

WEEDS TREES and TURF

JUNE 1971



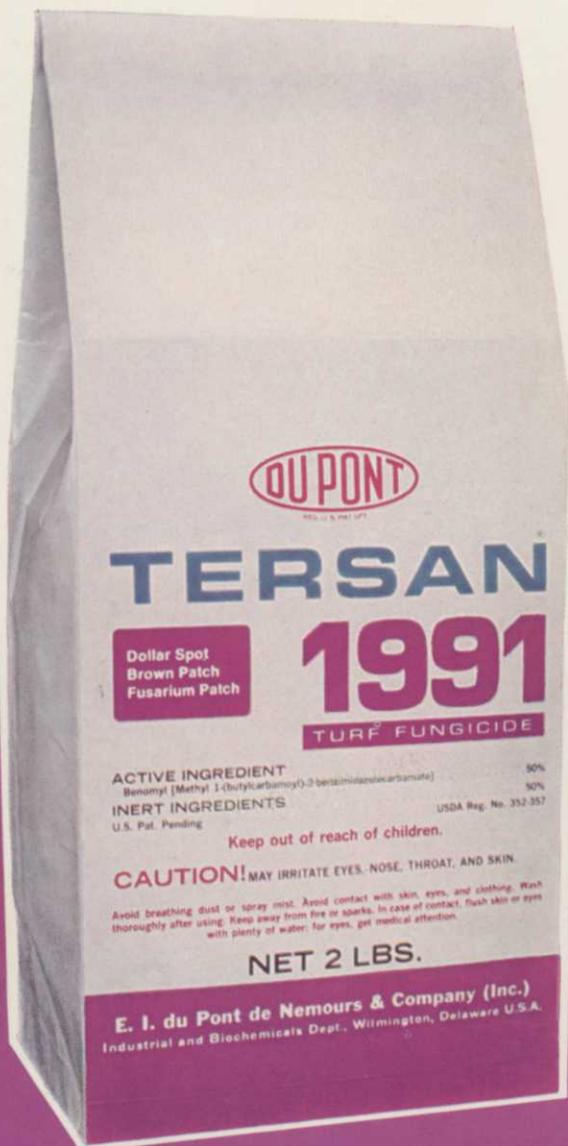
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Tree Business Management



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WEEDS TREES and TURF®

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Howard F. Harvey, Jr., outlines five key management musts for the small businessman. He elaborates on each of the five which he received from a veteran small businessman in tree care business.

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Pesticide Legislation — Just Where Are We Headed 16

Hard news on pesticide legislation at the Federal level is now in a lull period. Public hearings are completed on H.R. 4152, and congressional debate has as yet not begun.

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Elmer Mott, one of a half-dozen or so manufacturers of the efficient flail for the commercial turf industry, gives his views on the flail and its place in the industry.

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The Cover

Flail mower on the cover this month demonstrates versatility of this type unit for the industrial market. Flail blades are lightweight, free swinging, self cleaning, and cut with an edgewise slicing action — as a good knife should. They are safe and efficient and most, such as this Mott unit, have a variety of flail blades available. Mott, for example, in addition to the general purpose blade offers a scalping, thatch thinning, and a special blade for mowing in areas littered with rocks and trash. Flail mowers also come in many sizes, both self-propelled and tractor pulled. More on flail mowers can be found beginning on page 18.

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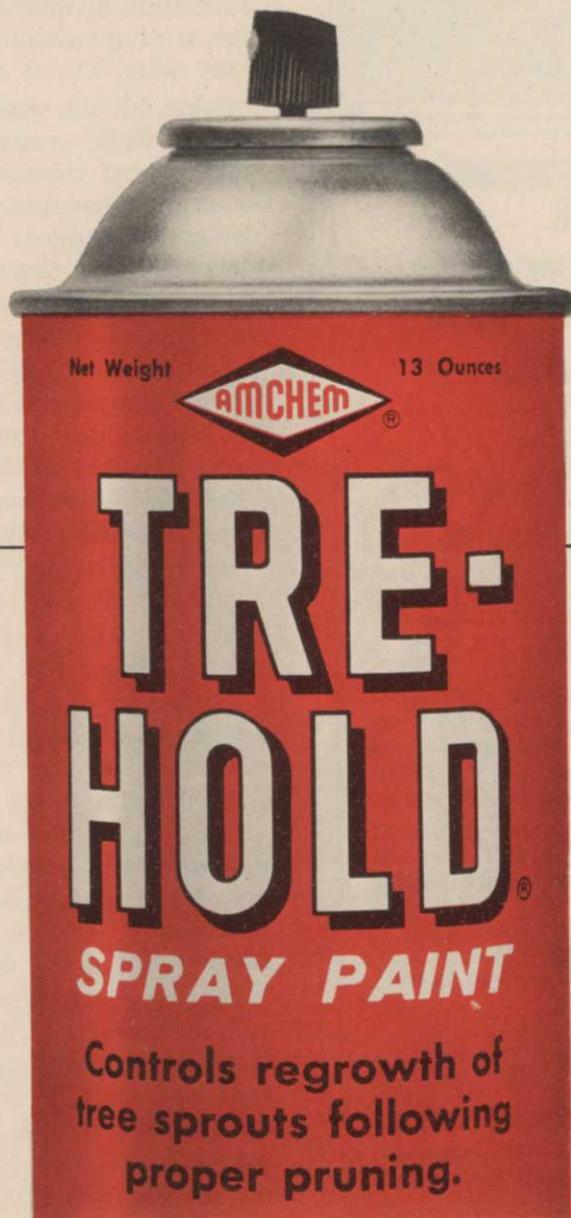


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For More Details Circle (103) on Reply Card

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514 Shawmut Avenue
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EDITORIAL

Artists Come In Many Colors

The fast buck artists are back. Like the swallows they show up each year with every conceivable type of fly-by-night business. With every job, you lose more than just the loss of business. You lose some of the lustre you have previously earned as a legitimate business man.

Right now—at the height of the fly-by-nighter's busy season—is a good time to alert your customers. Point up the trials a homeowner buys when he pays for a shoddy operation. You can do this in a number of ways. Your local advertising outlets or your own direct mail piece offer possibilities.

But we think this is a good time to band together with your competitors and do some joint local advertising. Those of you who hold common association memberships are in an excellent position to plug national association standards. Run a joint radio, TV, or newspaper promotion.

Point out the guarantee of prompt service and quality work customers can expect from year-round, local businesses such as your own. Use examples of complaints which have made the local newspaper, radio or TV outlets. And, by all means, alert the local news media when you have solid evidence of fraudulent operations. Usually, local reporters will follow up a good tip with an exposé.

You are in a business where reputation of the service company is extremely valuable. Whether you are treating lawn, trees, or ornamentals, or doing tree care work, there is no second guessing. Once the job is completed, the fast buck artist has collected and moved on.

By contrast you are still around and still in business. Not only can you be found if the job fails, but you will expect to make it right. And your customer will expect you to.

Customers are at the mercy of the fly-by-nighter and should quickly recognize this. No customer for this type service can examine a chemical and judge its value. Nor can the customer judge a tree care job until it is done. Thus, it is difficult to understand why a customer will not check with the Better Business Bureau before contracting with a transient for an expensive service. But many don't.

So, it's your territory and your franchise which you are protecting. Warn your customers that the best practices vary from area to area. Local, full-time operators know their area. They know the specific insects and diseases, and they know the most effective, and legal controls. Transients cannot provide this experienced judgment.



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Dursban insecticide—the unsurvivable one.

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Words of Wisdom From A Winner

By **HOWARD F. HARVEY, JR.**

Product Development International
Rutledge, Pa.

RECENTLY I ran into an old acquaintance who has really made it big in the tree business. He has one of the largest private concerns going and has come up the hard way. After having worked for somebody else for over thirty years, he went out on his own. In just more than ten years he has built an enterprise grossing \$1 million plus per year.

The first time I met . . . let's call him Floyd . . . some years ago, I was just starting in the business and I asked him for some good pointers. The advice he gave me was, without question, some of the best I ever had. Here, then, are those timely tips which Floyd gave to me which could prove to be invaluable information to anyone in the tree and landscaping business.

I. "I've seen lots of good tree men who failed in the tree business, but never a good businessman."

Knowledge of the technical skills of tree working is not enough in itself on which to build a business. If it were, every good climber around would be self-employed. To be sure, these technical skills are

very important. But they can be hired. Other men can do that work for you. But management and sales skills are a different story. Especially when you're first starting, you cannot afford to employ a manager or even a good salesman until you have quite a good volume of trade. Until your business gets pretty big, the sales and management is your responsibility. To survive, you must succeed as a salesman and manager and this requires knowledge and skill in business.

Where do you get this business knowledge and skill? One of the best sources is the Small Business Administration (listed under U.S. Government in most phone directories). They have a list of free or low cost publications on all aspects of business and management. Just give them a call at the office nearest you. You can benefit from the information available from S.B.A. no matter how long you have been in business. The S.B.A. even has a free personal advisory service known as S.C.O.R.E. Trade magazines, such as WEEDS, TREES & TURF, are a good source of information as well.

Another good source of information and expertise is an experienced associate in the field. More often than not, they will be glad to tell you anything they know if you'll but take the time to listen. Old timers can tell you how to screen your pro-

spective employees, how to get the best deals on equipment, how to keep good books, etc. TIP: Don't expect to get good advice from someone you'll be competing with directly.

If you live in a small town, your banker and the Chamber of Commerce may be excellent sources of business assistance and information.

II. "Build Slow and Build Solid!"

Building a service business depends on selling repeat accounts. One-shot customers will only last for so long. Therefore, you have to sell repeat accounts if you want to stay in business. How do you do this? First of all, you must establish a reputation for doing a first-class work at a reasonable price. You must be there to do the job when you say you will be there. That's dependability. A lot of tree surgeons don't know what the word means. And that hurts them. If you can't be at the job when you're expected, it's always worth the effort to be courteous enough to call the customer and keep them posted. That's called communication.

When you bid on a job, be sure to explain clearly just exactly what you will do for the price you quote. When you do that job you must deliver everything you promised for the same price you originally quoted. Even if this means you lose

money on the job. One thing that will lose a customer forever is tacking on extra charges as you go along. If you see that you have bid a job too low, once you have started, do the same top quality job you would do for top profit. You may recover your loss on repeat work. Even if you don't recover it from that particular customer, at least they will be satisfied and will sell their friends for you. But, if you try to recover your loss on a low bid by chisling the customer for more money, they not only will lose confidence in you, but will also warn their friends against dealing with you. A reputation for being a fair, trustworthy, dependable person to deal with is worth all the small losses you must sustain to establish that reputation. You will build your business solidly and your customers will stick with you, year after year, and tell their friends about you too.

III. "Don't meet competition by cutting prices."

Compete on the basis of quality. Sell a quality job — do a quality job. Your competitors cannot do a first class job for a cut-rate price. They will have to do a "cheapie" job or else lose money. Sure, you will lose some jobs. Because there are some people who can see no farther than price alone . . . not value. But your jobs will be a better value for your customers and they will advertise for you long after the rate-cutters have gone out of business or at least out of town. Don't ever be lured into bidding a job too low because a prospect says, "Well Joe so-and-so will do the job for \$50.00 less than your bid!" Your answer must be, "Well sir, you'd better get so-and-so before he changes his mind!" Always remember this — You must justify your price. The customer doesn't know your business so you must explain *why* your price is higher, in terms of his own interest. He doesn't care if you have payments to make on your new trucks or that labor costs you dearly. He *does* appreciate it if you say, "Sir, there is only one way to do this job 100% safely. It will take more time than it would if we took chances. And time is money. If so-and-so wants to take chances on damaging your property or injuring your loved ones or his workers, that is his business, but I have more concern for your welfare than that. I would rather lose the job." Or if you say, "Sir, we carry \$100,000 worth of in-

surance for your protection. That is not free to us, but most people feel that is worth paying a little more for, don't you?" Most people do appreciate quality work but you must *explain* that the reason that your work may cost more is because it is a quality job. You can break even sitting at home. If you can't make a profit on a job, learn to walk away from it. Let your competition lose money on it, but not you.

IV. "Keep your prices consistent."

Every contractor's pricing is different and you should know your own system. However, it is always a temptation to get the best price you can, especially when a particular customer can well afford top dollar. But pricing can be tricky. More often than not, the person who can best afford to pay the most, is the one who'll want to pay the least. That's how they got their money to start with, right? But don't fall prey to the temptation of the easy buck. Taking advantage of anybody is not only unethical, but will hurt you in the long run. If you charge Mrs. Jones \$100 to remove a tree and then charge Mrs. Smith, \$50 to do a job of a similar size "Because you are already right there", you will lose *two* customers after the girls get together. You will lose them because they'll both think Mrs. Jones was robbed and Mrs. Smith is her close friend, remember?

The same holds true with spraying jobs. If you spray two fruit trees in Mrs. Jones' yard for \$20 and you do Mrs. Smith's two for \$5 each, because your tank is almost empty and you're going to dump it anyway, once again, you'll only hurt yourself. Ask for \$10.00 per tree, same as Mrs. Jones. Or dump the spray. Otherwise you will almost certainly lose both customers.

This may not seem logical at first, but it is a valid theory. If both customers think they'll get theirs for half-price if they wait till you come to spray next door, you will never get either job again.

V. "Be Careful of Giving Discounts to Special People."

Sure, you want to give your friends and relatives a break. Right? Right! Everybody wants to be charitable. But, you are in business to make money, not lose it. Now before you think that is a hard line, consider one thing — for the most part, the tree business is a luxury

(continued on page 41)

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gets the trimming
job done
faster and easier.

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Government News / Business

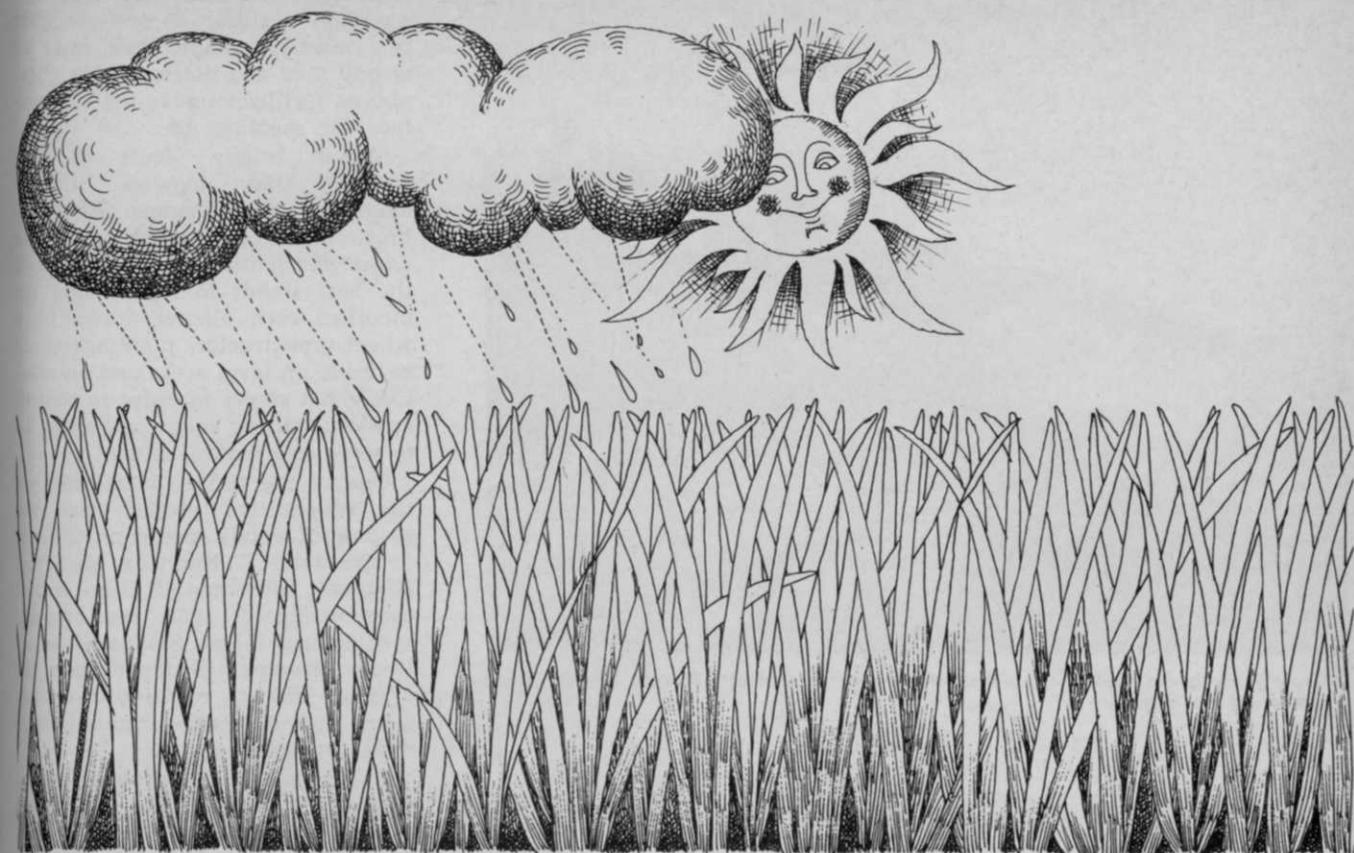
New Insecticide Registration Registration has just been announced for Dow Chemical's Zectran, an insecticide aimed at the spruce budworm and the jack pine budworm. The Federal Forest Service will use the insecticide this summer to replace DDT. Zectran is said to be 20 to 25 times more toxic than DDT to budworm. It has undergone six years of research and field testing in the west by the USDA plus extensive testing during development by Dow.

