

Light, lean and hungry

Never before has there been such a superb line of light, fast, tough and powerful line clearing and tree maintenance tools as these. Skillfully engineered, carefully built Limb-Lopper tools will give you years of dependable, low-maintenance service under tough operating conditions.

Limb-Lopper hydraulic and pneumatic power tools have become the performance standard of a demanding industry; the choice of tree experts who know their tools.

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Limb Lopper



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How to remove the without removing

Every summer you've tried to hold your Poa annua. But suddenly it's unusually hot and humid and your fairways and greens start to wilt. Big brown patches crop up. You find your Poa annua infested with disease. You're in trouble. You could lose your fairways and greens.

Don't say it can't happen to you. It can. Because no matter how careful you are, no matter how much you water to avoid wilt, no matter how often and lightly you fertilize to avoid stress, one day your "failure grass" is going to fail. So why gamble and try to hold your Poa annua? Why not get rid of it before it fails?

How do you do it? How do you keep

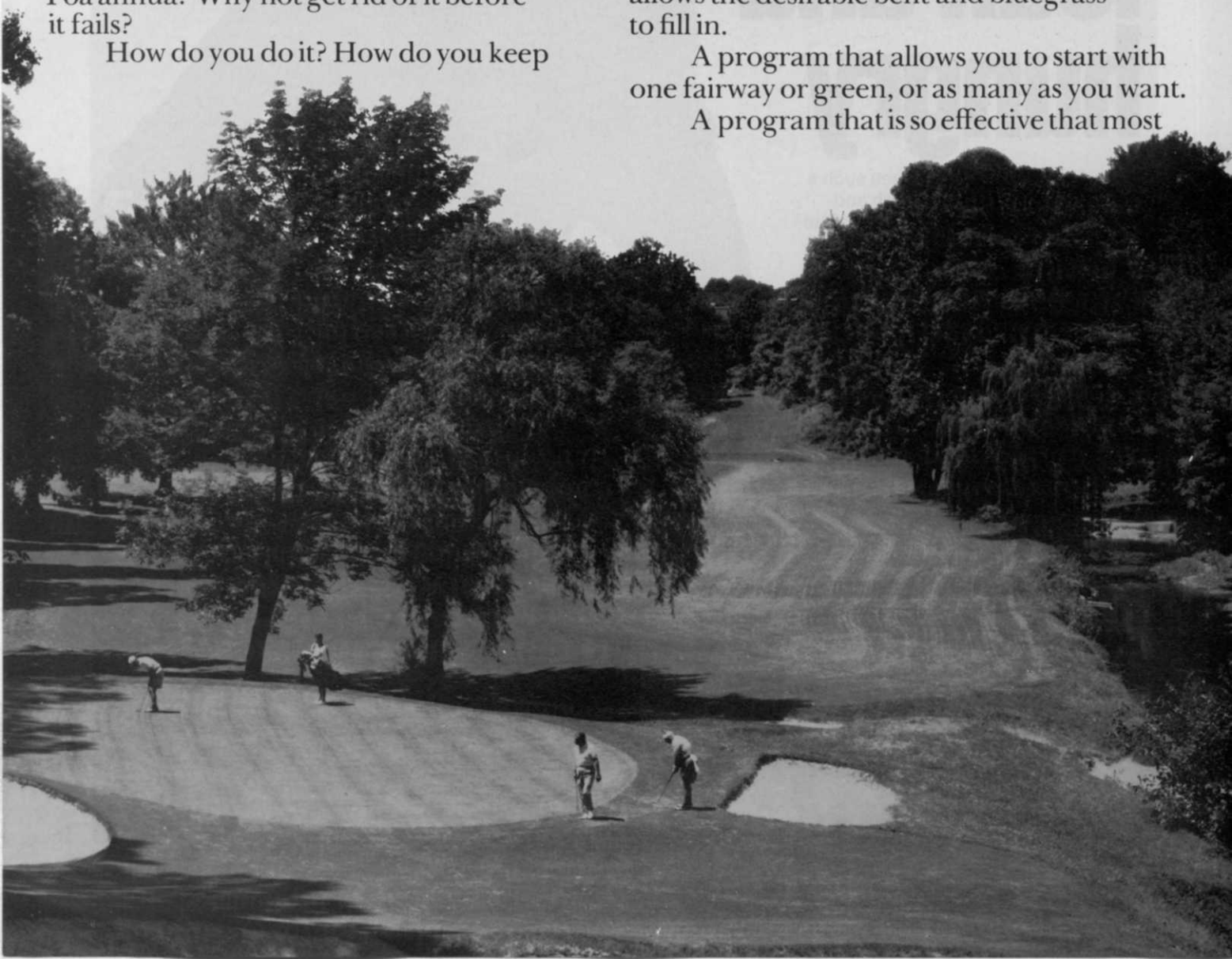
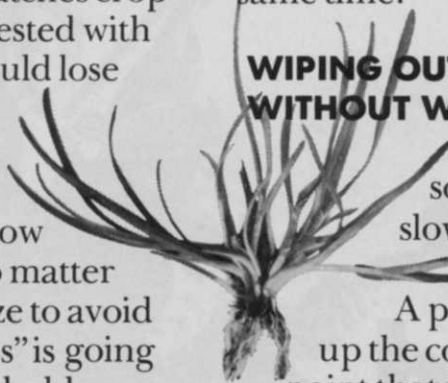
the course beautiful, the players playing, the Poa annua on the way out, and the desirable grasses on the way in, all at the same time?

