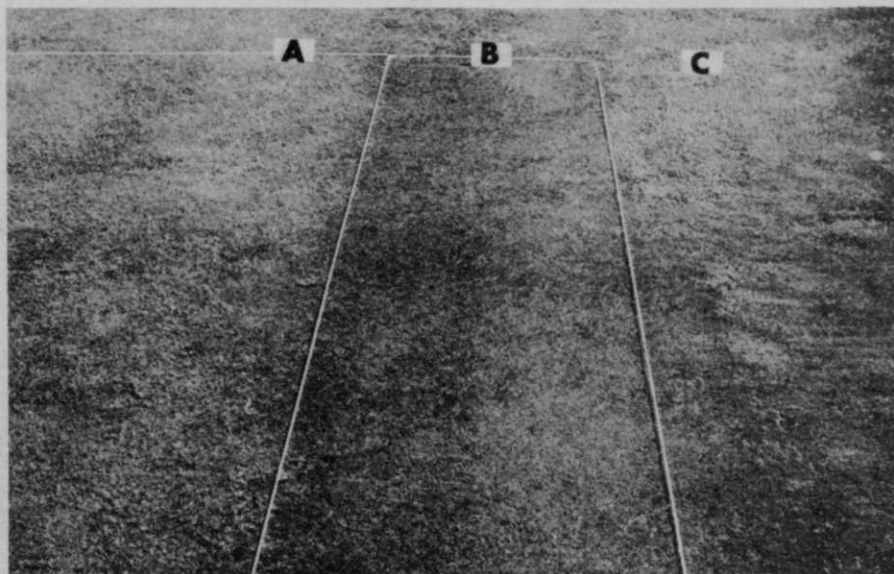
will prevent germination of *Poa annua* seed but will not kill the mature plant did not control annual bluegrass.

Younger⁶ found that *Poa annua* is not truly annual in many areas. This is especially true on putting greens where highly perennial types are segregated out by cultural practices. After application of some pre-emergence herbicides, there are problems of getting seed germination and stands of grass. However, applications of either calcium arsenate or lead arsenate³ result in germination and growth of grasses.

The last application of herbicides was made in May of 1969. Notes

taken in April of 1972 disregarding bentgrass varieties showed that only calcium arsenate and lead arsenate were effective. Only two to five percent annual bluegrass encroachment three years after the last application in 1969 was reported (Table 1). Lower percentage of *Poa annua* in the control may be the result of injury from herbicide treatments to other plots.

In greenhouse studies, Juska and Hanson³ obtained much poorer control of annual bluegrass with calcium arsenate — ten pounds per thousand square feet—when rates of phosphorus were increased. They concluded that soil phosphorus should be maintained at low levels for best results. Phosphorus levels were very high in field soil. However, excellent control of *Poa annua* was obtained with both calcium arsenate and lead arsenate because of the high buildup of arsenates. □



Absence of *Poa annua* in plot "B" three years after the final application of calcium arsenate in 1969. Plot "A" was treated with Zytron DMPA and plot "C" is the control.

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Ruckelshaus Names Fri Acting EPA Administrator

Robert W. Fri, 37, has been named Acting Administrator of the Environmental Protection Agency (EPA). He replaces William D. Ruckelshaus who early last month was appointed Acting Director of the Federal Bureau of Investigation (FBI).

Fri had served as Deputy Administrator of EPA under Ruckelshaus since June 15, 1971. Prior to that time he was a partner in an international management consulting firm, McKinsey and Company, Inc.

As Deputy Administrator he has on numerous occasions represented Ruckelshaus at official meetings and has conducted press conferences on the Administrator's behalf.

In accepting the appointment, Fri said that the existing staff of the Administrator's office will remain. "Thus, I anticipate the top management functions of the Agency will continue to be performed without disruption," he said.

"I foresee no shift in policy nor slackening of pace as we pass through this transition. Our job is too important to hesitate for even a moment in pursuing our goal of environmental quality. I am confident of the Agency's continued success," Fri told newsmen.

The Acting Administrator is a native of Kansas City, Kan. and a graduate of Rice University with honors in physics. He received his Masters of Business Administration from Harvard University with distinction. He was a Baker Scholar at Harvard, and is a member of Phi Beta Kappa.

Professional Grounds Managers Meet In Washington, D. C.

Nearly 50 members of the District of Columbia Branch of the Professional Grounds Management Society met in Bethesda, Md. in April.

Site of the meeting was the Federation of American Societies for Experimental Biology (FASEB). Items discussed during the business meeting were the Metropolitan Horticultural Happening at Tysons Corner in early August and the induction of two new members. They are: Mike Weber, garden foreman, and Robert Springs, maintenance foreman—roads & grounds, both with the National Naval Medical Center, Bethesda, Md.

Speaker for the evening was Bob Shields, superintendent, Woodmont Country Club, Rockville, Md. He presented a slide-talk show on "what the other fellow does." Shields explained that there are two 18 hole courses under his management, one Bermudagrass and the other bluegrass.

He impressed those in attendance with the area of work under his responsibility. We have 7 acres of greens, 2 nurseries, 5 acres of tees, 100 acres of fairways, 150 acres of ruff, 8 acres of ponds, 5 pumping stations and 115 sand traps to maintain, he said.

Shields reviewed the changes that have taken place in his operation over the years. He outlines other problem areas experienced by superintendents including roads, tennis courts and ornamental plantings.

Toro's Irrigation Division Completes Training Sessions

More than 650 independent installers of Toro irrigation equipment have been shown how "service opens the door to sales" in a series of local and regional training sessions conducted by The Toro Company and its distributors throughout the U.S.