More \$'s For Pollution Clean-Up A \$350 million package has been made available via the Environmental Protection Agency to step up the attack on water pollution problems. EPA's release emphasizes that most of the money will go to municipalities for both new and past expenses on waste treatment plants. However, the regulations do give priority to critical pollution problems identified by the Administrator. He apparently may, at his discretion, apply some funds for aquatic weed control programs.

IRS Rules On Payment of 'User Taxes' Aerial applicators are subject to the new Airport/Airways Law, Public Law 91-258. In affect, according to an Internal Revenue Service ruling, this makes aerial applicators subject to both the \$25 registration fee and the 2-cent per pound tax on all pounds of maximum certificated take-off weight if the ship weighs more than 2500 pounds. The ruling makes applicators liable during the '70-71 fiscal year. Precise data is available from Farrell Higbee of the National Agricultural Aviation Assn., 1101 - 17th St. N.W., Washington, D.C. 20036.

DDT Hearings To Resume In Mid-Summer EPA reports that public hearings on federal cancellation of all remaining uses of DDT will begin in mid-summer. A pre-hearing conference was held for 12 formulators in mid-April, and others during May at Little Rock, Ark., and Washington, D.C. Some 42 formulators of DDT products appealed the original cancellation order. EPA expects to have the entire administrative review process for DDT completed by the end of March, 1972.

EPA Announces Organizational Changes Two organizational changes just announced by EPA Administrator William D. Ruckelshaus are worthy of mention. Of primary interest to the industry is creation of the position of Assistant Administrator for Categorical Programs. This assistant administrator, who will be nominated by the President, will assume charge of the Offices of Pesticides, Radiation, and Solid Wastes Programs. The other major change was appointment of Donald M. Mosiman as assistant administrator for Media Programs. Mosiman will head up activities of the Offices of Air and Water Programs. Acting commissioners for these offices in both instances have been eliminated.



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Shell does a better job.





Weeping lovegrass and sericea lespedeza control erosion. Woody Plants become established on slopes.

For Highway Rights-of-Way

Direct Plantings

By H. W. EVERETT
 Manager, National Plant Materials Center
 Beltsville, Md.

NEW HIGHWAYS yearly add thousands of acres of vegetation for state highway departments to maintain. Maryland alone seeds and mulches 2,000 acres of disturbed soil on highway projects annually. Such vegetation costs more to maintain than woody cover.

Thus in 1966, the Maryland State Roads Commission and the Soil Conservation Service signed a cooperative agreement, with the approval of the Bureau of Public Roads, to study effective and economic ways to establish woody plant materials on roadside sites. Establishment of low-maintenance plants on part of the normal right-of-way would allow more adequate treatment of sod areas.

Rather than miles of neatly mowed, or somewhat neglected grass, the motorist would have a varied landscape of trees, shrubs, wildflowers, and grass. Idea was to reduce maintenance costs, but not compromise stabilization, erosion control, and natural beauty.

Plant testing and studies are now

being conducted in the three climatic zones of Maryland. Many test sites in the Coastal Plain are problem areas. These consist of sandy, infertile, and droughty soils. The Piedmont soils rate fair to good in fertility, organic matter, and water-holding capacity, though sites with poor fertility and excessive drainage can be found. Shallow, poorly developed, rocky, and droughty shale soils are typical of many Appalachian sites. Both field and laboratory testing has also been done in sandy loam.

Hand-planting seed of many woody species—in the greenhouse, in cold frames, and on roadbank sites—to evaluate emergence results has been tried. Based on favorable emergence results, a corn planter was modified to direct-plant woody species. The machine includes a scalper, sod-seeding shoes, a press wheel, and a drag chain to incorporate seed and fertilizer into the soil. This machine will scalp a 10-inch sod strip, place seed of woody species $\frac{1}{4}$ inch to $\frac{1}{2}$ inch deep, place fertilizer to the side

and below the seed, and cover the seed and fertilizer. In one operation this machine plants two rows of woody seed and places a high phosphorus fertilizer under the soil surface for seedling use.

'Arnot' bristly locust (*Robinia fertilis*), silky dogwood (*Cornus amomum*), smooth sumac (*Rhus glabra*), and indigobush amorpha (*Amorpha fruticosa*) have produced the best stands to date. Using the modified corn planter drawn by a wheel-type tractor, plantings could be made on level areas and on relatively flat slopes in order to control erosion, drifting snow, and noise, or to serve as a natural screen.

One of the test hydroseedings of the cooperative project was the seeding of woody species on 40 acres of the John F. Kennedy Memorial Highway, Interstate 95. Since initial construction in 1963, the original seeding had failed. Slopes were actively eroding. Sedimentation in drainage ditches, roadside unsightliness, and increasing maintenance costs prompted action.

In October 1966, problem areas were checked. Plant materials adaptable to these soils were selected. Soil types included Tuxedo, Glenelg, Aura, and Beltsville. A report recommended that basic erosion repair and slope reconstruction were needed on 40 acres. Several low-maintenance cover-companion and woody plant species were recommended for use in the reseeding attempt. Plans were carried out in the spring of 1968.

Following erosion repair and slope reconstruction, the contractor applied 2 tons of dolomitic limestone and 250 pounds of triple superphosphate (0-46-0) per acre to all areas. Lime and fertilizer were worked into the top 2 inches of soil by dragging the slope with a harrow. The basic seed mixtures, woody species additives, and fertilizer used are shown in the accompanying box.

Basic seed mixtures were required to provide immediate erosion control on the slopes and to allow woody plant establishment between bunchgrass plants. Basic Mixture No. 1 was used on 8.36 acres, and Basic Mixture No. 2, on 31.10 acres. In the actual hydroseeding operation, woody species 1-A was added to a hydroseeder filled with Basic Mixture No. 1 and seeded on a designated site. Woody species 1-B through 1-E were added later, each to a separate tank of Basic Mixture No. 1 and seeded on separate sites. Basic Mixture No. 2 with its woody seed additives was seeded the same way.

Inoculant for leguminous plants was used at four times the recommended rate per unit of seed. All seeded areas were mulched with 2½ tons of wheat straw, and this mulch was cut in with a mulch-anchoring tool drawn by a small bulldozer. Areas inaccessible with the bulldozer were tacked with asphalt. Near the crest of many slopes, oak (*Quercus*) and maple (*Acer*) were hand planted in clumps using seven seeds per group at 1-inch to 2-inch planting depths.

Over the past three growing seasons the seeded areas have progressed from early cover-companion stabilization to present woody plant establishment. By August 1968, all slopes were stabilized with weeping lovegrass and sericea lespedeza. A followup fertilization of 10-20-20 and 38-0-0 at 500 lbs. per acre each was made. No woody seedlings were observed in 1968, and areas seeded to Basic Mixture No. 1 contained a sparse stand of crownvetch in addition to weeping lovegrass and sericea lespedeza.

In 1969 weeping lovegrass and sericea lespedeza were providing most of the plant population, but crownvetch and coralberry were the next most numerous species on their respective seeding sites. Other woody species observed in good distribution but in fewer numbers were as follows:

Scotch broom	<i>Cytisus scoparius</i>
fragrant sumac	<i>Rhus aromatica</i>
flameleaf sumac	<i>Rhus copallina</i>
Siberian crabapple	<i>Malus baccata</i>
cockspur hawthorn	<i>Crataegus crusgalli</i>
lespedeza	<i>Lespedeza daurica</i>
lespedeza	<i>Lespedeza daurica shimadai</i>
lespedeza	<i>Lespedeza japonica intermedia</i>

During 1969 weeping lovegrass set a good crop of seed, and sericea

Modified tool bar planter (F-76) with winged-sweep opener removes 10-inch sod strip, places fertilizer in 1-inch band to side and one inch below seed. Seed is planted ¼" to ½" deep and drag chain aids covering of seed. Large zero



BASIC SEED MIXTURE No. 1

Common Name	Scientific Name	Rate/Acre
weeping lovegrass	<i>Eragrostis curvula</i>	3 lbs.
sericea lespedeza	<i>Lespedeza cuneata</i>	20 lbs.
Scotch broom	<i>Cytisus scoparius</i>	2 lbs.
flameleaf sumac	<i>Rhus copallina</i>	} mixed
fragrant sumac	<i>Rhus aromatica</i>	
crownvetch	<i>Coronilla varia</i>	20 lbs.

Woody Species Additions to Basic Seed Mixture No. 1:

Code No.	Common Name	Scientific Name	Rate/Acre
1-A	Scotch pine	<i>Pinus sylvestris</i>	2.16 lbs.
1-B	Amur honeysuckle	<i>Lonicera maackii</i>	.79 lbs.
1-C	memorial rose	<i>Rosa wichuraiana</i>	1.5 lbs.
1-D	Siberian crabapple	<i>Malus baccata</i>	1.19 lbs.
1-E	black-eyed-Susan	<i>Rudbeckia hirta</i>	} .33 lbs.
	common lilac	<i>Syringa vulgaris</i>	
	New Jersey tea	<i>Ceanothus americanus</i>	

Fertilizer: Inorganic: 10-20-20 @ 400 lbs./acre
Organic: 38-0-0 @ 440 lbs./acre

BASIC SEED MIXTURE No. 2

Common Name	Scientific Name	Rate/Acre
weeping lovegrass	<i>Eragrostis curvula</i>	3 lbs.
sericea lespedeza	<i>Lespedeza cuneata</i>	20 lbs.
bayberry	<i>Myrica pensylvanica</i>	6 lbs.
coralberry	<i>Symphoricarpos orbiculatus</i>	3 lbs.

Woody Species Additions to Basic Seed Mixture No. 2:

Code No.	Common Name	Scientific Name	Rate/Acre
2-A	American bittersweet	<i>Celastrus scandens</i>	.75 lbs.
2-B	cockspur hawthorn	<i>Crataegus crusgalli</i>	1.0 lbs.
2-C	eastern redcedar	<i>Juniperus virginiana</i>	1.0 lbs.
2-D	lespedeza mixed	<i>Lespedeza daurica shimadai</i>	2.0 lbs.
		<i>Lespedeza daurica</i>	
2-E	lespedeza	<i>Lespedeza japonica intermedia</i>	2.0 lbs.
2-F	Austrian pine	<i>Pinus nigra</i>	1.0 lbs.

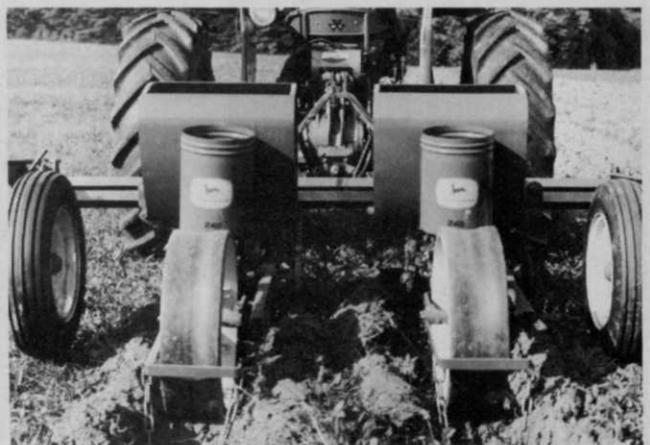
Fertilizer: Inorganic: 10-20-20 @ 500 lbs./acre

lespedeza produced some seed for reseeding sparsely vegetated areas. Spot planted species emerged and were very successful. Woody volunteers, including poplars (*Populus* sp.), black locust (*Robinia pseudoacacia*), staghorn sumac (*Rhus typhina*), smooth sumac, and flameleaf

sumac were noted with several colonies of sumac becoming extensive.

Observations of the seeded sites were made in June and August 1970, the third growing season following seeding. All slopes were stabilized. Areas seeded to the mixture con-

pressure tires and wheels drive seeding and fertilizer units. Outer gauge wheels (3.90 x 15") aid in controlling depth. Note the larger 24-inch drive wheel and drag chain.





Cover-companion species (weeping lovegrass and sericea lespedeza) allow seedling of woody lespedeza to establish (Spring '69).



Mulch anchoring tool for incorporation of seed and mulch with soil requires heavy power unit. Work was done on the John F. Kennedy Memorial Highway in the state of Maryland. Effort was a government research project in cooperation with state.

taining crownvetch are being dominated by this plant. The crownvetch is setting an excellent crop of seed. Areas seeded to the mixture containing coralberry have good plant stands of that species 8 to 36 inches high. Density varies, with the heaviest stands occurring in areas of low-

est competition. All other woody species observed in 1969, with the exception of Scotch broom and Siberian crabapple, are present in 1970. Most are 8 to 10 inches tall, but some of the lespedeza is blooming and should set seed this year.

Weeping lovegrass and sericea lespedeza are acting as a cover-companion crop. They are stabilizing the slopes with a protective canopy of vegetation and an extensive root system, and acting as a living mulch for volunteer and seeded woody species. They will provide an attractive low-maintenance cover until the later stages of succession dominate.

In addition to being tested in direct mechanical seedings and hydroseedings, many species have been tested and compared in line-out stock plantings, row seedings, herbicide trials, mulch trials, and peat pellet seedling trials.

Acceptable species for use on roadsides must be easy to establish, adaptable to subsoil sites, and relatively free from pests. They must have aesthetic value, including desirable form and size. And they must have conservation value. Many species have failed to meet

these criteria in one or more test plantings; some species have been successful.

Test plantings have shown that establishment procedures can differ from species to species. Some species are unadaptable to certain soils and sites. The grass used for initial erosion control when seeding woody plants must be a bunchgrass to reduce competition and allow woody seedlings to establish between grass plants. In several plantings adequate mulch and mulch tacking have proven beneficial for erosion control and stand establishment. Many sites have proven unacceptable as test areas because herbaceous plants grow rapidly after the sites are fertilized.

As a result of fertilizer applications, some sites prepared for test seedings by mowing, spraying, and grubbing out sparse vegetation looked, 2 years after seeding, as though they had never been disturbed.

In plantings where the seed of woody species is incorporated into the soil, germination and establishment have been higher per unit area. Merely broadcasting the seed on the roadside does not, in most

Coming
In
WTT
For July:
The Big
Aquatic Weed Control
Issue



Oak seedlings were four feet high by August '70.



Spot planted oak seedlings on John F. Kennedy Memorial Highway emerged in the spring of 1969.

cases, produce a satisfactory stand of woody plants.

Establishment of many shrub and tree species may be possible by direct seeding. Additional tests are needed and will be carried out. A beginning has been made and when the final plantings have been evaluated, direct seeding of woody plant material should be a commonplace.

Adapted from a report by H. W. Everett, Charles R. Anderson, Gary V. Schultz, and Richard Dudley, Agricultural Research Center, Beltsville, Md., presented by Mr. Everett at the Twenty-ninth Ohio Roadside Development Short Course at Columbus, Ohio.