WIPING OUT THE POA ANNUA WITHOUT WIPING OUT THE COURSE

It's not as difficult as it sounds. Not if you do the job slowly. Gradually. With a simple, well thought out program.

A program that precisely builds up the control level in your soil to a point that weakens the Poa annua and allows the desirable bent and bluegrass to fill in.

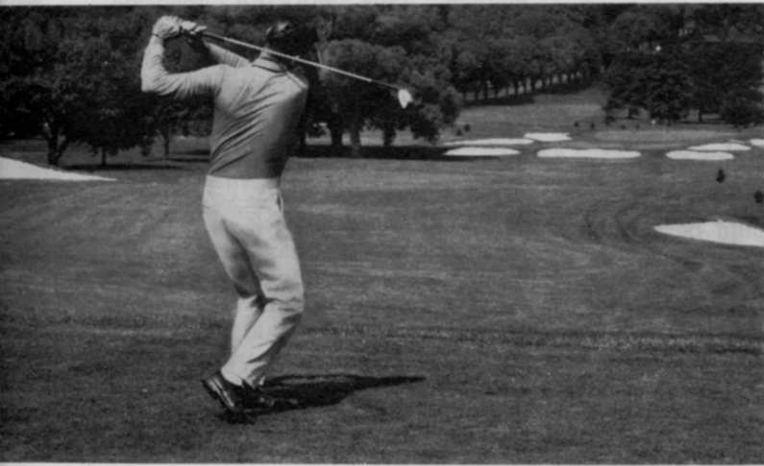
A program that allows you to start with one fairway or green, or as many as you want. A program that is so effective that most



Poa annua the golfers

of your players won't even know that the course is being treated.

A program that even improves play by inhibiting the uneven, unsightly Poa annua seed heads.



A program that will work because it's already worked on many other courses.

A program that, in the final analysis, doesn't have to cost you an arm and a leg.

A SUCCESSFUL TESTED PROGRAM FOR THE GRADUAL REMOVAL OF POA ANNUA

This tested 6-point program is successfully eliminating the Poa annua at Greenbrier, National Cash Register Country Club and hundreds of other courses. It can do the same for you.

1. Drain low areas: Improve drainage of fairways with trenching and vertical slitting.
2. Correct soil acidity: Apply lime to greens or fairways if under a pH of 6.
3. Aerate, thatch or spike the grounds and eliminate phosphorous in your fertilizer program. Make room for new growth. Bring up some soil, get seed against soil. Overseed often.
4. Apply from 4 to 6 pounds of Chip-Cal Granular per 1,000 square feet on fairways, or 2 to 4 pounds on greens. Apply in the spring and fall. Vary application rates

according to the percentage of Poa annua, available phosphate, pH and soil type.

5. Achieve Poa annua control: Light sandy soils low in phosphorus require less Chip-Cal to reach control.
6. Maintain control: Use 2 to 4 pounds of Chip-Cal per 1,000 square feet, either in the spring or fall. If Poa annua is dying too fast, use a liquid phosphate as a check valve.

