

Get rid of unwanted green growth before it cuts into your profits.

The weed onslaught is just about universal.

An expensive headache.

For utilities, railroads, highway departments, the petroleum industry and industry in general.

But there is a way to con-

trol that costly green tide—with Tandex® herbicide.

It's a urea-carbamate compound that gives outstanding extended control over a range of weeds and grasses.

But it's more than weed control.

It's brush control, too. If you've got to get rid of really tough brush and woody vines, Tandex gets the job done.

You can spray Tandex or apply it in dry granular form.

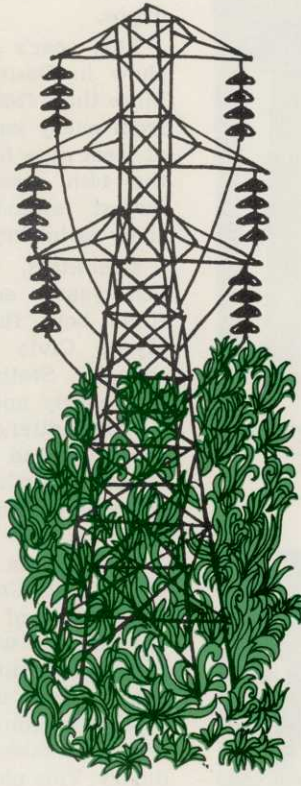
Either way you use it, you'll control that costly green tide.



FOR INDUSTRY



FOR RAILROADS



FOR UTILITIES



FOR ROADS

TANDEX

HERBICIDE



INDUSTRIAL CHEMICALS DEPT.
NIAGARA CHEMICAL DIVISION
MIDDLEPORT, NEW YORK

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Greatest Spectacle In Commercial Turfgrass

GCSAA International Turfgrass Conference And Show



Roger J. Thomas, marketing manager, turf equipment, Jacobsen Mfg. Co., discusses noise levels and golf maintenance.

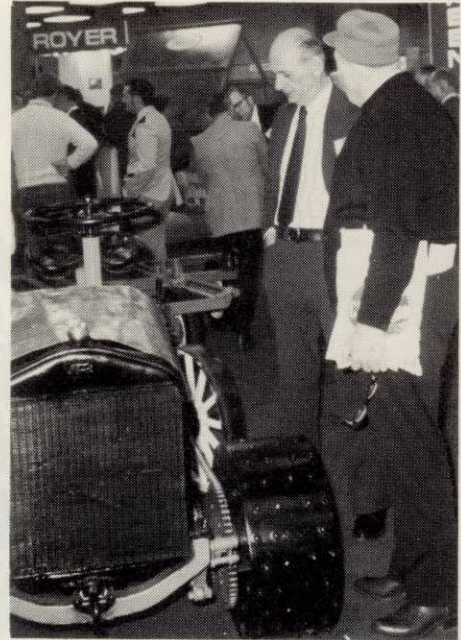
THE International Turfgrass Conference and Show is to commercial turfgrass what the Indianapolis 500 is to racing. Each is at the zenith. Golf course superintendents and race drivers respectively find the greatest spectacle on turf or in racing has a super-attractive force. You just can't stay away from these expos.

This year's January meeting and show in Boston was no exception. More than 4200 members and guests from every state in the nation and at least nine foreign countries made the 44th annual International the largest attended conference and show in history.

Exhibitors, taking a cue, from last year's enthusiastic reception, filled both floors of the John B. Hynes Civic Auditorium to near capacity. Statistics show that there was nearly one exhibitor for every member attending. Equipment, chemicals and services of every description dazzled and tantalized even the most sophisticated superintendents.

The big gala is the annual conclave of the Golf Course Superintendents Association of America. Theme for the meeting was "The Golf Course Superintendent And Changing Times." And with one possible exception all conference speakers were active members of the Green Industry. This pleasant departure from the big name speakers of past conferences gave a warm informality to the meeting which superintendents generally favored. More than one superintendent remarked that executive secretary Conrad Scheetz, the executive group and the host committee had put together a program tailored to the needs on the course.