Toro Purchases Viking Corporation

Toro Manufacturing Corporation at Minneapolis, Minn., has just purchased Viking Manufacturing Corporation of Manhattan, Kan.

Viking makes a roller blade line of turf-conditioning equipment, a tool which handles various cultural practices from rough grading through seeding and fertilizing. The new addition to Toro's line of mowers and others turfgrass care equipment will be known as the Toro Landscaper. It will be produced in Toro's Minneapolis plant and marketed through Toro's Turf Products Division.

Toro's president, David T. McLaughlin, in announcing the purchase said that key markets sought for the new machine would include golf courses, parks, schools, cemeteries, landscape contractors, and sod growers.



Coralberry seedlings grow through weeping lovegrass cover — companion species. Photo made August 1970.

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Pesticide Legislation — Just Where Are We Headed

HARD NEWS on pesticide legislation is right now in a lull period. Public hearings before both House and Senate committees in Congress have ended—for the Federal Environmental Pesticide Control Act of 1971. Debate on the floor of Congress is not as yet scheduled.

Of the deluge of bills submitted on most every conceivable phase of the current pesticide hassle, only the one major piece of legislation — H.R. 4152 (the House version) and S-745 (Senate) — seems certain of serious congressional consideration this year. No other Federal pesticide bills show promise of being recalled from committee.

But this one major bill, almost sure to be passed (with amendments) this year or in the foreseeable future — the Federal Environmental Pesticide Control Act of 1971 — has the backing of most segments of the pesticide industry, (with suggested changes), including both manufacturers and users. Even many of the ecology and environmentalist groups support major aspects of the bill.

In brief, this Bill (H.R. 4152 and S-745) revises the current Federal Insecticide, Fungicide, and Rodenticide Act and substitutes stronger pesticide controls in a number of areas.

For example, the changes would (1) designate some pesticides for general use, (2) limit some to use by licensed professionals only, and (3)

limit others for use by permit only. Further the Bill places great discretion as to pesticide use in the hands of the Administrator of the new Environmental Protection Agency.

Promising to dwarf in volume the Federal legislation are measures being considered by a number of states. A total of 48 state legislatures are in session this year. All have bills relating to pesticide use, pollution, and the environment in general before them. No judgment as to the effect these state bills will have on local pesticide use is possible at this time.

However, the most heartening aspect of the total picture is the surfacing of considerable pro-pesticide practical research. After a two-year lull, a considerable amount of practical research is coming to light. All segments of the industry seem to be pulling together solid data on which to base decisions — and which both legislators and the industry can use for the common good.

One example concerns contamination of ground water and has been released by North Carolina State University. In this pioneering study on the movement of DDT and toxaphene in surface water, some so-called “surprises” were evident. The N.C. study showed: (1) less environmental contamination (about half) was found when DDT was used in combination with toxaphene than when DDT was used alone; (2) only small amounts of the chemicals were found outside the areas in which they had been applied; and (3) the toxaphene proved to be less persistent than originally thought, though it did pose other problems.

This study was conducted on a cotton crop, to determine movement of insecticides in runoff water. Dr. J. R. Bradley, N.C. Univ., said the crop was treated 12 times at weekly intervals. Only four percent of the DDT and one percent of the toxaphene later appeared in surface runoff water. But practically all that did move off the crop area in surface water was attached to soil particles which moved due to erosion. In short, the chemical left the field while clinging to soil particles being washed away. Dr. Bradley has pointed out that soil conservation is one tool available to prevent contamination of water by DDT and other persistent pesticides.

Another industry plus are manufacturer actions such as one just announced by Dow Chemical — the formation of an Environmental Testing Advisory Board. This board will serve as Dow's technical authority advising all functions and manage-

ment levels on effects of products and new or changed processes. It will also advise on registration requirements and on customer and public environmental safety needs.

Specifically, the Dow board will (1) establish standardized test procedures, (2) assess capabilities of both Dow and non-Dow laboratories and identify those best able to conduct specific environmentally related experiments, (3) serve as a repository for data acquired from studies conducted outside of Dow, (4) help interpret experimental results, and (5) provide advice and recommendations on such environmental testing. Chairman is Dr. Charles W. Hinman, assistant director of Corporate Research and Development. Many groups outside the industry have begun to lend support.

The U.S. Chamber of Commerce for example, has taken a strong stand supporting a sane approach to legislation relating to pollution control and the environment in general. This group presents a powerful voice. President of the U.S. Chamber F. Ritter Shumway, stated that "there is a regrettable tendency in American society to search for a villain behind every problem." The Chamber message by Shumway says

simply that, "It took us years to foul our environment, and it is going to take us years to clean it up. In the process, we must take great care to avoid creating new problems even bigger than the ones we are trying to solve.

"Extremism in any cause, however noble, usually provokes a counterreaction. The environmentalist cause is a good one. I would hate to see it discredited and forgotten by the American people because of immoderate conduct on the part of some overzealous crusaders who are more adept at generating emotions

than in digging out facts."

Meanwhile, the EPA is continuing its "administrative review" of DDT, 2,4,5-T, aldrin and dieldrin, concerning present labels. These evaluations are not connected to legislation. The EPA has authority to issue registrations and lift bans if deemed advisable by the agency itself. Thus, solid data which can be made available by the industry — including users, manufacturers, researchers, etc. — will without doubt have a bearing on Federal regulatory agencies, of which the EPA is now the foremost.

NEW 72" AND 90"

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The knives in Terrain King's new Flail Mower can be changed without tools — from a selection that tailors the Flail Mower to your exact requirements. And the knives are reversible for extended service life.

Extra heavy duty bearings and rugged frame and roller contribute to long, trouble-free life.

The Flail Mower is especially safe for the operator, pedestrians and property. Guards for both the drive line and the gear box are standard. The rotor enclosure and a heavy flap type deflector positively control flying debris.

The Flail Mower adjusts easily for cutting heights from 1-1/4" to 7". It is available in lift or pull models, in 72" and 90" cutting widths.

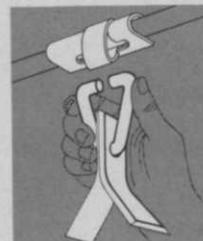
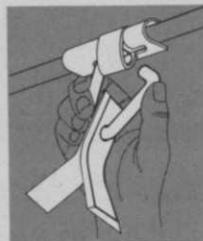
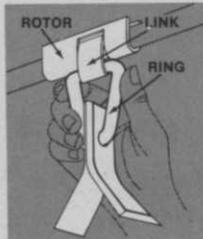
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What's The Difference

Part of the trouble that we're having today in understanding the pesticide situation is that we don't understand the language being used. Let's get a couple of terms straight; they are CANCELLATION and SUSPENSION.

CANCELLATION — means that the procedure in section 4C of the Federal Insecticide, Fungicide, and Rodenticide Act is enforced. Section 4C reads that the Secretary of Agriculture (now its Administrator is EPA) may refuse to register a pesticide. He informs the manufacturer of this and the manufacturer has 30 days after receiving the notice to file objections. If he files objections, a committee is appointed to study the pesticide in detail. Eventually a decision is made by the administrator. **In the meantime, the pesticide in question may continue to be used.**

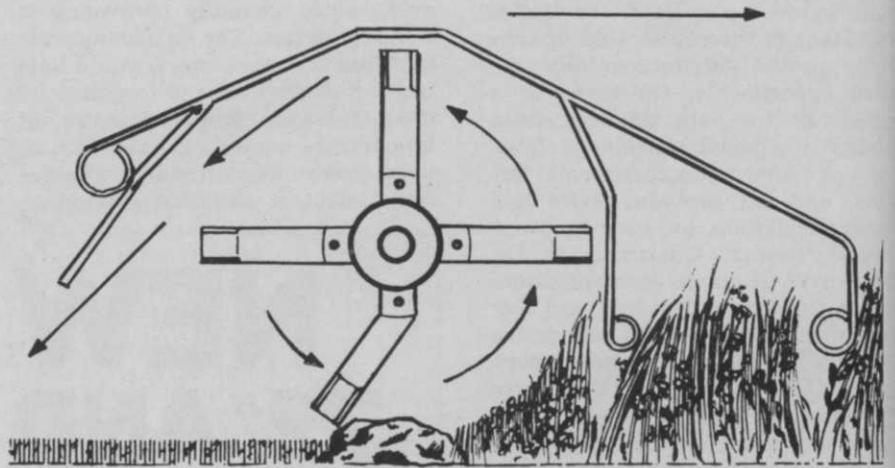
SUSPENSION — means the pesticide in question cannot be used.



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*Slopemower and RAILBIRD are trade marks of Astron Corporation, a subsidiary of Engler Manufacturing Corporation.



'Why I Believe in Flail Mowers'

By **ELMER MOTT**
Mott Corporation, LaGrange, Ill.

COMMERCIAL TURF is big business today. Maintenance is technical and expensive. Professionals in the business may find themselves charged with the greenbelt area of a shopping center, or with the vast sodded areas of an airport. These plus golf courses, factory lawns, city median strips, parks, highway and utility rights-of-way, athletic fields, and a host of other turfgrass areas have led to development of a \$5 billion industry.

Commercial turfgrass areas today range from the very small to the vast, smooth or rough, clean and trashy, level or steeply banked. Vegetation may range from fine lawn type grasses regularly cut and closely cropped to tough field grass growing thick, high and intermittently cut, to weeds and brush, or even revenue producing seed or hay crops.

Moisture conditions may range from dry to "liquid wet!"

A mower must be capable of meeting these conditions. Further, and most important, it must do so with complete safety. Commercial turf areas may involve many people and autos. A misguided object, thrown out by a mower, can result in extremely serious bodily injury or expensive property damage.

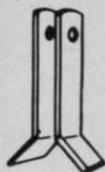
To meet these conditions, the commercial mower must have many qualities. Some, such as width of swath, maneuverability and steep slope stability relate to individual model design and have no bearing as to type. The reel, the rotary and the flail all are available in sizes ranging from small compact highly maneuverable units to wide swath gangs.

Other mowing performance factors such as cutting effectiveness on all types of growths (fine lawn grass, tough field grass, weeds and brush, short or high) on all types of terrain (smooth or rough, clean or trashy, wet or dry); mowing speed; simplicity of operation and safety are directly related to mower type.

The cutter bar, the reel and the rotary have been around so long most are quite familiar with their capabilities and limitations. I am not so sure there is the same degree of understanding about the flail, and in as much as this is "The Case for the Flail," I will direct my comments mostly thereto.

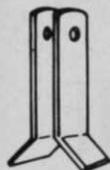
Flail has come to mean a type of mower consisting basically of a horizontal shaft designed to rotate at moderately high speeds and attached thereto a number of free swinging knives, cutters, blades,

Flail Mower Blades Available



GENERAL PURPOSE

C5 (3/4 x 5" pin mounted) Standard. Recommended for general purpose mowing of grass and weeds, and mulching leaves. Used in clean areas relatively free of rocks and trash.



TOUGH CUTTING—SCALPING—OVER SEEDING

H386 (1 1/4 x 5" Hardened-pin mounted) For extremely tough cutting conditions and for renovating (scalping or over seeding). The greater weight of this knife provides more cutting authority and the extra width increases the useful life almost three times over that of the C5 knife listed above.



THATCH THINNING

H387 (1 1/4 x 5" Hardened-pin mounted-straight knife) Used singly with spacer washers rather than in pairs like the other MOTT knives. For Thatch Thinning. Set cutting height to near ground level or slightly below.



ROCKS & TRASH

H293 (1 1/4 x 3" Hardened-Ring mounted) For Heavy Duty mowing operations in rocky, trashy areas. The ring mounting of the knives provides flexibility to allow the knife to move in all directions, sideways as well as fore and aft, thus minimizing the possibility of a knife bending or breaking.

beaters, chains or the like—referred to in themselves as flails. These rotate in a vertical plane about the horizontal shaft, centrifugal force holding them straight out during operation.

Just as there are variations within the families of "reel," "rotary" and "cutter bar" mowers, so there are within the family of "flail" mowers. Dependability or structural integrity is a matter of design detail and will vary depending upon the manufacturer and model offered.

Versatility of performance, cutting ability, and power requirements also will vary depending upon the style or type of the individual cutters or "flails" used. Generally speaking, the sharpened knife type flail, mounted to cut with an edge-wise slicing action, cut more efficiently, take less power, are lighter and therefore operate with a greater degree of safety than other type flails. Even so, all flail type mowers provide far greater operational safety than do rotary type mowers. The reason is a simple matter of physics. Both types cut with an impact action rather than with a shearing action such as the reel and cutter bar types use. Indeed, the flail mower is sometimes referred to as a "vertical rotary."

The impact force imparted by the cutting blade upon contact with an

object, whether it be the vegetation to be cut, or a rock, is dependent upon the mass (weight) of the blade and the square of the impact velocity. Thus a rotary blade weighing 10 pounds, moving with a tip speed of 150 mph has over 400 times the impact force of a flail blade weighing 1 1/2 ounces traveling with a tip speed of 75 mph.

The point is that the light weight 1 1/2 ounce flail blade traveling 75 mph, especially the thin sharpened knife type blade, does impart enough impact force to cut the heaviest of grass and weeds and even light brush up to about one inch in diameter, but does not deliver excessive forces that can hurl a struck object with the speed of a bullet.

Another factor that adds to the

safety aspect of the flail mower is its vertical mode of operation. A horizontally acting rotary tends to move cuttings and struck objects out horizontally in all directions and, to be rendered usable with some degree of safety must be heavily guarded with solid sheet metal or flexible chain shields which extend down to the ground on all sides. However, a discharge chute of some sort is needed to provide means for the ejection of cuttings, so complete guarding is well nigh impossible.

On the other hand, the flail, operating vertically, has no tendency to move cuttings or struck objects sideways, an excellent feature when moving along roadways as nothing is ejected onto the roadway. Most flails

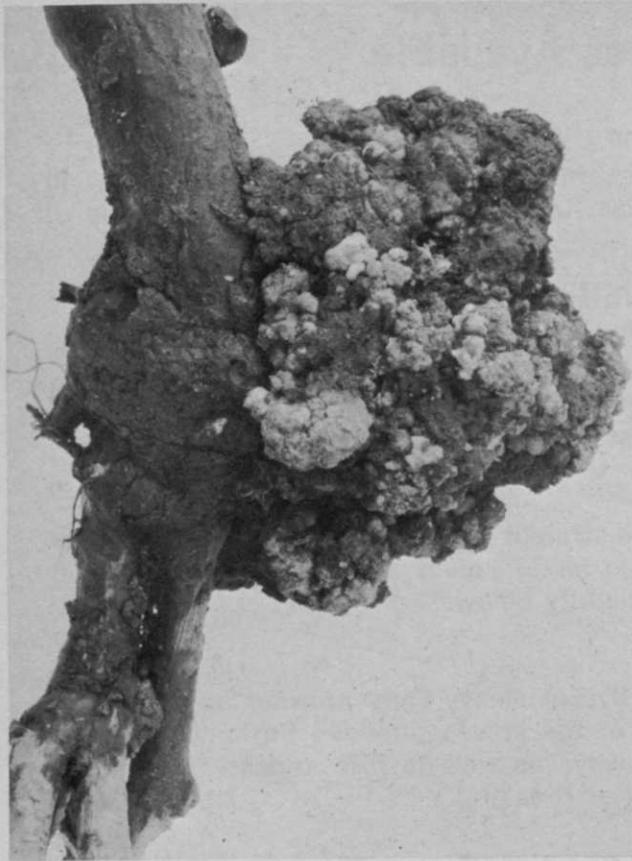
(Continued on page 38)

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Crown Gall of Woody Plants

By DR. W. C. HOCK

Plant Pathologist
United States Department of Agriculture
Delaware, Ohio

CROWN GALL is a widely prevalent and destructive disease that occurs on a wide variety of plants including at least 145 genera within 61 widely separated plants families. We here are, of course, more familiar with crown gall on shade, fruit, and nut trees, and on woody and herbaceous ornamentals.