Note: Chip-Cal Granular has been specially formulated for your Poa annua restriction program. It's granulated on a vermiculite base. Which helps give you a more uniform application and a more gradual release when you're building up your soil's control level. Chip-Cal also prevents crabgrass, goose grass, and controls soil insects and chickweed.

14 OTHER CHIPCO TURF PRODUCTS THAT TAKE CARE OF EVERYTHING FROM KNOTWEED TO SNOW MOLD

In addition to Chip-Cal Granular to control Poa annua, we have the most complete line of products to help you with your other turf problems.

For example, in the spring, Chipco Turf Herbicide MCPP controls clover and knotweed on greens and fairways. And in the summer, Chipco Microgreen improves your turf's health and vigor. Used in the fall and winter, Chipco Rho-Mold will prevent unsightly and destructive snow mold.

WANT TO KNOW MORE ABOUT POA ANNUA AND OTHER TURF PROBLEMS? WRITE US

We'll send you back everything you need to know.

Address: Chipco Turf Products Mgr., Rhodia, Inc., Chipman Division, Dept. GS, Box 2009, New Brunswick, New Jersey, 08903.



Wisconsin To Hold Arborist Training Seminars

Two separate one day seminars designed to train arborists in Wisconsin on the use of a newly registered systemic fungicide are slated for Thursday and Friday, April 20-21, respectively.

According to Dr. Gale Worf, plant pathologist, University of Wisconsin, the seminars are to provide additional exposure to arborists in terms of how work in Dutch Elm Disease control is accomplished. "We want arborists to understand the meaning and limitations of the Federal label for (Benlate) benomyl fungicide," he said.

Topics discussed during the training will include application of Benlate as a foliar spray and also trunk injection. The April 20 seminar will be held at Tyrolian House, Milwaukee. The Quality Motel in Madison is the site of the April 21 meeting.

Although the seminars are primarily for Wisconsin arborists, Dr. Worf says that arborists from out of state are welcome.

Benlate benomyl fungicide was accepted for Federal registration by the Environmental Protection Agency in early March. The label specifies that Benlate is to be used by trained arborists in conjunction with sanitation and insect control programs. The product has been con-

sidered by researchers as a positive step in the control of Dutch Elm Disease.

Dr. Worf says that the April seminars will be the first step in training arborists. Additional field activity is scheduled for mid-May. Here arborists can view spray demonstrations and injection methods. A final day is slated for early July.

Persons interested in attending the seminar should write to Maurice White, Short Course Office, Agricultural Hall, University of Wisconsin, Madison, Wisc. A \$7.50 registration fee which includes course material and lunch will be charged.

Canadians Reduce Spray Drift on Ontario Highways

Spray drift during the application of herbicides could be a thing of the past, according to G. R. Stephenson, department of environmental biology, University of Guelph, Canada. He has conducted tests over a three-year period, in cooperation with the Ontario Department of Transportation and Communications.

Two types of chemical processes have proved effective in reducing drift. The first involves a particulating agent. A gel powder is injected into the spray tank. This

powder absorbs the spray solution and swells to a defined particle size. With uniform particle size there is less chance of lighter particles drifting.

The second process is invert emulsion, the suspension of water in oil. The spray has a paste-like consistency. The number of fine droplets produced during the spraying process are reduced.

Under actual conditions, the new process can be carried out at a higher vehicle speed and lower spray volumes than with the old method, thus making roadside spraying more efficient. For example, a 500-mile median strip on Highway 401 was sprayed for weed control in three weeks using two vehicles. The job normally takes eight vehicles nearly two months using a standard spray.

The major drawback to such a new system is cost, says Stephenson. Modification of equipment may not be economically feasible except for larger operations such as that of the Department of Transportation and Communications. However, reduction of damage claims may pay for modifications in many instances, he

Purdue Turf Students Receive Scholarships

A total of \$1450 in scholarships were awarded to three Purdue University students with turf study specialties at the Midwest Regional Turf Conference in March.