In his opening address, Robert V. Mitchell, GCSAA president, put the size of the golf course business in proper perspective. "Current estimated capital invested in golf facilities is a staggering \$3.3 billion and a conservative estimate of total spending on such related items as golf
(continued on page 36)



This early model turf tractor by Ford brings memories to these exhibitors. More than 4200 people attended the show.



Onan displayed three new engines this year. Don Halverson, sales promotion, talks with superintendents.



GCSAA past president John J. Spodnik tells superintendents about the Occupational Safety and Health Act.

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Your inquiry will be forwarded to the manufacturers in whose products you are interested.

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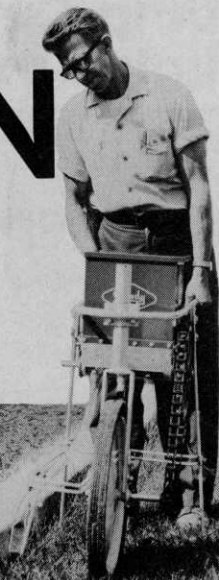
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**ART EDWARDS
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OPERATION WEEDOUT



APPLY CASORON NOW— GET THE JUMP ON SPRING WEEDS

If your business is maintaining weed-free highway right-of-ways, parks and recreation areas, landscape ornamentals, golf course grounds, shelterbelts and forests, or fence rows and buildings . . .

You need CASORON® herbicide.

CASORON is a selective herbicide that knocks out over 40 tough weeds and grasses, and perennial weeds like Quackgrass, Canada Thistle, Artemisia and many others.

And it works best in the fall when you really should start your weed control program. There's more time, more equipment available, and you reduce weed control labor needs during busy spring months.

Casoron is available in an easy-to-use granule that provides a wide margin of safety to both man and plants. It won't leach laterally, and you don't have to worry about soil residues.

This fall give our CASORON OPERATION WEED OUT a try . . . come spring you'll be happy you did.

For information mail the coupon below, or write: THOMPSON-HAYWARD CHEMICAL COMPANY, P. O. Box 2383, Kansas City, Kansas 66110.

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Colorful brochure now available FREE. Simply mail this coupon. We'll rush you your copy.

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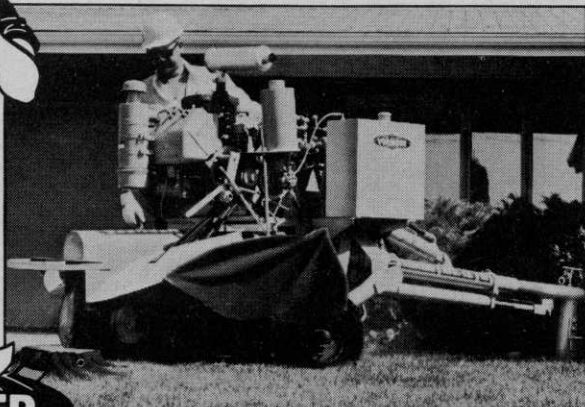
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630 Stump Cutter: Low-Cost Answer To High-Cost Tree Stump Removal



630 Stump Cutter — Low-cost high production unit. Ideal for contractors and municipalities with restricted equipment budget. Easy to transport — hitches to any car, truck, tractor or jeep. Can operate without towing vehicle.

Looking for a low-cost method of stump removal? Take a look at The Diggin' Dutchman's economical Model 630 Stump Cutter from Vermeer. Saves thousands of dollars annually because one man can remove the largest stump in minutes. No chopping . . . no sawing . . . no hand labor. A high speed cutting wheel does all the work; chews out stumps 6" below the surface. 36" width lets it "squeeze" into hard-to-reach areas—backyards, cemeteries, thru gates, next to buildings, etc. Interested? Write The Diggin' Dutchman for all the facts or, better yet, call him (515/628-3141) NOW for a FREE demonstration of any Vermeer machine. It's the world's most complete line. Vermeer Manufacturing Co., 7203 New Sharon Road, Pella, Iowa 50219.