The disease is caused by the bacterium *Agrobacterium tumefaciens*. The organism enters the plants only through wounds. Direct penetration through uninjured plant tissues has not been reported. The most common site of gall development is on the roots of the crown area, but galls may also appear on stems and other above-ground plant parts such as occur on quince, apple, rose, euonymus, willow, and poplar, to name a few.

Severity of crown gall disease depends on several factors:

- 1) species infected,
- 2) location and number of infections,
- 3) size of the galls — incidentally, galls can vary from size of a pea to galls that weigh 50 to 100 pounds.
- 4) and whether or not secondary infections have occurred.

How does the disease affect the

plant and what is the economic impact of the disease to the grower?

Crown gall can reduce the productive life of plants by weakening the stems, disrupting the translocation system, predisposing them to secondary pathogens, and producing a general decline in vigor. Secondary fungus infections from galls in the crown area often result in heartrots which cause trees to die or fall over. For example, hundreds of almond trees in California die or are blown over every year due to heartrot caused by crown gall infections which occurred many years earlier.

Crown gall is a primary cause of condemnation of nursery stock. Substantial losses are sustained by nurserymen discarding trees and shrubs infected with crown gall. A 1963 report estimated that losses in California orchards alone exceeded \$6 million annually. Undoubtedly, this figure today approaches the \$10 million mark. The disease often is initiated right in the nursery when planting liners, propagating, harvesting, or during procedures that may injure the plant; however, it can occur anytime during a plant's life. Since the disease is generally considerably more serious when infection occurs during the first 3

years after planting, extra precautions must be taken to avoid wounding during this period.

How can the grower prevent and control crown gall infections?

1. Avoid wounds during planting, cultivating, and digging.
2. Use disease-free stock — that is, inspected and certified stock.
3. Dip plant stock — since there are many opportunities for apparently disease-free stock to be carrying the bacterium, dip the roots in a bactericide prior to planting.
4. Extreme care should be used in grafting to avoid transmission of the bacterium from one plant to another.
5. Rotate crops and select clean ground. Fumigate, if necessary.
6. Use sanitary practices — avoid mixing diseased and healthy nursery stock at digging time. Destroy diseased stock as soon as possible. Avoid transporting contaminated soil to clean ground.
7. Surgery — remove galled tissues completely.
8. Use resistant plant material whenever possible.

9. Treat galls with a chemotherapeutic agent.

I would like to elaborate on this last point. There is now commercially available a product called **Bacticin** which appears to have a high affinity for galled tissues and causes a selective degeneration of the tumors.

In a study conducted at the Shade Tree Laboratory in Delaware, aerial galls on six-month-old Sherrill hybrid poplar rooted cuttings were treated directly with undiluted **Bacticin**, which is a coordination product of two hydrocarbons, 2,4-xyleneol and metacresol. The trees were treated three times during the growing season and then placed in a lath house to overwinter and examined approximately one year following the last treatment. We treated comparable groups of galled plants with either streptomycin SO_4 or water. These served as our checks or controls.

One year following treatment 47% of the **Bacticin** treated trees were regarded as healthy — that is, the main leader was alive and there wasn't any visible evidence of renewed gall development. On the other hand, only 4-5% of the streptomycin SO_4 and water treated plants were categorized as healthy. Most trees were either killed outright or the main leader was dead and sprouts were developing below the gall. About 90% of the trees in the streptomycin SO_4 and water treated groups fell into these two categories.

Bacticin-treated trees show three types of responses:

1. inhibited and gall degeneration
2. inhibited gall, but tumor remaining essentially intact
3. inhibited gall from last year, but new gall formation

In summary, **Bacticin** gave approximately a 10-fold increase in the number of healthy plants over the streptomycin SO_4 and water treatments. Furthermore, **Bacticin** appears to have a high affinity for galled tissues and definitely possesses chemotherapeutic properties.

By utilizing materials which possess curative properties and by strictly observing the fundamental principles of preventative medicine, losses from crown gall can be greatly minimized. Is it worth the added effort and cost? I think it is. Just ask any nurseryman who has had to dispose of large quantities of nursery stock because of crown gall disease!

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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Western Chapter of the International Shade Tree Conference annual convention, Del Webb Townhouse, 9th & Market Sts., San Francisco. June 20-23.

American Association of Landscape Architects annual meeting, Portland, Ore. June 20-24.

Grassland '71 fourth annual field day, Eugene, Ore., Municipal Airport. June 23-27.

California Landscape Contractors Association at King's Castle, Lake Tahoe. June 23-27.

American Sod Producers Association, Annual Meeting, Michigan State University Muck Experiment Farm, East Lansing, Mich. June 29.

Shade Tree Meeting, Ohio Agricultural Research and Development Center, Wooster, Ohio. July 7.

Hyacinth Control Society, Annual Meeting, Manger Motor Inn, Tampa, Fla. July 11-14.

American Association of Nurserymen convention, Statler Hilton Hotel, Dallas, Tex. July 17-21.

1971 Midwest Nursery and Landscape Exposition at D. Hill Nursery, Dundee, Ill. July 25-27.

United States Department of Agriculture Turfgrass Field Day, Plant Industry Station, Beltsville, Md. Aug. 4.

47th International Shade Tree Conference at the Queen Elizabeth Hilton Hotel in Montreal, Quebec, Canada. Aug. 8-12.

American Society of Agronomy, Crop Science Society of America and Soil Science Society of America concurrent meetings in New York City. Aug. 15-20.

Penn State Turfgrass Field Day at the Joseph Valentine Turfgrass Research Center, University Park, Pa. Aug. 25-26.

National Association of Professional Gardeners, Annual Conference, Princeton Inn, Princeton, N.J. Aug. 28-30.

Michigan State Turfgrass Field Day at the Crop Science Field Laboratory in East Lansing. Sept. 9.

Alabama-Northwest Florida annual turfgrass short course in cooperation with Auburn University, Auburn, Ala. Sept. 9-10.

Florida Turf-Grass Management Conference, Pier 66, Ft. Lauderdale. Sept. 19-22.

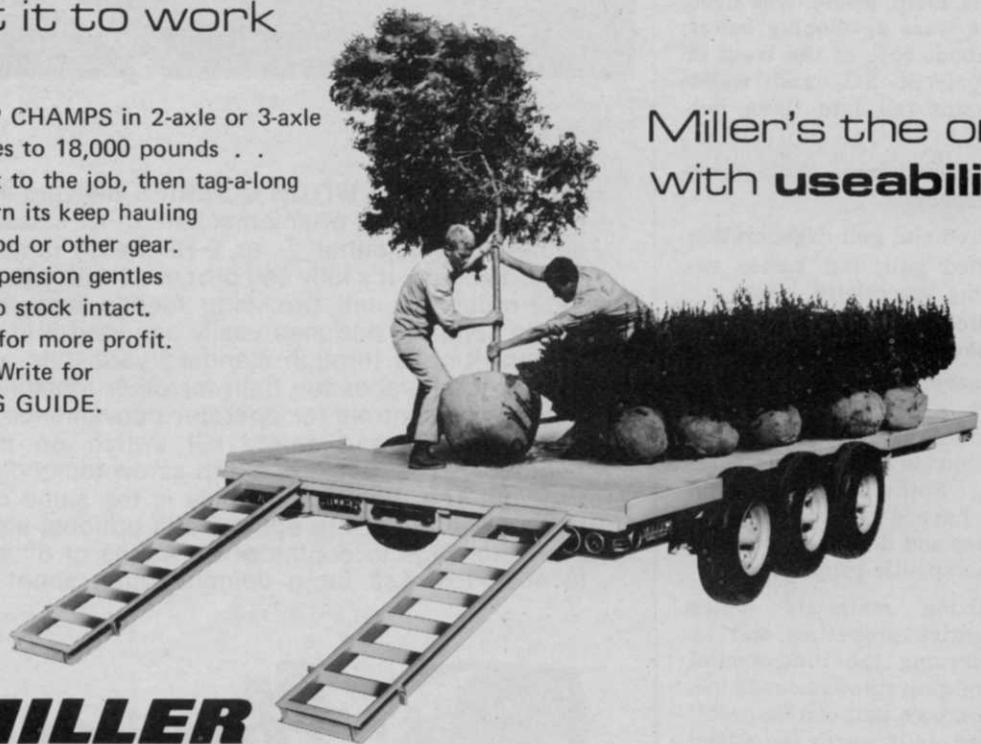
Midwest Regional Turf Foundation field day, Purdue University, Lafayette, Ind. Sept. 27.

30th Annual Short Course for Roadside Development, Columbus, Ohio. Oct. 4-8.

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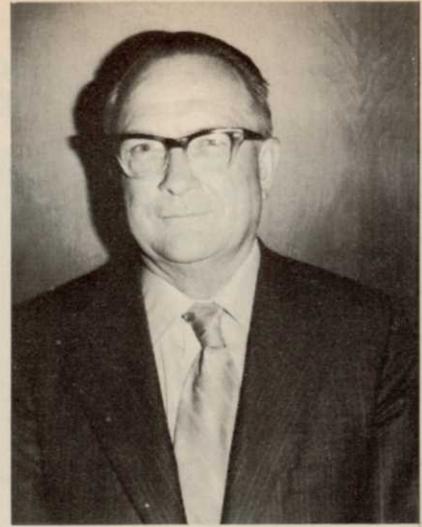
**Treflan
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(Balan®—benefin, Elanco)



Leadership for ASCA during the coming year, reading from the left: president-elect, Dr. L. C. Chadwick; immediate past-president, Ray Gustin, Jr.; president, George W. Goodall; executive director, Dr. Spencer H. Davis, Jr.; vice-president, George P. Morrow. The new secretary-treasurer, W. Roland Shannon was not present.



Dr. Donald A. Spencer, Ecologist for the National Agricultural Chemicals Association.

Consulting Arborists Plan For '72 Annual

Some bird and animal populations have increased 10- to 50-fold in recent years despite the use of pesticides. So reported Dr. Donald A. Spencer at the recent annual meet-

ing of the American Society of Consulting Arborists at Washington, D.C.

Dr. Spencer, who spent more than 30 years working as a staff member of the Fish and Wildlife Service for the United States Department of Agriculture is now an ecologist for the National Agricultural Chemicals Association.

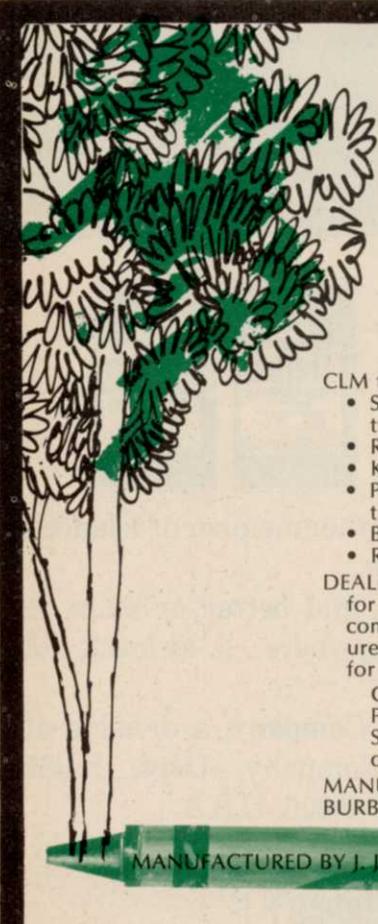
Some birds and animals which were close to extinction earlier in the century are now at the point of nearly over-populating some areas, Spencer said. This picture is in sharp contrast to much of the current furor relating to ecology and its destruction.

Dr. Spencer presented data to support his claims that in one state the grouse harvest has climbed from 5,000 to 43,000 in the last 25 years. Quail harvest is up to 110,000 from 21,000 during the same period, and the pheasant harvest has doubled.

Members of the ASCA, held both educational and business meetings during the Washington, D.C. session, and made plans for their 1972 annual meeting. It will be held at Tampa, Fla., during February.

Dr. L. C. Chadwick, the new President-elect of ASCA, chaired a panel with Henry Vaughn-Eames, Walter Ritchie and Freeman Parr on use of the recently revised Shade Tree Evaluation Formula as developed by the International Shade Tree Conference. The panel pursued the theme that any formula is of value only when used in conjunction with years of experience with trees and an understanding of their past and present care. Members were urged to be extremely careful in preparing a disposition before the court that only facts are presented because later questioning by the opposition could turn an unqualified statement into a point against their own case.

To continue the theme of tree evaluation, Fred Micha, as Chairman of the Case Histories committee reviewed case histories on file with ASCA. Payment of claims, as re-



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lated to case histories, were discussed by participating members. Micha's committee is in the process of developing a more standardized form for reporting on tree surveys and appraisals.

At the final business session, new officers and directors were elected. Ray Gustin, Jr., handed over his gavel to incoming President George W. Goodall, Maine, and welcomed President-Elect Dr. L. C. Chadwick, Ohio; Vice-President Walter P. Morrow, Pennsylvania and Secretary-Treasurer W. Roland Shannon, Pennsylvania. The directors named for the coming year were O. J. Andersen, Texas; A. Murray Swanson, Arizona; F. L. Dinsmore, Missouri; F. Earle Martin, Toronto, Canada, and Ray Gustin, Jr., Maryland. Dr. Spencer H. Davis, Jr., New Jersey will continue as Executive Director.

ASCA members will meet next in conjunction with the International Shade Tree Conference in Montreal, Canada in mid-August.

Plans Underway for I.S.T.C. At Montreal, August 7-14

The 47th annual meeting of the International Shade Tree Conference is set for August 7-14 at Montreal, Quebec. Headquarters will be the Queen Elizabeth Hotel.

Executive Secretary E. C. "Cal" Bundy (P.O. Box 71, Urbana, Ill. 61801) is equipped to furnish details for members, exhibitors, and others interested in tree care who wish to attend.

Dr. E. B. Himelick, executive director of the I.S.T.C., is program committee chairman and Dr. Yves Desmarais, the Montreal local committee chairman. Four special events in addition to the regular educational program have been scheduled. These are: (1) A special "Exhibitors Nite" rather than field demonstrations. Purpose is to allow exhibitors to display their products in addition to entertaining via prizes, games, etc.; (2) An evening break-away event. This will include an afternoon trip to the site of the Montreal World's Fair, and an I.S.T.C. street dance in Old Montreal in the evening; (3) A second evening is set aside for two special presentations, one by Clarence Lewis of Michigan State University, and the other by Stauffer Chemical Company; and (4) Post-convention trips are planned for Europe (2 weeks), Quebec City (overnight), and for Ottawa (1 day).

Special programs are also on the agenda for wives and youngsters.

Both are steeped with French enchantment and the Montreal atmosphere.

National Attention Focused On Aquatic Weed Meeting

Featured speaker for the Hyacinth Control Society's '71 annual meeting will be the Environmental Protection Agency's regional coordinator for Region IV, Mr. John R. Thoman. Thoman will appear July 12 and will present EPA's procedure for determining pesticide use in the months ahead.

Every company producing equipment and chemicals for aquatic weed control will have representatives on hand for this conference at Tampa, Fla., this coming month. Besides company representatives, the membership consists of contract applicators, research scientists, and all types of supervisory personnel responsible for keeping waterways and surface reservoirs free of all types of noxious aquatic weeds.

The national session is set for July 11-14. Headquarters will be the Manger Motor Inn (details available from Stanley Abramson, president of the Society, P.O. Box 1096, Tampa or tel. (813) 626-2111).

Abramson reports the Society board is inviting anyone with an interest in aquatic weed control. Registration is well ahead of last year's session at Huntsville, Ala. Abramson says the current reservation list indicates that representatives from some 35 states and 6 foreign countries will be on hand.

Papers are submitted each year by the membership as well as field men and scientists outside the organization. Among those featured this year will be Dr. Alva P. Burkhalter, Director of Aquatic Weed Control for Florida. His paper is entitled, "Policy and Plans of the Department of Natural Resources Related to Aquatic Weed Control and Research." This is especially appropos in light of proposed legislation in Florida to ban all use of pesticides in that state's waters by 1973.

L. V. Guerra, project leader for statewide noxious weed control in Texas, will discuss "Reclamation of Lost Recreation Areas." These are only two of some 40 papers to be presented.