Recipients of the Golf Course Superintendents' Association scholarships were William C. Brazeau, 181 Linda Lane, West Lafayette, and James W. Uptgraft, Route 1, Keystone, both seniors, and Lyle R. Heath, Route 1, Windfall, a junior.

Brazeau and Uptgraft each received \$500 scholarships and Heath \$450.

Elected officers of the Foundation for 1972-73 were Paul Morgan, Brown's Run Country Club, Middletown, Ohio, president; Dudley Smith, Silver Lake Country Club, Orland Park, Ill., vice-president, and W. H. Daniel, Purdue turf specialist, executive secretary (re-elected).

New directors are Walter Wilkie, Muskegon, Mich.; Terry Pfothauer, Indianapolis, and William Story, Carmi, Ill.

More than 600 attend the conference, co-sponsored by the Foundation and Purdue's agronomy department.



Three turf students at Purdue University shared in the \$1450 scholarships awarded by the Golf Course Superintendents Association. They are: (l-r) William C. Brazeau, West Lafayette; James W. Uptgraft, Keystone; and Lyle R. Heath, Windfall, all from Indiana. Presentation was made during Midwest Regional Turf Conference at Purdue.

Adikes Introduces New Adelphi Kentucky Bluegrass

Adelphi Kentucky Bluegrass (P-69), an improved bluegrass developed through controlled parentage breeding, is now being marketed in North America, according to J. & L. Adikes, Inc., Jamaica, N. Y.

The new bluegrass variety will be distributed by five firms. The area east of Montana, Wyoming and Colorado and north of Oklahoma, Arkansas, Tennessee and North Carolina will be covered by Vaughan's Seed Co., Jonathan Green & Sons and J. & L. Adikes, Inc. The rest of the U. S. and European sales will be handled by Northrup, King & Co. Jacklin Seed Co., Inc. will be responsible for Canadian sales.

A characteristic of Adelphi is its natural dark green color. It provides an excellent dense turf because of its good rhizome and tiller development and is moderately low growing. Tests have shown good resistance to leaf spot, crown rot, leaf rust and stripe smut.

It will tolerate moderately close mowing, too.

Adelphi was developed by crossing a variety with desirable characteristics with another variety which showed additional searched for features. By process of elimination, progeny that showed any of the weaknesses which might have been in the parent plants were screened and only the choicest plants were used for further testing.

Adikes, Inc. says that a patent has been approved and issued for Adelphi Kentucky Bluegrass. Availability of seed will be in short supply eventhough increased acreage was harvested.

Brooks Instrument Announces Marc VI Turbo-Meter

Brooks Instrument Division, Emerson Electric Company of Statesboro, Ga. has announced a new technical bulletin on a new turbine meter for aircraft refueling.

The Brooks Marc VI Turbo-Meter was designed for use on high capacity refueling truck and carts, and measures flow up to 1250 gpm. It weighs only one-tenth as much as a positive displacement meter of the same capacity.

The bulletin includes information on construction, accuracy, specifications, dimensions, and accessories. For more details, circle (724) on the reply card.



Emergency transplant operations ...



always a success with Ryan sod cutters.

Winter kill, fungus and disease can hit the best-kept fine turf areas. Excellent insurance to keep these areas in lush, living grass is a sod nursery for emergency repair. And the best way to perform the transplant operation is with a Ryan Sod Cutter. Ryan has a size and model to suit every need.

Ryan JR Sod Cutters (1)

... turf-world's most popular sod cutters are compact and highly maneuverable. Self-propelled, easy-to-operate JR Sod Cutters are available in three models capable of cutting 9, 15, or 20 sq. yards of sod per minute. They're ideal

for average-size sod nurseries.

Attachment blades are available for all models for trenching, edging, tilling, pipe laying and sub-soil aeration.

Heavy Duty Sod Cutters (2)

... for large sod nurseries and big transplanting jobs. These *extra* rugged machines are built to commercial specifications. Five models are available, enabling you to cut up to three acres of sod per day. All models come in a choice of cutting widths from 12" to 24". They operate smoothly and quickly with dependable, 2-speed transmissions.

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Keep the tough broadleaves out of your fairways with BANVEL® herbicide

The reputation of your course depends, among other things, upon the condition of your fairways. Broadleaf weeds make for bad lies and frustrated players. They also rob desirable turf of nutrients and moisture it must have to stand up under heavy use.