THE DIGGIN' DUTCHMAN

VERMEER TREE EQUIPMENT DIVISION

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LEAFSPOT (from page 29)

tees three times each week to keep from removing too much of the plant at a time. By not scalping the plant, it is under considerably less stress and therefore less susceptible to leafspot in the early spring and fall.

Hopphan's fast-growing bluegrass fairways are clipped every day. "We never mow over 15 percent of the plant," says Hopphan, "Daily mowing makes the bluegrass grow lower and gives better ball height as well as cutting down the chances for leafspot and other fungi infection."

Leaf Spot is not restricted to bluegrass and bentgrass turf. It strikes almost all types of turfgrasses and

special care should be taken to seed a wide range of resistant varieties for best disease prevention insurance.

All recognized turf management practices can play a role in prevention of leafspot and other fungal diseases. Fertilization, disease control, variety selection, mowing, and irrigation are interrelated. Each must be an integral part of the entire turf management program. A superintendent who manages these "tools" will find his turfgrass in better condition for play. Effective management of a disease control program has paid increased benefits to Hopphan and Grassl. And environmental protection chemicals such as Acti-dione are helping other turf managers promote superior turfgrass culture on their courses. □



Grassl battles leafspot from first thaw to snowfall.

What Is Leafspot?

Because leaf spot often goes undetected until most of the damage is done, it is important for golf course superintendents and other turf managers to initiate a total preventive control program against this common turfgrass disease.

The leafspot causing fungi are host-specific pathogens, each attacking only certain non-resistant varieties of grasses. If the turf manager has sown a diverse seed mixture, the disease will likely attack only one type of grass and the rest will remain healthy. This is the reason that the disease often goes unnoticed until severe thinning of a particular grass variety has occurred.

Leafspot is caused by several

species of the *Helminthosporium* fungus. *H. Vagans* is the major causal agent in bluegrass turf of the northeast while *H. sorokinianum* is prevalent in the central states. On bentgrass, *H. erythrospilum* and *H. sorokinianum* are in central areas and *H. giganteum* is primarily confined to southern localities. Although the species vary, the symptoms, life cycles and results are similar.

The fungi attack the older lower leaves and basal sheaths and stems. Dark brown or purple spots appear first and "choke off" nutrients to the upper leaves, turning them yellow. The grass may die and severe thinning will result, allowing weeds a foothold. Frequently, the turf manager

will not notice the damage until thinning has occurred and the disease itself has subsided. In these cases, it is a common mistake to blame the damage on drought or weed encroachment.

Leafspot is most likely to occur between April 1 and May 15 when temperatures are cool and the turf is moist. It then appears again in the fall between September and November. Grasses are coming out of winter or hot summer dormancy at this time and are under stress, making them especially susceptible to the disease. *Helminthosporium* is present year-round, however, and can cause damage during cool, wet periods of the summer and fall.

Due to an advance in tree therapy developed by Lowden, Inc., many selected diseased American Elm trees can now be saved. Initiated in 1955, our antibiotic injections have resulted in the successful cure* of many diseased Elm trees. Now this treatment of Dutch Elm Disease is to be made more widely available to Elm tree owners at reasonable cost.

The treatment consists of the injection of an antibiotic directly into the trunk of the diseased tree with booster shots later. The antibiotic moves quickly throughout the tree, attacks the disease fungus, and is then absorbed within the tree. The materials and the process are safe for people, trees, and environment.

A limited number of diseased Elms will be selected for treatment under an experimental permit this year. If your diseased tree is accepted for our applied research program, the probability of successful treatment is very high. Leading arborists in New England are being chosen to further explain our new therapy and review your Elms.