Besides the educational program and field demonstrations, a full program is planned for families. Special rates have been arranged at the headquarters hotel (\$12 single and \$17 double or twin).



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SOD INDUSTRY SECTION



James Beard, right, and John King check Michigan State University sod research. Dr. Beard and staff will show latest experimental work at combined Michigan State Sod Research Field Day and ASPA summer meeting, June 29.

American Sod Producers Assn. Plans Farm and Research Tour

Trustees for the American Sod Producers Association have announced two major events important to the sod industry.

First on the agenda will be the annual ASPA summer meeting. This will be held in conjunction with the Michigan State Sod Research Field Day at the Muck Experiment Farm on Tuesday, June 29 starting at 1:00 p.m. The Muck Experiment Farm is located on the outskirts of East Lansing.

Sod producers at this event can see and discuss first hand with researchers, the most concentrated and intensive sod research program in the United States. The tour of the research plots, organized and conducted by Dr. James Beard and his staff at Michigan State, will include vital areas of concern to sod producers.

Specific items to be shown and discussed include: (1) sod strength and transplant rooting evaluation of turfgrass varieties, Kentucky bluegrass brands, Kentucky bluegrass-red fescue mixtures as well as

various cutting heights and frequencies, (2) fertilization program for sod establishment, including rates, frequencies of application and types of carriers, (3) sod production subsidence studies as compared to normal cropping practices, (4) seeding rate and date studies, (5) sod disease problems, particularly Fusarium blight control, (6) sod weed control including control of annual bluegrass and control in young stands of Kentucky bluegrass, (7) sod clipping utilization studies, (8) sod heating and prevention studies, and (9) sod nematode studies.

Specific steps are as follows:

- Stop 1, Nitrogen Fertilization of Bluegrass-Red Fescue sod mixtures;
- Stop 2, Fusarium Blight Control in Kentucky Bluegrass sod with systemic fungicides.
- Stop 3, Organic soil subsidence and soil removal in sod production;
- Stop 4, Fertilizing for sod strength and rerooting;

- Stop 5, Factors influencing sod heating;
- Stop 6, Potential uses for pelletized clippings;
- Stop 7, Annual Bluegrass control studies with endothall;
- Stop 8, Weed control studies in new Kentucky Bluegrass seedings;
- Stop 9, A survey of nematode problems in sod production;
- Stop 10, Seeding rate and date studies for sod production;
- Stop 11, Comparative sod strength and transplant rooting capabilities of 30 Bluegrass varieties;
- Stop 12, Bluegrass blends and Bluegrass-Red Fescue mixtures for sod production;
- Stop 13, Effects of cutting heights and frequency on sod strength and transplant rooting capabilities and;
- Stop 14, Sod quality as affected by varying percentages of Canada Bluegrass in the seed source.

The data discussed for many of the studies will include actual measurements of sod strength and the transplant rooting capabilities which were developed at MSU.

Individuals wishing additional information concerning housing, etc. can write Robert Shearman, Department of Crop and Soil Sciences, Michigan State University, East Lansing, Michigan 48823.

Scheduled the evening of June 29, after the tour of the plots, will be the annual meeting and banquet of the Association. Included among the items of business at the meeting will be election of three members to the Board of Trustees.

Activities will continue on the following day (June 30) with a day-long tour of the Michigan sod industry. Host organization for the tour will be the Michigan Sod Growers Association. Don Juchartz, Wayne County Extension Director, and Bob Hozak, President of the Michigan Sod Growers Association, are planning the tour.

Looking ahead to the second major activity—Cal-Turf in California will be host to the national Educational Conference and Sod Equipment Field Day. This major event is scheduled for February 22 thru 24, 1972. Plans are being formulated. Specific details will be announced in forthcoming issues of Weeds Trees and Turf.

Jacklin Seed Company, Inc. Gives Fylking Top Rating

Fylking Kentucky bluegrass is one of the delightful, new "fine-textured" varieties suggested for well groomed lawns throughout the bluegrass zone, especially where the neat look of a closely-clipped turf is wanted. So reports Doyle Jacklin, Jacklin Seed Co., Dishman, Wash.

Fylking Kentucky bluegrass was discovered and bred in Sweden, "polished up" in this country by Jacklin as the 0217 brand and adapted to American conditions. Two outstanding attributes make Fylking one of the most heralded varieties of recent years, — low growth suited to inch-high mowing, and remarkable resistance to the usual lawn diseases.

In most areas Fylking provides a luxurious turf, with modest care. Fylking gets along with slightly less feeding than Merion bluegrass, and needs little else than regular mowing,—occasional thatch removal and sprucing up with a weed preventer, perhaps.

The 0217 Fylking seed is grown as an agricultural crop on nearly weed-free soils of eastern Washington and northern Idaho. It is cleaned to perfection, and the purchaser of Fylking seed or sod need have no fear that he will be introducing unwanted vegetation into his lawn, according to Jacklin. Fylking blends well with other fine-textured grasses, including fine fescues and even colonial bentgrasses. The company recommends that in most cases at least one-third of a seed mixture should be Fylking, in order to gain more quickly the velvety luxuriance this variety provides.

In warm weather a Fylking seeding should show green sprouts in as little as two weeks. As the grass grows taller and roots more deeply watering can taper off. The foundation is now laid for years of lawn satisfaction. Jacklin recommends that mowing begin when the grass is about 2 inches tall. It should then be clipped regularly thereafter so that no more than half of the green leaf is removed at any one mowing. If a few weeds show up from seed in the soil, there is no cause for alarm. Most will disappear as mowing continues. The remainder can be eliminated later with easy-to-use lawn herbicides, if, indeed, they are not squeezed out by the Fylking. Herbicides are best not applied until young grass is old enough to have had several mowings.



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New Bentgrass Announced By Northrup, King

A new variety of Colonial bentgrass reported to be as easily managed as bluegrasses is being introduced by Northrup, King & Co.

Called Holfior bentgrass, the new variety has been undergoing tests by Northrup King since 1956 and is said to produce a turf of uniform color, texture and leaf width.

Most importantly, Holfior does very well with only the moderate amounts of fertilization and irrigation required by bluegrass. Intensive disease control measures are needed infrequently; it is resistant to snow mold and only moderately susceptible to dollarspot.

According to Howard Kaerwer, chief turf agronomist at Northrup King, Holfior produces plants of leafy, dense and upright growth that do not segregate for color, texture, leaf width or growth characteristics.

Said to be the fastest-establishing bentgrass available, Holfior also mows clean without matting or tufting. It can be mowed at any height from ¼" to 1¾". The new bentgrass adapts well to varying conditions of soil and moisture, and is compatible with the new short-cut bluegrasses such as Prato, Fylking, Pennstar.

Baron Kentucky Bluegrass Now For Sale In Canada

Baron, a new variety of Kentucky bluegrass has been officially licensed for sale in Canada by the Canada Department of Agriculture.

Baron was developed in the Netherlands and has been extensively tested at the University of Guelph Turf Grass Trials, Canada Department of Agriculture Turf Research Trials, Agassiz, British Columbia as well as Michigan State University and the University of Rhode Island Turf Trials.

Baron is similar in many respects to merion. It is resistant to leaf spot as is merion but Baron in addition has more rapid germination, is low growing and has a darker green color than merion. It greens up early in the spring and forms a very dense low growing turf which crowds out weeds and other undesirable grasses. It is particularly suited to low clipping height.

The new variety is resistant to stripe smut, a serious turf disease which is ravaging merion and other varieties in some parts of North America.

Seed of Baron Kentucky bluegrass is being produced in Washington State. Fortunately, it is a relatively good seed producer and produces heavy seed of high quality. Limited seed supplies will be available from the 1971 crop in time for August-September 1971 plantings by sod growers, golf courses and other professional turf users.

Distribution in Canada will be by Ontario Seed Cleaners and Dealers Limited, Brampton, Ontario.

In the U.S. Baron is distributed exclusively by Lofts Pedigreed Seed, Inc., Bound Brook, N.J. Distributors for Lofts are: Lofts/New England, Arlington, Mass.; Chandler Seed Co., Bound Brook, N.J.; Great Western Seed Co., Albany, Oregon; and Stover Seed Co., Los Angeles, Calif.

Northern California GCSA Elects New 1971 Officers

The Golf Superintendents Association of Northern California elected their 1971 officer slate in a session April 14. Officers are as follows: C. W. Weatherston, Dublin, president; Roger A. Larson, Pebble Beach, vice-president; and Michael R. Clark, Santa Rosa, secretary-treasurer. Directors are: Howard E. Fisher, Jr., Calistoga; Jim Ross, Los Gatos; Ken Vorderbruggen, Incline Village, Nev.; Lawrence Feliciano, Lodi; and Y. Lee Huang, Walnut Creek. Honorary director is Clifford A. Wagoner, Modesto.

Sabre Saw Chain Expands Builds New Niagara Falls Plant

Sabre Saw Chain, Inc., has moved from their Lewiston location to Niagara Falls, N.Y. The move is to a new national headquarters. Warehouse space needed to keep pace after four years of rapidly increasing sales, is double that of the previous location. New mailing address is: P.O. Box 272, La Salle Station, Niagara Falls, N.Y. 14304.

Submatic Is Marketing New Concept In Irrigation

A new approach for new tree irrigation has been developed by Submatic Inc. of Lubbock, Texas, designed for both existing and new nurseries. This system consists of a one half inch diameter plastic pipeline placed near a row of new trees, with from one to three nylon in-

serts at each tree. The pipe is installed with a chisel or vibrating plow as illustrated. Since each insert orifice provides approximately three gallons of water per hour at 10 PSI — enough moisture is provided for several years' growth, or until the ornamental reaches market size. At this stage, the roots extend beyond the area irrigated by the system, and more lines can be added. In existing nurseries, pipe may be placed on top of the ground to serve as trickle irrigation. One of the many advantages of the Submatic system is that it can be fully automated. The cost of the subirrigation system installed ranges from \$100 to \$200 per acre. For more information on the new Submatic irrigation system, write Submatic Inc., P.O. Box 246 in Lubbock, or call (806) 747-0902.

Thompson-Hayward To Market New Chemical Weed Control

Bromo-Kil-D, a new weed control product is now being sold by Thompson-Hayward Chemical Company of Kansas City. According to the company, Bromo-Kil-D provides fast, broad spectrum control of weeds and grasses on non-cropland areas.

Bromo-Kil-D is a non-selective soluble bromacil formulation containing Dedrift, an anti-mist additive which provides concentrated coverage and eliminates drift.

The new product is in a uniform solution and requires no mixing or dilution prior to application. The recommended rate of application is 1 to 4 gallons per 1,000 square feet and it can be applied with standard spray equipment. One application is claimed to give season control.

Because the new agent is a non-selective herbicide it can control a variety of weeds and grasses on non-cropland areas including industrial plant sites, parking lots, around storage facilities, terminal and loading ramps, fence rows, and others.

Japanese Government Has Banned DDT

All sales of DDT have been banned in Japan. The action was effective May 1. The agriculture and forestry ministry of the Japanese government took the step after previously banning manufacture of DDT, in 1969. Retail sales of endrin, deldrin, aldrin, and BHC have also been banned to unauthorized persons.



Kessen pipe-puller laying pipe. Puller works from a starter slit trench and pulls pipe through soil without trenching. On some jobs, puller can cut pipe placement time in half when compared to trenching.

Landscape Industry Has Changed In Last Generation

Allen Kessen, grandson of Anthony Kessen who founded the A. Kessen & Sons landscaping firm at Denver, Colo., and now a principal in the firm, points up the great changes in the industry during the past generation.

When the Kessen business was started in the '30s, Kessen says, "there were no large developers in home building. There were no industrial parks, few golf courses, sprinkler systems were practically

unheard of, municipal work was done by government agencies. When the industry grew, we had to grow. Today, big builders require a landscape contractor who can provide the complete line of services; they require someone large enough and established enough to handle the whole job."

The Kessen firm, now doing \$2 million in business yearly, has just completed two athletic fields for the U.S. Air Force Academy. Work included cuts and fill, irrigation systems, top soil and 1.3 million square feet of sodding.

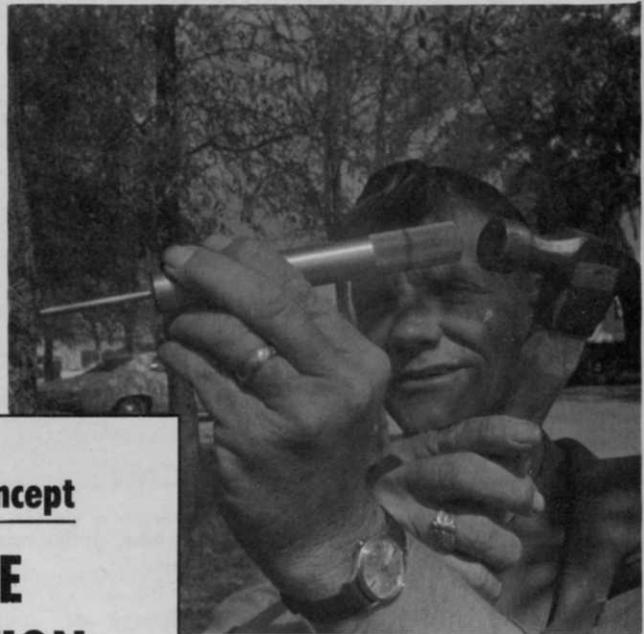


Nationwide alumni of the winter course in turfgrass management at Penn State University have presented a second annual turfgrass research grant of \$1,500 to the department of agronomy. Dr. James L. Starling, left, department head at Penn State, receives the check from Frank Dobie of Sharon Center, Ohio, alumni chairman.

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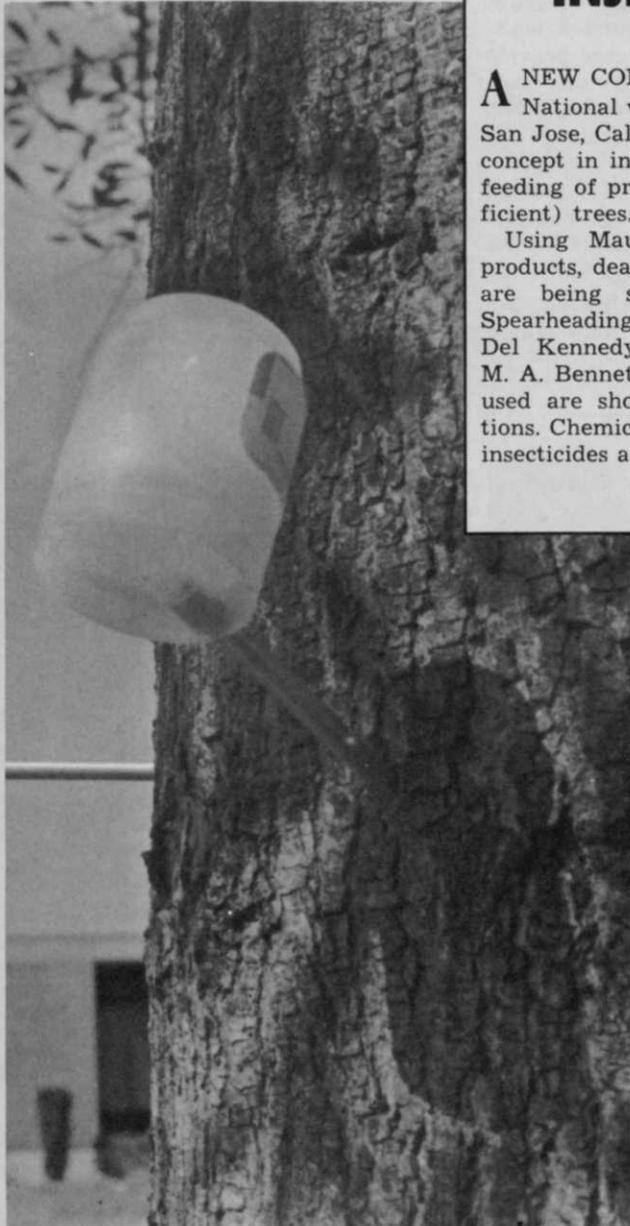
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New Concept **TREE INJECTION**

A NEW COMPANY called CLM National with headquarters at San Jose, Calif., is offering a new concept in insect control and the feeding of problem (nutrient deficient) trees.