It may be you've despaired of ever getting rid of the "2,4-D tolerant" weeds. They're the very ones BANVEL 4-S was developed specifically to control...and does. Weeds like knotweed, red sorrel, carpetweed, chickweed,

white clover, etc. . . . tough, resistant, spreading, thirsty, hungry.

Banvel attacks weeds two ways: one, it attacks through the leaves; two, Banvel is absorbed through the roots. Then Banvel is translocated throughout the plant—even to the deepest roots—to destroy the weed completely.

If you're still plagued by some of the "old favorites" such as dandelion, plantain, knawel, wild garlic and/or onion, burdock, etc., along with the real tough ones mentioned above,



Banvel+2,4-D combination is unbeatable for broad-spectrum control without setback to established turf and rhizome development.

CHLORDANE... AMERICA'S LEADING TURF INSECTICIDE FOR BUGS WITH BAD EATING HABITS

Soil insecticides come and go but Chlordane goes on forever. The reasons are clear-cut. Chlordane kills most common insect pests of turf; also many harmful or annoying insects that live on the surface: White grubs, Japanese beetle larvae, mole crickets, wireworms, ticks, chiggers, cutworms, ants, mosquitoes, sod webworms (lawn moths), earwigs and many others.

Although Chlordane has long-lasting action, *it does not magnify biologically*. Residues have seldom been detected in foods, water, fish, or wildlife. When detected, they have been insignificant.

Chlordane can be applied with standard equipment, in either liquid or dry form. Exact rates and directions for application appear on package labels.

VELSICOL TURF CHEMICALS

Insecticides

- Chlordane 25G
- Chlordane 72EC
- Chlordane 40WP
- Chlordane 5% Dust
- Chlordane 10% Dust
- Chlordane 10% Granules
- Heptachlor 2.5% Granules
- Heptachlor 5% Granules
- Heptachlor 10% Granules