After the wind-up meeting of the series in Honolulu at the end of April, Richard A. Danielson, marketing manager of consumer products for Toro's Irrigation Division, termed the training program "highly successful."

He believes, he said, that all participants are more aware now of the selling opportunities that exist when making service calls.

At the sessions, participants were reminded that "confidence in the availability of prompt and reliable

service continues to gain importance in the the purchase decision—for new installations, replacements and modifications."

The training sessions—two days for regional meetings and one day for local meetings—were conducted in California, Florida, Illinois, Michigan, Oregon, New Jersey, Texas, Utah and Washington, in addition to Hawaii.

The instructional team for the regional meetings included: Lee Bean, manager of Toro's "Irrigation University" at Riverside; Ken Larsen, Toro's irrigation service manager; Doug Colson and Gary Harbour, service field representatives, and Danielson.

Amchem's Bob Beatty Retires After 35 Years

Robert H. Beatty, internationally recognized authority on selectively controlling undesirable plants with herbicides, has retired from Amchem Products, Inc.

Beatty, by tramping utility rights-of-way, walking through corn and soybean fields and over rangelands, personally conducting hundreds of tests and supervising thousands of others, came to know problems and opportunities for controlling vegetation with herbicides as few men do.

Reared in Philadelphia, Beatty attended Penn State University where he starred as a football player and earned a degree in horticulture. His career with Amchem began in 1939 when interest in plant hormones was gaining momentum. Much of his early work was with 2, 4-D and 2,4,5-T. These still-popular herbicides have contributed much to the control of common weeds and undesirable woody plants. They have made crop production more economical, and they have helped hold down utility costs.

Dozens of widely read papers which Beatty authored, or co-authored, and his appearance on the programs of numerous weed control meetings, spread his reputation as an authority on selective plant control through the use of herbicides. He led in the formation of the Weed Science Society of America and was elected its first president. He is a past president of the Northeastern Weed Conference, and is a Fellow of the American Association for the Advancement of Science and of the Weed Science Society of America. He is listed in American Men of Science.



TRUCK-TRACTOR: Wheel Power Corporation, Mesa, Arizona

It's a truck. It's a tractor. It's for towing. It's for hauling. It's for grading. It's for mowing. It's for all of these, and more. This unit features 4-wheel drive, high flotation, low pressure tires, pulls 12,000 lbs. in soft plowed earth, has full-power hydraulic steering, full tilt cab for easy access to all working parts, load capacity of 2000 lbs. inside turning radius of 7 feet, and more and more. If this is not enough, unit comes with a full line of accessories. Total length of unit is 155 inches with a 72 inch long dump bed. It has an articulated joint in the center to make turning fast. For more details, circle (705) on the reply card.



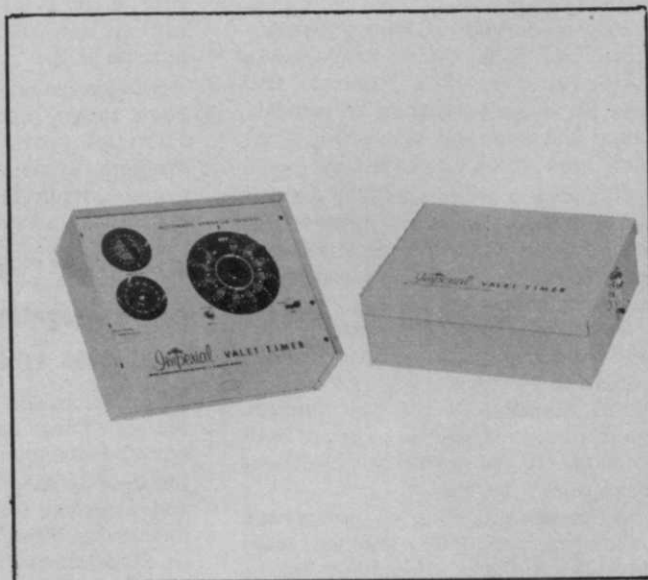
MOISTUREOMETER: Turf Service Laboratory, Laguna Beach, Calif.

Take the guesswork out of landscape and plant watering. This precision meter accurately registers the moisture content of the soil. Helps prevent overwatering or underwatering. Unit can be calibrated with a built-in adjusting knob to any type of soil. Sensing probe is simply pushed into the area to be tested and reading is shown instantly. Moisture content readings can be taken at any depth from 0 to 12 inches, on indoor or outdoor plantings. Weight is less than a pound. Construction offers user no trouble (backed by a five-year guarantee). For more details, circle (706) on the reply card.



FRONT-MOUNTED FLAIL MOWER: Outdoor Power Equipment Div., FMC Corp., Port Washington, Wisc.

Put the pacesetters of two different fields together in a third area and the marriage is a success that's attention-getting. That's what Mott and FMC Corp. have done. The Mott model 18-60 front-mounted flail mower with 60-inch cut now rides ahead of a Bolens HT-18 tractor. Special features include the utilization of the tractor hydraulic system on the front-mounted, full swivel caster wheels to raise the mower for transportation. Mower is powered by the tractor PTO. For more details, circle (702) on the reply card.



CONTROLLER: Imperial Underground Sprinkler Co., Kansas City, Mo.

Automatic, semi-automatic or manual performance can be achieved from this controller which features no diodes or capacitors and circuit breakers which eliminate fuses. Unit is wired for 24 volts a.c. unless a 110 volt unit is ordered. Variable timing from 0 to 30 minutes and 0 to 60 minutes is built in. Standard controls include 14-day calendar wheel, 24 hour timer and high-speed indexing motor. Unit also has a rain or off switch. For more details, circle (708) on the reply card.