Using Mauget Tree Injection products, dealers and distributors are being set up nationwide. Spearheading the new company is Del Kennedy, upper right, and M. A. Bennett, lower right. Tools used are shown in the illustrations. Chemical line includes both insecticides and nutrients.





More than 5600 cubic yards of Vita-Bark nursery mix is being used for building the first turfgrass race course in Northern California at Golden Gate Fields, Albany. Planting material being used is one-third Vita-Bark Nursery Mix, two-thirds washed sand, and commercial fertilizer. Grass will be seeded in February. The bark mix is made up of 90% pure bark from white fir, red fir, and pine. Material is passed through a quarter-inch screen and contains nitrogen, iron and a non-ionic biodegradable wetting agent. For more details, circle (717) on the reader service card.

National Annual Turfgrass Expenditure by Regions

Region (U.S. Census Bureau Division)	Expenditure	Percent of Total
New England (Maine, Vt., N.H., Mass., Conn.)	\$183,271,396	4.2
Mid-Atlantic (N.Y., N.J., Pa.)	496,657,562	11.5
East North-Central (Wis., Mich., Ill., Ind., Ohio)	772,188,186	17.9
West North-Central (N.D., S.D., Minn., Iowa, Nebr., Kan., Mo.)	378,750,526	8.8
South Atlantic (W.Va., Va., Del., D.C., N.C., S.C., Ga., Fla.,)	742,864,584	17.2
East South-Central (Ky., Tenn., Miss., Ala.)	374,687,236	8.7
West South-Central (Okla., Ark., La., Texas)	570,179,610	13.2
Mountain (Mont., Idaho, Wyo., Nev., Utah, Colo., Ariz., N.M.)	199,073,182	4.6
TOTAL	\$4,326,546,994	

The turfgrass industry is big and growing. The above table is from 1965 census data. Scope of the industry is no doubt considerably larger as of this date. New data are expected shortly. Included in the table are data which encompass production and maintenance of specialized grasses and other ground covers as needed in development and management of facilities for green areas.

Sex Attractant Tested For Gypsy Moth Control

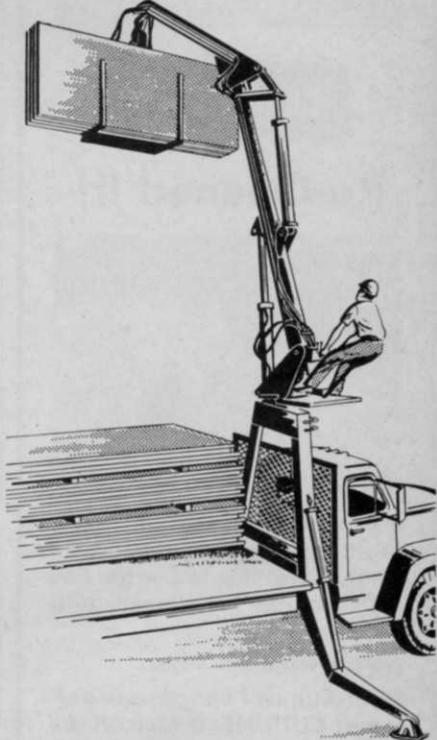
A sex attractant is being tested for control of gypsy moth by the United States Department of Agriculture. Officials report that the test is being run in Alabama. Basis for the field test is a sex attractant known as disparlure. The theory of control is to disperse the product by aircraft over an area to confuse males and prevent their finding the females. In the Alabama test, however, only male moths were used and the disparlure dispersed to keep the males from locating lure-baited traps. This was to prevent a new infestation in this previously moth-free area.

Tests indicate that the system may make it possible to keep male moths from finding females and so prevent the breeding of new generations.

However, scientists point out that the main weapon in use against gypsy moth now is nonpersistent carbaryl, sold under the trade name of Sevin and manufactured by Union Carbide. This insecticide is low in toxicity to birds, fish, wildlife, and humans. Even though they have high hopes for use of the sex attractant and are continuing tests, USDA officials point out that nonpersistent chemicals will continue to be one of the primary controls of the gypsy moth for the foreseeable future.

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Robert G. Cusack of Ionia, Mich. uses his pond to raise trout (note the lad who has just speared his dinner) and for family fun.

Here's what he says:

"Last August I bought one gallon of CUTRINE. It took all the algae out of my pond. Our pond is on M-66, a half mile south of Ionia. Many people have seen how bad the algae was and what CUTRINE did for us."

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Trees Are Excellent Environmental Purifiers

Besides providing man with fiber and fruit, trees have a predominant role in regulating the quality of our environment, says a Michigan State University forester.

"Few people realize that trees play an important role in controlling wind, dust and odors," says Dr. James W. Hanover, associate professor of forestry.

Hanover claims that trees do an effective job of filtering dust particles and unpleasant odors out of the air. For example, an 80- to 100-year-old beech tree has about 1,600 square yards of total leaf surface which catches dust particles during much of the year. Evergreen species have a year-round air filtering capability.

"All tree species have natural odors of their own due to the fact that they release chemical by-products of metabolism, which evaporate into the air" says Hanover. "This results in a 'reodorization' of polluted air."

Trees also stabilize soil and retain water over a wide range of climatic, topographic and soil conditions. In many parts of the country these purposes are, or will become, the prime function of forests, according to Hanover.

"We all enjoy the shade of a tree when the weather is hot," he says, "and this testifies to the fact that trees lower air temperatures and lessen light intensity."

"Moisture released from trees by the transpiration process — up to 100 gallons per day by a single tree — not only humidifies the air and cools it by evaporation, but also removes impurities by acting as an air washer."

During the last 30 years the American level of unwanted noise has increased steadily at the rate of one decibel a year. Appropriate tree and shrub barriers can reduce noise levels by 50% or more. Hanover predicts that in the future trees will play a significant role in the design of parks, playgrounds, schools, hospitals and parkways where noise is a problem.

Trees are useful in other ways, too. For example, research indicates that polluted air means poor health, as shown by significant increases in the incidence of respiratory diseases such as asthma, bronchitis, lung cancer and emphysema. Certain species of trees have great potential as sensitive

indicators of cumulative doses of air pollution that could have harmful effects on people.

In addition, trees take up and release enormous quantities of carbon dioxide and oxygen. This gas exchange complements the oxygen need of animals and provides the world atmosphere balance of 20% oxygen and 0.03% carbon dioxide, on which all life is geared to operate.

Hanover notes that U.S. foresters are vitally concerned with the fact that trees are being eliminated at the rate of about one million each year through paving, urban sprawl and other developmental efforts.

"Hopefully," he says, "public concern will reverse this trend and benefit both the trees and ourselves in the future."

Cost Figures Compiled By Landscape Contractors

Costs of doing business in the landscape contracting industry have been compiled by the Associated Landscape Contractors of America and are now available from the organization.

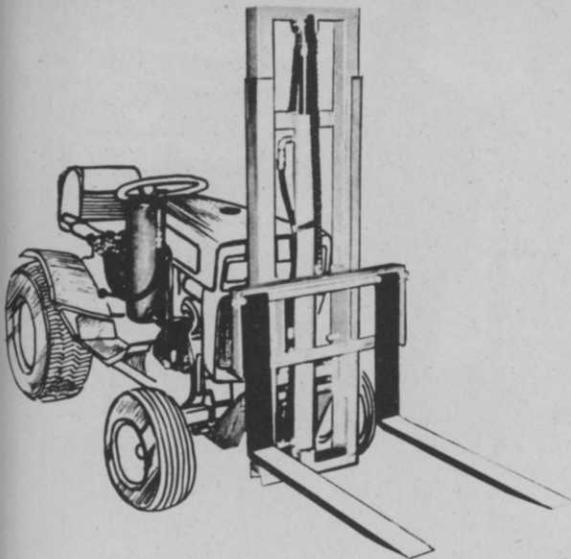
Based on 1969 data, the operating figures were prepared from unidentified figures submitted by ALCA members to the national accounting firm of Ernst & Ernst.

The 15-page cost study contains separate comparisons for corporations and for partnerships/proprietorships. Figures from 54 corporations and 24 partnerships and proprietorships with total reported sales in excess of \$30 million are included in the study.

Among the interesting percentages disclosed, operating profit before taxes for all reporting partnerships/proprietorships was 12.1% while for all corporations it was 5.6% of net sales. Total operating costs for all reporting corporations were 94.4% of net sales, while for the partnerships/proprietorships the figure was 87.9%.

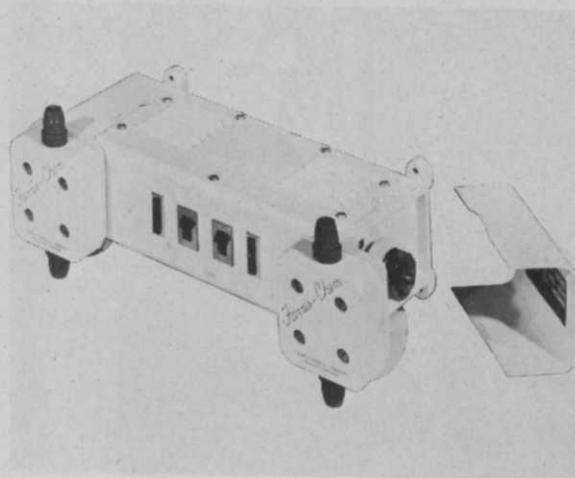
To assist landscape contractors in analyzing variations which may show up between their own operational ratios and national averages for their sales volume classification, space has been provided for insertion of individual operating figures and percentages on an item-by-item comparison.

Copies of the Operating Cost Survey are available at \$5 per copy for non-members, and \$3 for members, from ALCA Headquarters, Suite 100, 2011 Eye Street, N.W., Washington, D. C. 20006.



GARDEN TRACTOR FORK LIFT, Green Mfg., Inc., Bowling Green, Ohio

New low priced front or rear mounted fork lift designed to fit most garden tractors of 12 HP and up, either gasoline or electric powered. Unit is of rugged, all electric welded construction and mounts on tractor frame. Movable forks adjust to 23" wide and extend 30". Mast tilts forward and back. Unit lifts 750 pounds, 6 feet high. Hydraulic kit available for the conversion. Designed for businesses, stores, garages, nurseries, farms, schools, hospitals, others.



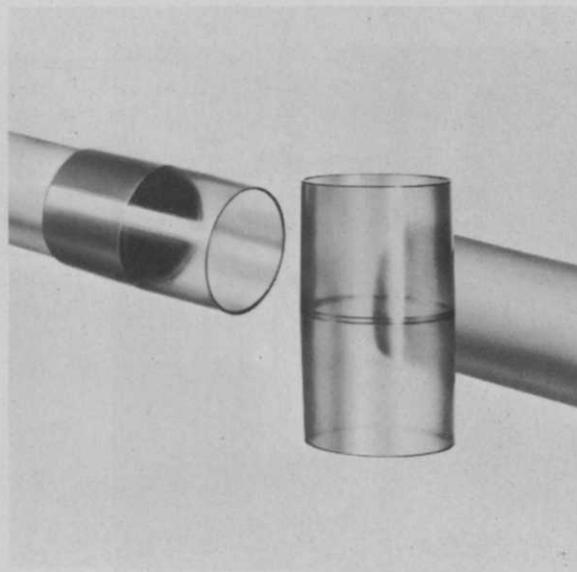
SOLUTION FEEDER, Farris Chemical Company, Inc., Knoxville, Tenn.

Series 125 diaphragm chemical feeder developed to meet requirements for variety of chemical solutions and applications. Designed to operate at pressures up to 150 psi. Mechanically linked teflon diaphragm, white PVC solution head, air-cooled gear motor equipped with long-life bearings requiring no lubrication. Available in 2 feed rate models either as simplex or as duplex. Shipped complete with strainer, injection point fitting, 15 feet of suction and discharge tubing, complete with instruction and parts manual.



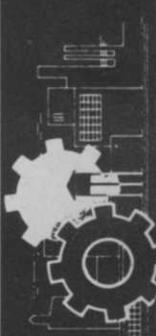
KEES-KASTER FERTILIZER SPREADER, F. D. Kees Mfg. Co., Beatrice, Nebr.

New Model-25 Kees-Kaster Spreader has same spread pattern as larger Model B-53 but hopper capacity has been reduced to handy 25 pound size. Model-25 has 8-inch rubber tired wheels and a tubular steel frame. Cylolac hopper is corrosion proof and integrating parts, including distribution spinner, are of Cylolac or Nylon so spreader can be used for fertilizers, ice melting materials or herbicides with no rust-out problems. Provides a uniform spread pattern of 5 feet, feathering out to 8 to 10 feet. Unique feature is a stainless steel cut-off which enables the user to spread herbicides to one side only, thus protecting flower beds, etc.



GSR COLOR GUARD SYSTEM, R & G Sloane Mfg. Co., Sun Valley, Calif.

New method of joining plastic pipe and fittings in water distribution systems. Eliminates the chief cause of leaks in PVC pipelines. Potential leaks spotted instantly. Improperly cemented joints — the cause of practically all leaks — are visible with Color Guard. Using this system, installers can tell at a glance if joints are properly assembled and free from leaks without immediate pressure testing. Pipeline can be buried much sooner with complete confidence. Employs new line of deep socket fittings made of clear PVC, new Color Guard primers and cements, and new primer applicators to speed joining.





ROTO-LADDER, Dewild Keiser Company, Rock Rapids, Iowa

Roto-Ladder will lift men and materials to 23' working height. Provides accessibility to overhead electrical construction, painting, sign and display maintenance and installation, service entrance installation, building maintenance and cleaning, aircraft maintenance and others. Installs on the bed of half ton or larger capacity vehicle. Operates independent of carrying vehicle power supply. Features continuous 360 degree rotation. Other features include outrigger assembly built within frame of the Roto-Ladder for maximum stability, capability of positioning Roto-Ladder behind the cab of the vehicle or over the rear wheels of the vehicle. One lever conveniently located at the operator platform controls 360 degree movement and vertical lift.



MACHINE LAYS UNDERGROUND LINES, Ryan Equipment Co., St. Paul, Minn.

Machine for installing underground lines without trenching is called the Ryan Line Layer. Buries telephone wire, flexible gas line tubing and flexible irrigation pipe. Self-propelled. Requires one man to operate. For telephone line work, it is designed to handle two-pair or four-pair service wires. Also handles up to 1" diameter flexible tubing or pipe. Buries and pulls service lines 7" underground, leaving nearly invisible slit in the lawn. The slits disappear as sod knits itself. Powered by a 7 HP engine. Entire unit only 18 inches wide, for easy use in small, congested areas.



VACUUM STREET & GROUNDS CLEANER, Papec Machine Co., Shortsville, N. Y.

Collects, condenses and loads. Powered by 40 h.p. Volkswagen industrial air cooled engine that uses regular grade gasoline. Equipped with 12 volt electrical system and electric starter. Power transmitted to the 23" dia. blower impeller by a five V-belt drive. Blower impeller and housing made of abrasion resisting steel. Suction hose 10" diameter, 15' long and reinforced with spring steel. Discharge pipe 12" diameter and aimed to direct load through matching opening in special truck box.



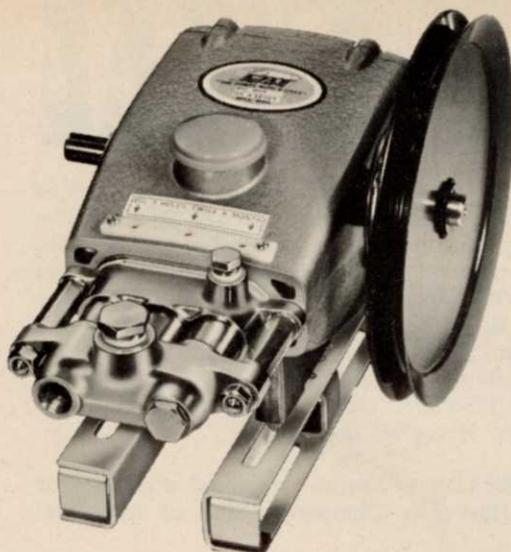
MOZ-ALL POWER MOWERS AND WEED CUTTER, Hull Industries, Inc., Hull, Iowa

Mows close to obstructions. Remove front blade shield and convert into weed and brush cutter. Handle folds over for compact storage, less space. Ready to transport in auto trunk. Features 4 models: Super Heavy Duty, Extra Heavy Duty, (both self-propelled) two hand propelled models — Direct Drive Town & Country and Belt Driven Town & Country. Accessory items include: shock-absorber sulky to convert to rider, front discharge shield assembly, leaf mulcher attachment and grass catcher.