Herbicides

- Banvel 4S
- Banvel+2,4-D

**Pre-emergence
Crabgrass
Herbicide**

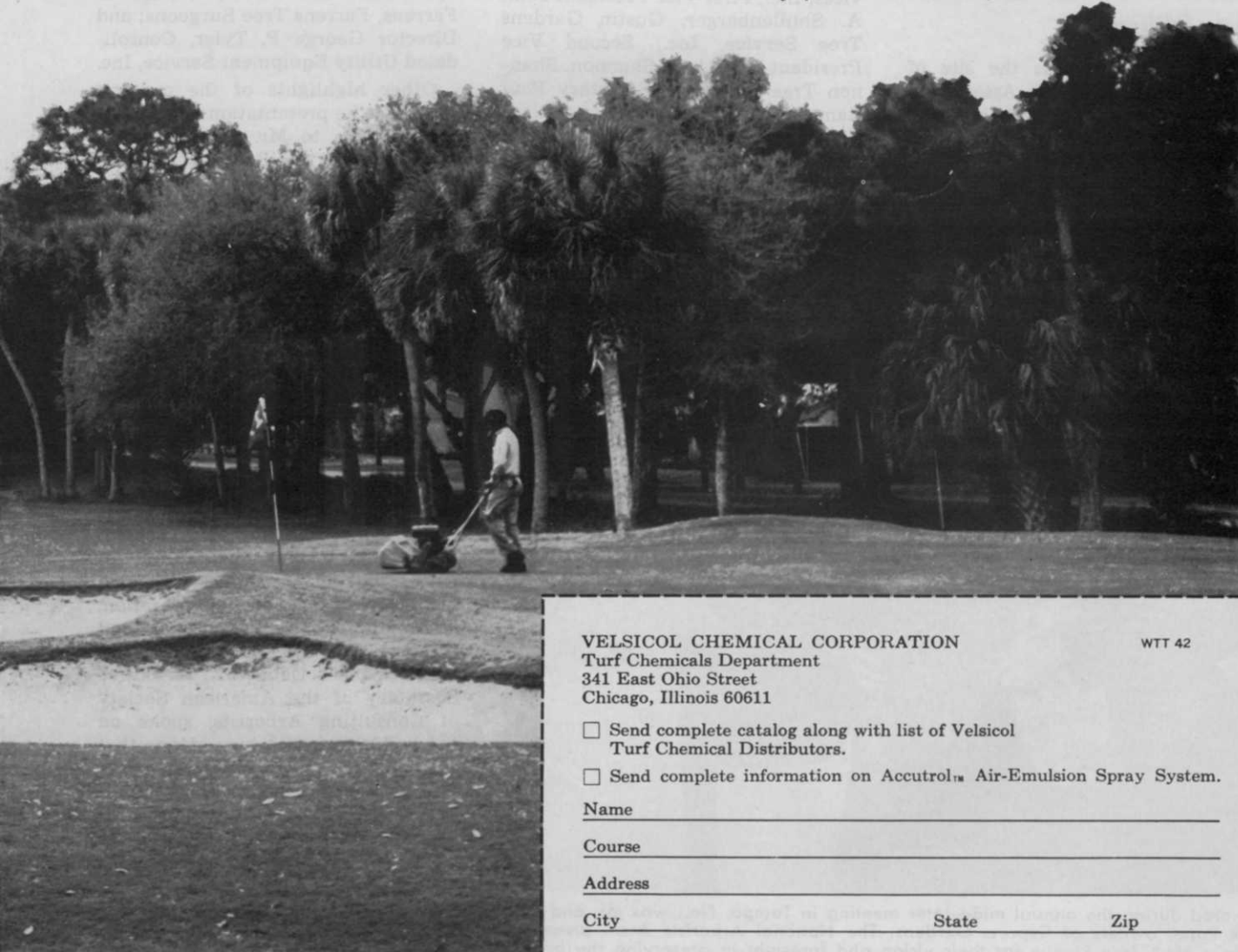
- Bandane® 15G

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We call it "Instant Shade," because it's just like planting an 8-year-old tree overnight... and we make it possible with your choice of six Vermeer Tree Spades, in a variety of trailer or truck-mounted models. It's fast... it's economical... one man and one machine can handle the entire job and save you hundreds of backbreaking hours. Vermeer Tree Spades... built by "The Diggin' Dutchman"... used by nurseries, landscapers, developers, municipalities, rental firms and tree service firms everywhere. Write for complete literature.



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National Arborists Assn. Elects Officers

Tampa, Florida, was the site of the National Arborist Association (NAA) 1972 Annual Meeting and Trade Show in February. More than 125 delegates attended.

New officers for 1972 include

President Robert Felix, Harder Services, Inc.; First Vice President John A. Shullenbarger, Gustin Gardens Tree Service, Inc.; Second Vice President W. Roland Shannon, Shannon Tree Company; Secretary Paul Ramsey, N. G. Gilbert Corporation; Treasurer Thomas A. Morrison, H. A. Morrison, Arborist; Director Boyd Haney, B. Haney & Sons; Director

Kenneth B. Kirk, Shield Shade Tree Specialists; Director Gerald E. Farrens, Farrens Tree Surgeons; and Director George P. Tyler, Consolidated Utility Equipment Service, Inc.

Other highlights of the meeting included the presentation of an NAA Tree Plaque to Mr. Richard Pope, Chairman of the Board of Florida Cypress Gardens, Inc., for the preservation of the largest specimen Banyan tree found in Central Florida.

Jack Hoffer spoke to the members on the effects Phase II wage and price controls will have on commercial tree care firms. Other topics discussed were capitalization costs, payroll taxes, price increases for service organizations, and many other important subjects. Paul Ramsey, N. G. Gilbert Corporation and George Barlow, Area Compliance Officer, Jacksonville, Florida, presented a program on the Occupational Safety and Health Act of 1970. Some of the topics discussed included: Inspections (preparation, notification, and procedures) and Citations, Penalties and Shutdowns.

Dr. Spencer Davis, Jr., Executive Secretary of the American Society of Consulting Arborists, spoke on the pollution and injury effects that salt has on trees. He related the effects that salt has on the physiology of a tree and some of the preventative measures that may be used to protect the tree from destruction.

The next Annual Meeting of the National Arborist Association is tentatively scheduled for February 18-22, 1973 at the Mountain Shadows, Scottsdale, Arizona.