Programming and organizing treatments to treat specific Elms in your area must be scheduled soon. An early review of the tree allows us to determine the degree of infection and thus the possibilities of saving the tree. These procedures must be carried out as soon as possible,

so that therapeutic injections can be made during the 1973 growing season. Our detailed brochure, entitled "A Chemotherapeutic Experimental Program for a Cure of Dutch Elm Disease," will be forwarded to you upon receipt of the coupon. Please act promptly.

Write: Lowden, Inc., 16 Franklin Street, Needham Heights, Massachusetts 02194.

*Cure—a therapeutic treatment that restores an Elm tree infected by *Ceratocystis ulmi* (as shown by laboratory culture), to a visibly healthy condition by reducing the growth of the fungus to an innocuous level or by completely eradicating the fungus.

LOWDEN

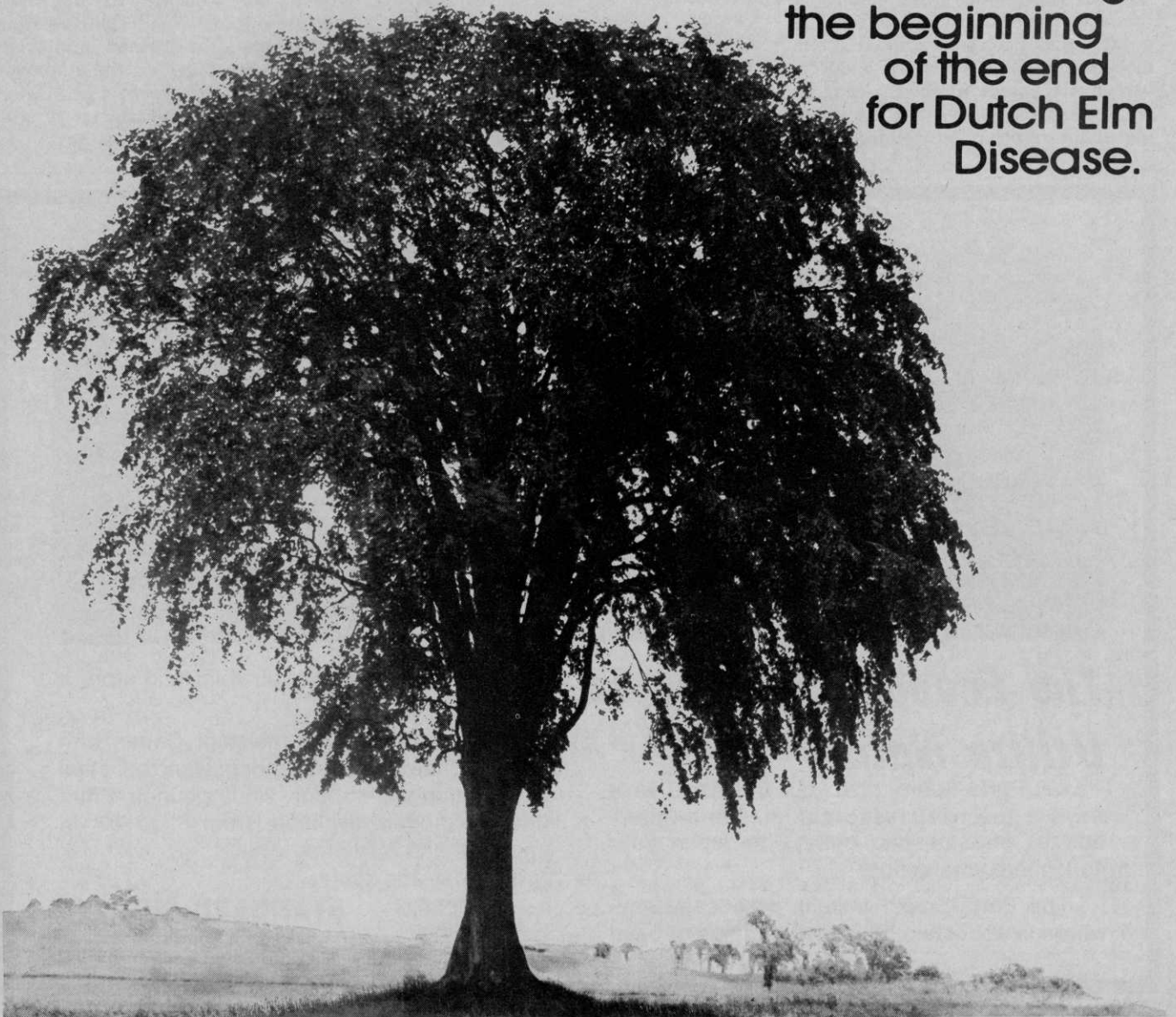
SAVE THE STATELY ELM. WRITE NOW.