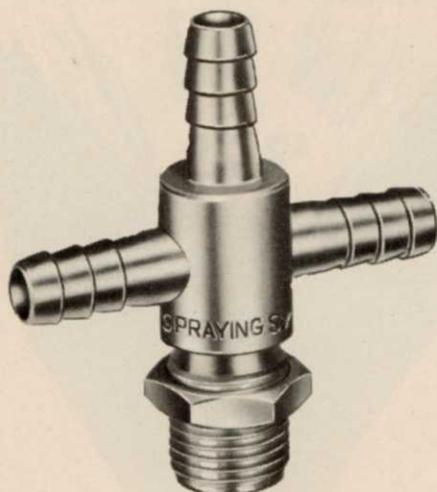
AIR-FLO HIGH WHEEL 20, Pro, Inc., Shreveport, La.

A completely new power mower for the 1971 season. Offered as a low-priced high wheeler, the unit combines the advantages of big rear wheel flotation and maneuverability with "swirl-deck" grass control. Features include: 4 H.P. Briggs and Stratton engine, all steel construction, integrated frame-housing engine base, steel cutter shaft housing with sealed ball bearings, high-flotation 14" rear wheels, steel front wheels, "V"-Belt drive completely enclosed, exhaust extension and toe guard.



CAT PUMP, Cat Pumps Corporation, Minneapolis, Minn.

New Model A Series Cat Pump. Features smaller size, lower RPM and die-cast crankcase. Rated as 4 GPM, 700 PSI at 850 RPM rather than 1050 RPM as the standard Model A. Slower RPM assures longer life. Model is 12" long, slightly less than 9" wide including the extension of the shaft on both sides and 7" high including mounting rails which are 1 1/2" high. Mounting rails and pulley included as standard equipment. New unit available only in stainless steel and brass. Features uni-flow wet-cup design, positive displacement inlet valves, heavy-duty crankshaft, hardened and ground poppet-type valve seats and five minute replacement of cups for less than eight dollars.



NEW TRIPLE HOSE SHANK TEEJET CONNECTOR, Spraying Systems Co., Bellwood, Ill.

Functions as inlet connection for the boom as well as being one of the nozzles in the spray boom set-up. Threaded outlet of the connector fits the standard TeeJet cap, tip and strainers. Eliminates need of intermediate inlet connector in hose line. Used with standard single and double hose connection. Unit is made of brass with hose barb connections for 3/8" ID hose. Designed free of internal restrictions to provide minimum pressure loss.



WIND-AGITATOR, Manufactured by Farmco, Springfield, Mo.

A mechanical agitator, for installation in sprayer tanks and nurse tanks. This device is powered by the wind, driving two impellers located inside the tank, to keep wettable powders and fertilizer solutions in suspension. For liquid feeder tanks, liquid fertilizer tanks, and sprayer tanks. Installs in any tank from 100 gallon to 1500 gallon. Eliminates the need for liquid agitation or engine drive mechanical agitation. Provides slow moving vehicle identification, during transport.



New Products

industry people
on the move



SIX WEED SCIENTISTS have been given awards of merit by the Northeastern Weed Science Society. The program recognizes retired members who had contributed to the organization during the years. They and their former affiliations are: Dr. Steve M. Raleigh, Penn State; Claude E. Phillips, University of Delaware; Gilbert H. Ahlgren, Rutgers; Homer B. Neville, State University of Agricultural and Technical Institute; Dr. Alfred M. S. Pridham, Cornell University; and Dr. Arthur D. Lohr, Hercules, Inc.

JAMES P. BRADY is the new regional manager for International Harvester Company's line of industrial equipment.

ELMO M. ANDERSEN, formerly sales manager of Febco, Inc., has been named general sales manager of Moody Sprinkler Co., Inc., Arcadia, Calif.

F. BRUCE EBERWINE, JR., has joined United States Borax & Chemical Corporation as marketing manager of selective herbicides.

F. G. KENNEDY has been appointed manager of agricultural products and services for Union Carbide Corporation's agricultural chemical operations at Salinas, California.

JOE FOWLER heads up a newly formed Turf and Grounds Products Division for Southern Mill Creek Products Co.

ROBERT G. McMASTER has been selected to the newly-created post of manager, distribution-construction equipment division, J I Case Co.

SWINGLE TREE SURGEONS, INC., has promoted three men. Charles P. Morgan becomes vice-president of the tree service division; David Dickson is secretary and supervisor of the spray service division; and Arthur J. Mack advanced to sales representative from crew foreman.

PHYTOPATHOLOGY NEWS has a new editor-in-chief. He is Dr. Richard J. Campana of the University of Maine. Dr. Campana, who specializes in research on diseases of woody plants, is professor of botany at the University's Orono campus.

ROBERT P. RICH is the new sales promotion manager for the Chipman Division of Rhodia, Inc.

DAVID E. NEWTON is the new technical representative in Connecticut and Rhode Island for Allied Biological Control Corporation, Wellesley Hills, Mass.

MIDWEST TURFGRASS GROWERS ASSOCIATION has elected new officers. They are: President—William Latta; vice-president—Don White; secretary-treasurer—Claude Wiewel; and directors—Bill Copple, Ed Keeven, Melvin Briggs and Joe McDermott.

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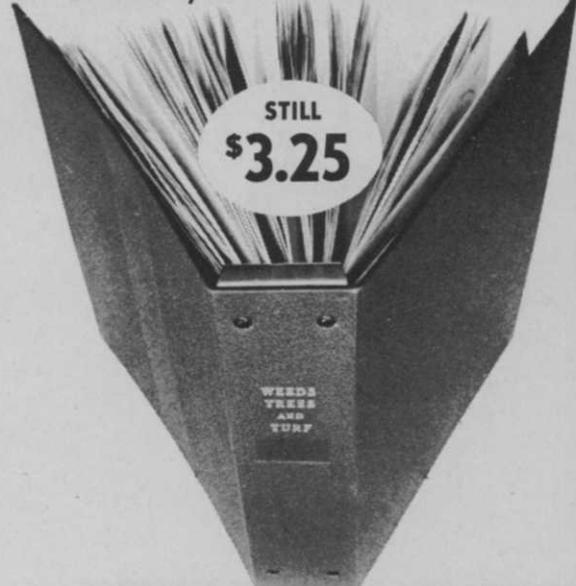
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The Southern Turfgrass Association, headquartered at Memphis, Tenn., continues to expand. Their spring show, above, held this spring at Memphis drew 336. Big record, however, was addition of 61 new members. New officers elected were: Jerry Hilycord, Memphis CC, president; J. D. Curtis, Decatur CC, Ala., vice-president; and Reg Perry, Turfair, Inc., secretary-treasurer. A one-day turf clinic is scheduled for Aug. 23 at Rivermont Inn, Memphis.

Soil Often Holds Secret Of Pesticide Behavior

Some new insights into the behavior of pesticides have been revealed by Dr. Jerome B. Weber, an associate professor of crop and soil science at North Carolina State University.

Dr. Weber said the makers and users of pesticides are often puzzled by some of the results they get.

The action of pesticides becomes less puzzling, he explained, when a person considers the physical and chemical properties of the soil as well as the physical and chemical properties of the pesticide.

Pesticides, for example, can be acid or alkaline, volatile or non-volatile, soluble or insoluble, positively charged or negatively charged, or not charged at all. Clay colloids and organic colloids in the soil are negatively charged. Metallic oxides are positive. Soils, of course, can be acid or alkaline and contain varying amounts of moisture.

Dr. Weber offered several examples of how these factors can affect pesticide behavior.

Paraquat is 100% water soluble and is positively charged. Clay colloids, which are negatively charged, attract it readily and bind it very tightly.

DDT has no charge, is non-vola-



M. Joseph Yoder, center, receives the outstanding student award from James Smith, right, director of the Michigan Turfgrass Foundation, and Norman Kramer, superintendent at Point-O-Woods CC, Benton Harbor, Mich.

tile, is extremely persistent, and is usually found attached to the fatty portions of organic soil colloids.

The herbicide 2,4,5-T is moderately soluble and negatively charged. It is easily washed off or leached through soils unless they are very acid. Ester formulations of 2,4,5-T are uncharged and have high vapor pressures. They readily volatilize into the atmosphere.

Other herbicides, such as Trifluralin and EPTC, also vaporize easily, especially under warm, humid conditions. These compounds must be incorporated in the soil to be effective. If applied without incorporation or to hot, wet soils, poor weed control can result.

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Flail Mowers

(From page 19)

rotate so as to cut down on the front and back along the bottom of the cut. Height is usually controlled by a full span roller, riding on the ground close behind the cutter. Any object that does happen to be moved by impact of the flail knife would normally be stopped immediately by the roller. The curved cutter housing and rear shields effectively deflect anything discharged rearward high enough to clear the roller, directing it downward towards the ground. The flail mower cutter housings are also designed so that anything that might possibly be picked up and carried over the cutter to be discharged forward is deflected at an

angle of approximately 45 degrees downward and returned almost immediately to the ground.

Thus the low impact force action of the light weight free swinging flails, their vertical mode of operation, the guard action of the roller, and the deflecting features of the cutter housing all combine to make the flail mower by far the safest of all impact action mowers.

The basic design conformation of the flail mower, as outlined above contains features that provide for natural cutting superiority. Thin sharp knives cut cleaner and use less power. The vertical flail knife is highly adaptable to cutting either

fine lawn grass or tough field grass as well as weeds and light brush. The cylindrical shape of the flail cutter with knives extended results in cutting occurring on a line rather than over a large area as with a rotary. With the roller set in close behind this line of cut, control of the height of cut is very accurate. The cutter can follow the ground contour closely with very little problem of scalping. Performance is therefore very good even on rough or uneven ground. Height of cut is controlled by adjusting the roller. There is no adjustment needed or possible on the knives. Their position on the shaft is fixed.

Because there is no need to completely encase the cutter to provide operational safety, the flail cutter housing is open on both the front and the rear. Grass enters over the full width of the cutter without being flattened. The knives cut the grass in an upright position.

The capacity of a mower depends upon the volume of vegetation it can process through its cutter mechanism in a given time. The flail mower, with its open full span intake and discharge areas can handle higher volumes of cuttings than other type mowers.

This same "open" feature of the flail mower also provides top performance in wet—even "liquid wet"—conditions.

One of the basic claims upon which the Mott flail mower patents were based was the discovery of its self cleaning capabilities. The self cleaning aspects, coupled with the open "pass through" features of the flail mower cutter housing allow wet grass to be cut, shredded and discharged without problem. This wet cutting ability is very important. Often after rain or heavy dew the grass remains wet for long periods and there just isn't time to wait for everything to dry up.

Mowing speed also is important. Again, because of the high volume capabilities of the flail mower, mowing speeds of 10 mph over smooth terrain are not uncommon. One Mott model, is equipped with torsion bar spring suspension, shock absorbers and forward rotation of the cutter shaft. This unit was designed specifically to be pulled in gangs for wide swath high speed mowing of wide open field areas.

While each of the various specific types of mowers are indeed best suited for certain mowing jobs, the flail mower is without a doubt the most versatile, capable all around mower than can be had for many mowing jobs.



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The patented side hopper of the Cut 'N Shred Shredder provides the fast and exclusive method of first cutting and then shredding the most fibrous materials, such as tree prunings, stalks, vines, etc. into desirable mulches or fertilizers. Any garden wastes fed into either hopper, comes out shredded into useable mulch or compost that is ideal for fertilizing, weed smothering, moisture retention, or winter protection. The 3½ h.p. Cut 'N Shred Shredder for only \$149 will make up to 80 gallons of wood mulch per hour from tree prunings.

The Cut 'N Shred unit is constructed of heavy gauge steel, Timken bearing equipped rotor, sharpened carbon heat treated tines and heat treated grate. The unit is balanced on dual wheels for easier handling. There is nothing cheap but the price. (Hurry, prices go up September 1).

Interchangeable with Tiller and other gardening tools. Any attachment on or off in a jiffy.

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THE ROTO-HOE CO.
Newbury 10, Ohio 44065

insect report



TURF INSECTS

WHITE GRUBS (*Phyllophaga* spp.)

ALABAMA: Larval damage heavy to lawns throughout Tallassee in Elmore County. Treatments not satisfactory.

AN ARMORED SCALE (*Exuviaspis enceliae*)

CALIFORNIA: Counts of 2 per linear foot of stem of *Encelia* sp. in White Water Canyon, Riverside County. Collected on March 25, 1971. This is first record for the United States. This scale known only from type location, Todos Santos, Baja California, Mexico.

(*Ruggaspidiotus nebulosus*)

CALIFORNIA: Counts of 2 per linear foot of stem of *Eriogonum* sp. in White Water Canyon, Riverside County. Collected on March 25, 1971. This is a new county record and second known collection in State. First collect in Azusa, Los Angeles County.

INSECTS OF ORNAMENTALS

A CONIFER APHID (*Cinara tujafilina*)

OKLAHOMA: Heavy on arborviate in Muskogee area, Muskogee County. Honeydew heavy.

APPLE GRAIN APHID (*Rhopalosiphum fitchii*)

WISCONSIN: Eggs hatched as of April 14 on flowering crab apple.

EUROPEAN PINE SHOOT MOTH (*Ruggaspidiotus nebulosus*)

WISCONSIN: Survival 85 percent in southeastern area on mugho pine and red pine grown under sheltered conditions. Heavy mortality in more exposed sites in Racine County nursery.

TREE INSECTS

BALSAM TWIG APHID (*Mindarus abietinus*)

WISCONSIN: Hatched April 18 and causing needle distortion. No new growth at that time.

COOLEY SPRUCE GALL APHID (*Adelges cooleyi*)

PENNSYLVANIA: About 5 percent of females laying eggs on fir in Centre County.

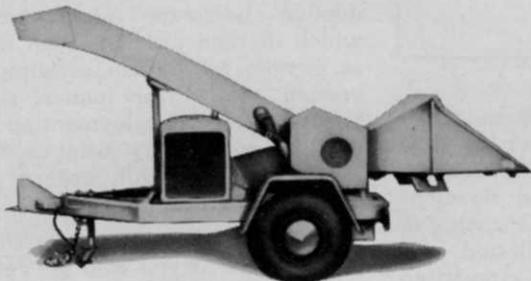
PINE BARK APHID (*Pineus strobi*)

WEST VIRGINIA: Moderate on about 400 white pine in Kanawha County April 22.

SPRUCE MITE (*Oligonychus ununguis*)

PENNSYLVANIA: Hatched on Norway spruce in Centre County.

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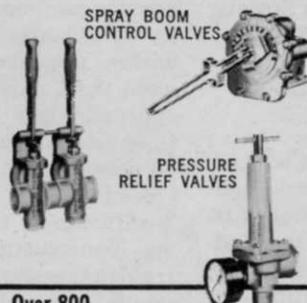
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Re: Society Code of Ethics Opinions

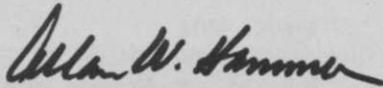
April 22, 1971

"Weeds, Trees and Turf"
The Harvest Publishing Company
9800 Detroit Avenue
Cleveland, Ohio 44102

OPEN LETTER - CODE OF ETHICS

Attached is a copy of a letter sent to Mr. Henry T. Swan, President, American Park and Recreation Society, regarding the Code of Ethics of park and recreation personnel which a group of Bay Area directors take strong exception to.

We would appreciate your cooperation in publishing same in your magazine for other park and horticulturally-oriented people to review.