Honored during the annual mid-winter meeting in Tampa, Fla., was Mr. and Mrs. Dick Pope, owners of Cypress Gardens. The National Arborists Assn. presented them a NAA Tree Plaque for their vision and foresight in preserving the beauty of a well-known Banyan Tree. Pictured here are: (l-r) William Lanphear, president of NAA; John Duling, past president; Mr. and Mrs. Dick Pope; William Rae, past president; and John Shullenbarger, vice president.

Scientists Advocate Nuclear Power To Conserve Energy Drain

Energy — the unseen power that provides everything from food and shelter to the luxuries of mechanized living — may pose a major ecological problem for man. Modern industry, transportation, and agriculture are almost totally dependent on the stored solar energy found in fossil fuels. But coal, petroleum and natural gas will soon be in short supply.

These are some of the conclusions developed by two Ohio scientists, Dr. Warren L. Roller, professor of agricultural engineering at the Ohio Agricultural Research and Development Center, Wooster, and Dr. Walter Carey, director of the Nuclear Reactor Laboratory at Ohio State University.

"We are the stewards of these energy capital assets," Roller said. "Yet we continue to withdraw from our account as if there were no tomorrow . . . living off resources that belong to future generations."

He said that three-fourths of the fossil fuel energy consumed by transportation goes down the energy drain. Efficiency of fossil fuels to generate electricity is poor.

We must develop the full potential of nuclear power, said Dr. Carey. When uranium is split in the fission reaction, energy in the form of heat is liberated — three million times more energy than in an equivalent weight of coal.

But radiation dangers and thermal pollution have created controversy. "We have lost sight of a basic principle about nuclear power," Carey submits.

"The nuclear reactor was never meant to be the ultimate answer to our energy needs. It was originally conceived as a temporary source of power that would extend our limited resources until we learned to directly harness the sun's energy."

The scientist said that technology is now available to minimize or eliminate the impact of nuclear plants on the environment.

What do the scientists predict as tomorrow's energy source? The sun, says Carey. Solar cells have already been developed to capture the sun's rays, but as yet there is no practical way to store solar energy.

The researcher described one suggested plan which may become part of the new solar technology.

Huge plates of solar cells would orbit in continual sunlight high

above the earth. Solar energy would be captured, converted into microwaves, and beamed—even through cloud cover—to receivers on the ground or floating in the sea. The microwaves would then be converted into various forms.

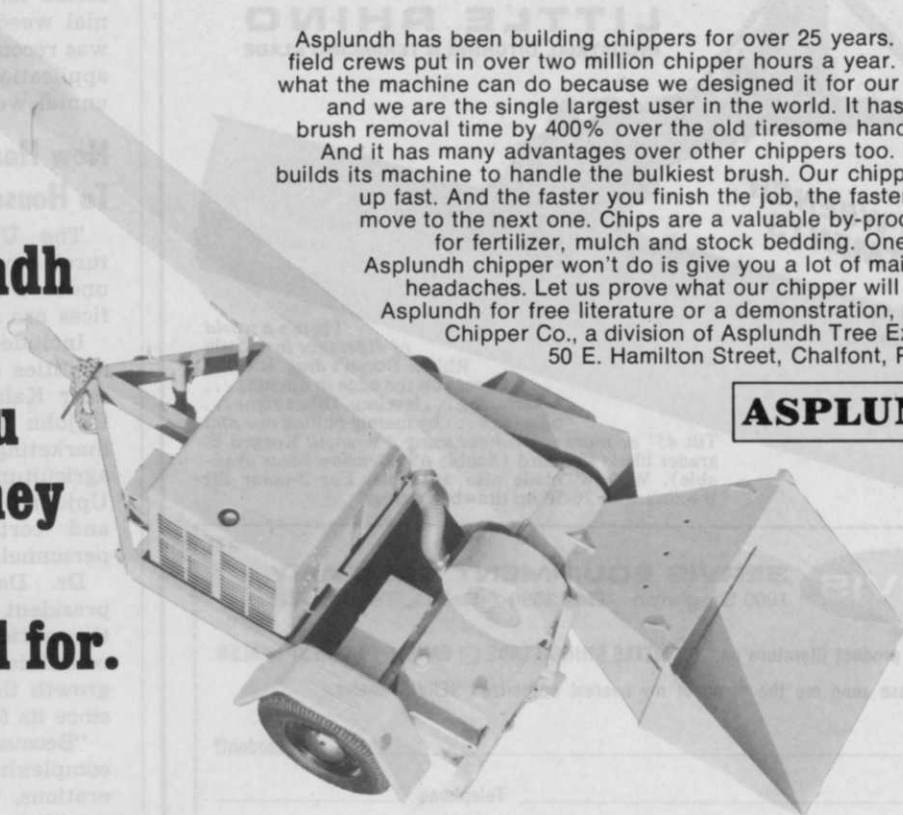
"The idea isn't nearly as far fetched as it might sound," Carey said. In fact, scientists in the space program have already taken the first step toward such advanced technology.

Carey and Roller pointed out that we must correct the misuse of our limited stored energy reserves. Increasing our energy use efficiency may involve some sweeping change in outlook, and even in eating habits, they said.

Protein, as well as energy, is essential in our food supply. Forests and other dense vegetative crops are most efficient at capturing solar radiation and turning it into organic material.

Yeasts and certain other lower life forms are much more efficient at converting this organic material to protein than are some of our domestic animals. This means, Roller said, we may be forced to substitute these more efficient processes for our present feed grain to meat pathways.

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than you
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Asplundh has been building chippers for over 25 years. Asplundh field crews put in over two million chipper hours a year. We know what the machine can do because we designed it for our own use, and we are the single largest user in the world. It has speeded brush removal time by 400% over the old tiresome hand method. And it has many advantages over other chippers too. Asplundh builds its machine to handle the bulkiest brush. Our chipper eats it up fast. And the faster you finish the job, the faster you can move to the next one. Chips are a valuable by-product used for fertilizer, mulch and stock bedding. One thing an Asplundh chipper won't do is give you a lot of maintenance headaches. Let us prove what our chipper will do. Write Asplundh for free literature or a demonstration, Asplundh Chipper Co., a division of Asplundh Tree Expert Co., 50 E. Hamilton Street, Chalfont, Pa. 18914.

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There's a world of difference in a Little Rhino! Doesn't drag. It Cuts! Gives you the edge in ditching... terracing... leveling. Offset right... offset left... by merely pulling one pin. Tilt 45° or more... without using a wrench! Rugged 6' grader blade standard (double 6' extension boots available). Wide 8' blade also available. For 3-point lift tractors with 20-55 hp drawbar ratings.

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Ecology Manipulation Suggested for Sod Fields

The most successful control of annual weeds in commercial sod fields, comes from manipulating the micro-ecology, according to Dr. James V. Parochetti, Extension weed control specialist at the University of Maryland.

Proper mowing and control of turf diseases and problem insects are the key elements in producing vigorous turf growth which will do its own job of controlling weeds with little or no need for application of herbicides, he said during the Maryland Sod Conference in March.

He granted that herbicide application is often necessary, however, especially for the control of cool-season perennial grassy weeds, such as quackgrass, which make most of their growth in spring and fall when lawn grasses may not be actively growing.

The Maryland agronomist cited one herbicide application rule-of-thumb. "When the forsythia blooms drop, it's time to apply dacthal for crabgrass control."

He reminded nearly 100 persons attending the conference of the necessity of eliminating perennial weeds prior to establishment of a sod field.

Dalapon was listed as a good herbicide for controlling grassy perennial weeds, and dicamba plus 2,4-D was recommended for post-emergent applications to hold broadleaved perennial weeds in check.

New Headquarters Building To House Upjohn Ag Division

The Upjohn Company Agricultural Division will be consolidated under a single roof when new offices are completed in April.

Included in the move to the new facilities at Upjohn's research farm near Kalamazoo, Mich. will be the Upjohn and Tuco animal products marketing and research areas, Tuco agricultural chemicals marketing, Upjohn's Asgrow Seed Company, and certain other administrative personnel.

Dr. David A. Phillipson, vice-president and general manager of the agricultural division, said the consolidation reflects the rapid growth the division has experienced since its formation in 1964.

"Because of the increased size and complexity of our agricultural operations, there's a need for us to establish a single, more efficient base of operations," Dr. Phillipson said.