ALLAN W. HAMMER
SUPERINTENDENT OF PARKS
City of San Mateo
330 West Twentieth Avenue
San Mateo, California 94402

AWH:MC:hh

Enclosure

Mr. Henry T. Swan, President
American Park & Recreation Society
1700 Pennsylvania Avenue, N. W.
Washington, D. C. 20006
American Park and Recreation
Society Code of Ethics

We have just read the Code of Ethics of our American Park and Recreation Society and although it is obvious that a great deal of time and effort was spent in the creation of this document, the Definition of Parks & Recreation has neglected to realize that although in many instances and at many levels, the definition is adequate, in Central California municipalities, this definition is inadequate and amounts to at best, a half-valid statement since it completely ignores the prime function of a municipal park man.

Let us be more specific. Within each municipality exists a variety of departments which perform a vari-

ety of tasks as related to man's environment and therefore his ability to survive — to cite examples: within the average land development there exists space consisting of approximately 30% allotted for right of way and other circulation or which an Engineering/or Public Works Dept. reviews plans and specifications and further inspects the construction of the paving, drainage, sewerage, lighting, etc., to assure the public safe and functional facilities; roughly 30% consists of building space for which a building department (or division) reviews plans and specifications and further inspects to make sure the structures are safe for human occupancy — the rest of that project is the landscape for which a park department must review plans and specifications for and inspect the construction of erosion control, drainage, irrigation, planting, etc., in

order to insure safety and "lungs for the city" with lifegiving oxygen for its public — leisure living is but one facet of this — survival is the key issue here.

Trees within each city are an absolute necessity in order to not only provide oxygen but also provide controls for wind, noise, erosion, and further have an effect on our very weather — leisure living and beauty are again byproducts but certainly not the key factor.

Large bodies of water within a community provide reservoirs for storm water, irrigation for landscapes, reserves for plants and animals and, in general, a vital branch of nature's cycle — leisure living is but one of many results. We could cite many more examples but feel we have made our point.

The Code of Ethics states that the Definition of Parks and Recreation is "Parks and Recreation provide the opportunities for leisure living which satisfy" etc., etc., — opportunities for leisure living are but one of many facets to numerous park men.

We as park men feel that if we were to define "Parks" it would have to be something like this: "Parks provide the means to acquire, preserve, plan, develop, review and maintain open space and further provide a beautiful, safe and productive landscape environment which in time provides such things as oxygen for human consumption, erosion control for human safety, beauty for visual enjoyment and opportunities to satisfy social needs for leisure living within orderly ecological guidelines.

We therefore respectfully submit that if those of you who are recreation oriented wish, adopt your definition of Recreation as stated in the Code do so but, please do not purport to represent those Park men who do not completely subscribe to your definition and philosophy.

Signed:

Allan W. Hammer, Director of Parks
City of San Mateo, California
Ted Harpenter, Park Supt.
City of Fremont, California
Pasco Balzarini, Supt. of Parks
City of Redwood City, California
Grayson Mosher, Parks Supt.
City of Berkeley, California
Jules L. Francard, Supt. of Parks
City of Burlingame, California

classifieds



When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum \$3.00. All other classifications 20¢ per word, minimum \$4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Bold-face rule box: \$25.00 per column inch.

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SPRAYERS, chippers, log splitters and other equipment at large savings. Let us know your needs. Equipment Sales Company, 5620 Old Sunrise Highway, Massapequa, New York 11758.

WANTED—USED BUCKET TRUCK. At least 45 ft. high. 1965 model up. Will consider bucket rig without truck. Bordelon's Tree Surgery, P.O. Box 770, Pineville, La. 71360. Phone 318 442-3583 or 448-8482.

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WANTED: Top-Notch Tree-Service Salesman. The man we want has a degree in forestry or equivalent, five years' experience in selling tree work, hiring and managing tree and landscape crews, and is ready to accept responsibility and progress with a dynamic company. If you are the man, you will be well-compensated, with top salary, company car, with bonus and commission geared to performance. And a liberal pension plan. You will be proud to sell our services to homeowners, utilities, municipalities, and industries. We

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Tree Care Business

(from page 9)

trade! What I'm saying is that it is a rare case that anyone will go without food, comfort, or shelter because you didn't give them a break. What I'm going to say now may seem unbelievable to many readers but the old timers know it is true. That is, that even when you give your friend, neighbors, or brother-in-law a rock bottom, no profit price, they usually still think you're getting rich on the job and robbing them blind. The point is, if you can't afford to do the job totally gratis, for absolutely free, then make a profit on it. Your friends or relatives think you're making money on them anyway, they don't know how much tree work costs, so they can't realize the fact that you are doing them a favor. So, unless you can say "I'll do it for nothing," cheerfully, don't do it for nothing and don't do it at cost or for a loss. Remember, if they pay you anything, no matter how little,

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they will think you have made money and will not consider your work as a favor to them. So it's either a free job or a profit job.

These criteria are not the *only* good rules to be considered by people already in the tree business or new people going into the business. Nor are they necessarily the *best* ones for any one person. However, for the most part, they are generally relevant to anyone in the trade.

In brief:

1. Be a good businessman first.
2. Build slow and build solid.
3. Don't cut prices to meet competition.
4. Keep your prices consistent.
5. Beware of those "Favor Jobs".





EPA ADMINISTRATOR WILLIAM RUCKELSHAUS apparently is getting his new agency underway in a commendable manner. However, he did make two slight mistakes recently. First, he agreed to appear on television with two entertainers who proceeded to distinguish themselves with their less than intelligent appraisals of the pesticide-environment fiasco we live with today. Secondly, in his session with Henry Gibson of Laugh-In notariety and Eddie Albert, he tried to tell Gibson that malathion was pronounced as me-lath-ion, with the emphasis on the me. Albert was quite emotional in his appeal to the EPA administrator to do more to restrict DDT (and other chemicals). Gibson's discussion (and poetry) closely approached the intelligence level of his normal performance on Laugh-In.

* * *

ORGANIC GARDENING received a mention in a recent New York Extension Service newsletter. A. Sherf in stating that the old practice of organic gardening is at the forefront of the new ecology movement said that use of "night soil", wood ashes for insects, marigolds for nematodes, etc., leave much to be desired. He then quoted the oft-quoted Earl Butz of Purdue University who once said that "organic farming was practiced successfully 100 years ago in America and might work again if someone could figure out how to feed those millions of Americans who depend on foods made possible by use of pesticides."

* * *

A CANADIAN IS RECOMMENDING SUCTION CUP SHOES for football players when they play on artificial turf. Seems that in a study of 228 high school games in the Seattle, Wash., area that there were far more injuries on artificial turf than on natural grass (ain't that revoltin'). Dr. Tome Fried, co-chairman of the Canadian Association of Sport Sciences, said players would do well to ditch cleats and wear suction cup shoes. In the study, wet surfaces of artificial turf produced injuries at a rate of 1.27 for every 1000 minutes of football. Normal grass produced only .78. On dry surfaces, the rate was 1.76 to .97.

* * *

LOSS JUST REPORTED is death of the Whittier elm, the 300-year-old tree often described by John

Greenleaf Whitter in his poetry. City officials at Haverhill, Mass., home of the elm, said the tree had suffered from Dutch elm disease for the past 15 years and had become increasingly fragile in recent months.

* * *

CONSERVATION 70, INC., a Florida civic group reports they will ask that state's legislature for a package to set a deadline of mid-'73 for phasing out pesticide use in Florida waters. At the same time, they will sponsor legislation to eliminate noxious aquatic vegetation from all Florida waterways. They plan to seek 2.6 million dollars via gasoline taxes to do the man-sized aquatic weeding job. (Tsk, tsk—and without pesticides).

Lawn Weed Herbicide Bulletin Is Revised

A bulletin on herbicides used in lawn weed control has been revised by the United States Department of Agriculture. The 24-pager is now available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

In ordering, ask for Home and Garden Bulletin No. 123, "Lawn Weed Control With Herbicides." Cost is 15 cents.

Generally, the publication includes information on herbicides, how to treat weed infestations, preplanting lawn treatments, and precautions in herbicide use.

What's a Pesticide?

What are pesticides? This term is misused more often than it is used correctly. Speaking before many types of groups very few people can define the word "pesticide" and explain its meaning.

As used today the terms pesticide or pesticide chemicals are the same as an "economic poison" as defined under the

USDA Federal Insecticide Fungicide and Rodenticide Act (FIFRA).

Pesticides, therefore, are defined as any substance or mixture of substances intended to prevent, destroy, repel or mitigate any insects, rodents, nematodes, fungi, weeds, or other pests. It also includes substances intended for use as a plant regulator, defoliant or desiccant.

CHEMICAL

1. Insecticides
2. Invertebrate animal poisons and repellents (animals without backbones)
3. Rodenticides
4. Fungicides
5. Nematocides
6. Growth regulators
7. Herbicides
8. Defoliants
9. Desiccants
10. Fumigants

For the Control of:

insects (beetles, caterpillars, bees, flies, cockroaches, spiders, mites, ticks, etc., etc.). Broadly used insecticides also include: miticides, insect repellents, insect attractants, activators and mothproofers.

1. substances used for jellyfish control
2. shipworms attacking docks
3. barnacles and mollusks on piers and ship bottoms
4. snail and slug control
5. etc.

rats, mice, moles, skunks, fish, bird and snake poisons and/or repellents. Fish poisons are commonly used in management operations, skunk poisons or repellents and controlling sea lamprey.

mildews, molds, slime, etc.

eelworms, etc.

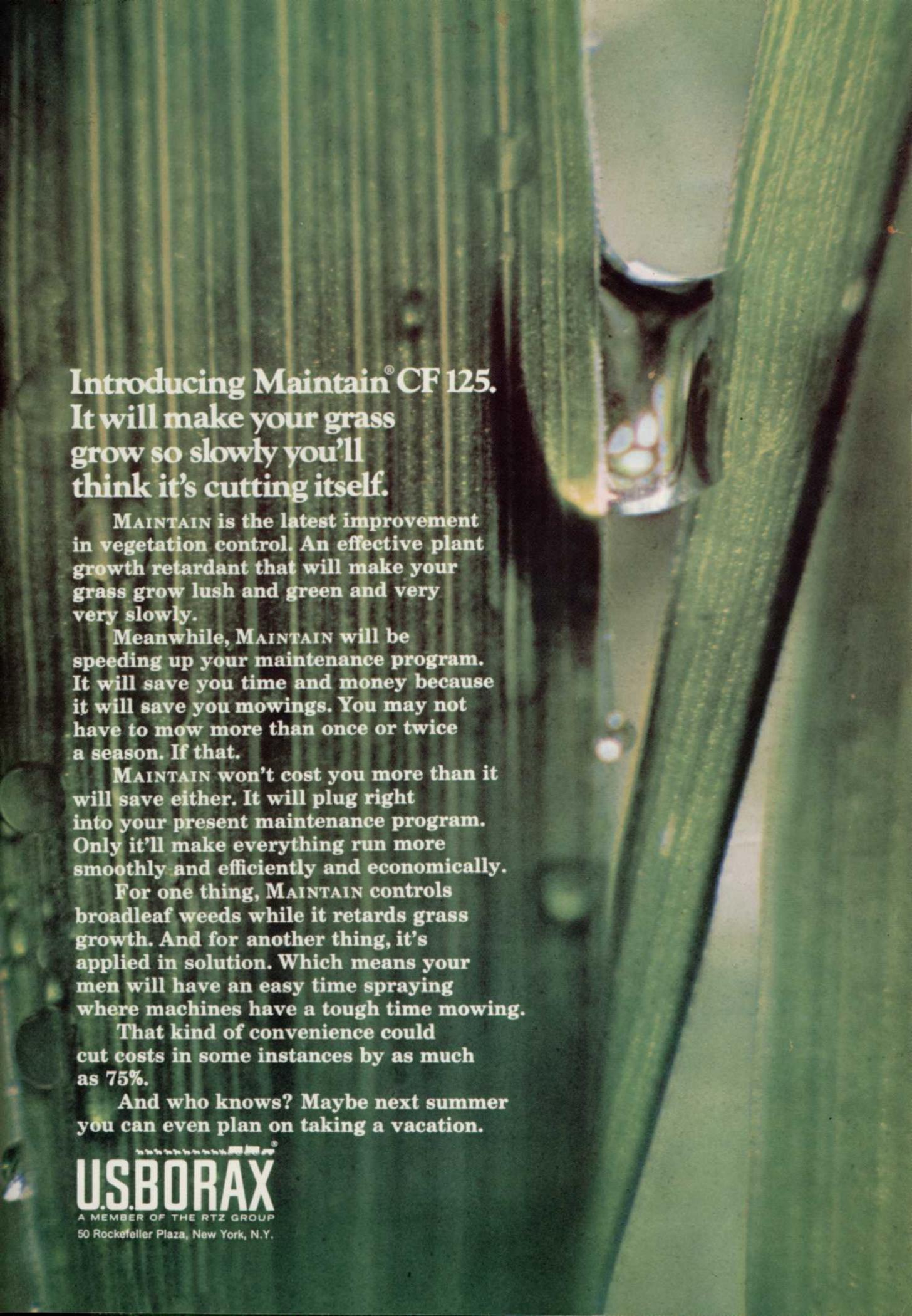
fruit set, speed up or reducing plant growth (not to include fertilizers).

weed killers

leaf drop materials

artificial drying agents

vapor producing (mothballs, etc.)



Introducing Maintain[®] CF 125.
It will make your grass
grow so slowly you'll
think it's cutting itself.

MAINTAIN is the latest improvement in vegetation control. An effective plant growth retardant that will make your grass grow lush and green and very very slowly.

Meanwhile, MAINTAIN will be speeding up your maintenance program. It will save you time and money because it will save you mowings. You may not have to mow more than once or twice a season. If that.

MAINTAIN won't cost you more than it will save either. It will plug right into your present maintenance program. Only it'll make everything run more smoothly and efficiently and economically.

For one thing, MAINTAIN controls broadleaf weeds while it retards grass growth. And for another thing, it's applied in solution. Which means your men will have an easy time spraying where machines have a tough time mowing.

That kind of convenience could cut costs in some instances by as much as 75%.

And who knows? Maybe next summer you can even plan on taking a vacation.

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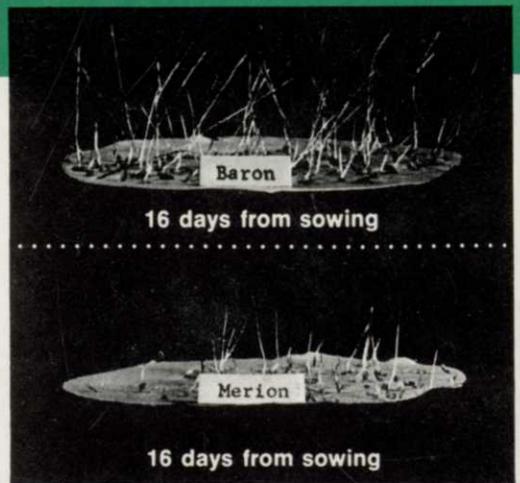
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Available August, 1971

baron

Kentucky Bluegrass

**Germinates faster,
grows slower
and denser—
resists leaf spot.**



The Baron is here! After its discovery in Holland and extensive rave reviews from Agronomists throughout Europe, Baron Bluegrass has come to America . . . another exclusive from Lofts Oregon and Washington growers.

Baron is a Kentucky Bluegrass unlike any other discovered thus far. It germinates faster than most varieties—yet once germinated, it reaches a deep green density that makes it ideal for sod, sports locations and prestigious lawns. Baron grows



Abundant roots and rhizomes show in BARON sod washed free of soil.



Husky BARON cluster left, common bluegrasses right, mowed about one inch.

slowly, so it requires mowing less often; and it takes low mowing beautifully, even as low as $\frac{3}{4}$ inch. The sturdy, broad blades interlock to make a "crisp" surface that holds a golf ball well on the fairway. The dense turf is winter hardy with a fine

Check these remarkable figures!		
	Per 100 seeds after 14 days.	
	Germination	Green leaf*
Merion†	19%	9 inches
Baron‡	85%	77 inches

† Average, two lots. ‡ Average, six lots.
* Calculated by laying all germinated seedlings from 100 seeds end-to-end.

winter color. Its leaves stay relatively unblemished by leafspot, rust or stripe smut.

In fact, in every way that matters, Baron Bluegrass from Lofts is the most remarkable grass seed you can buy.



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