Name _____

Address _____

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**Announcing
the beginning
of the end
for Dutch Elm
Disease.**



For More Details Circle (173) on Reply Card

GREATEST SPECTACLE

(from page 32)

balls, clubs, shoes and other dress items would exceed another \$200 million," he said.

"Americans have been playing golf for more than 80 years, but the past decade has seen the game's greatest growth. During this period the number of courses increased 56 percent, and the number of golfers increased 123 percent."

Mitchell told delegates that 13 million Americans played golf during 1972 on 10,665 regulation courses, 974 par-threes and 298 executive-length courses. He said more than 250 regulation courses are scheduled for completion during 1973. GCSAA currently has over 3800 members in the U.S., Canada and other countries.

"Golfers are very sophisticated in their demand for the finest conditions," Mitchell concluded, "but they don't always appreciate the costs in time, money and labor. In the face of this contradiction, we will get the most from every dollar spent by keeping pace with the modern turf management methods. That is what this conference, with its sharing of information, educational pro-

Table 1. Conference attendance continues high for the national turf conference staged by the GCSAA. Statistics for the past five years are:

	Boston, Mass. (1973)	Cincinnati, Ohio (1972)	Denver, Colorado (1971)	Houston, Texas (1970)	Miami Beach, Florida (1969)
Members	1198	1309	1076	1182	1078
Ladies	487	455	564	592	620
Guests	473	226	234	189	194
Greens Chairmen	87	250	214	211	506
One Day Admission	735	609	333	419	285
Turf Students	122	219	142	52	57
Exhibitors	1114	985	922	975	771
Total Registration	4216	4053	3485	3620	3511

grams, and exhibits will accomplish."

In the sessions that followed superintendents were exposed to "changes" in new laws, putting green construction, turf management practices, automatic irrigation and in the demand for more superintendents.

One law affecting all courses is the Occupational Safety and Health Act of 1970 (OSHA). John J. Spodnik, GCASS past president and superintendent, Westfield Country Club, Westfield Center, Ohio, explained the purpose of the act. He said that there is a general feeling that OSHA

has little to contribute to the field of turfgrass. But following his comprehensive review of the Act, it is easy to see that OSHA generally affects everyone.

Spodnik said that the employer is charged with furnishing each employee a safe place to work. This includes the wearing of approved safety equipment and the operation of machinery by trained employees only. He also said that the employer is obligated to keep records on employee injury and illness.

(continued on page 38)



The Economical Way To Utilize Nature

Let Porta-Span® give your trails and walk ways a touch of rustic charm. Porta-Span® bridges streams and gulleys to make your park more interesting.

The Porta-Span® installs practically anywhere in about two hours. No footings or base

required. Move it when you want and store it during the winter.

Pre-treated weather-resistant Cedar with laminated arch beams and galvanized steel construction will support 2,500 pounds. Eight different models available from 8' to 20' in length, 3' and 5' widths.

Write today for details.



STANDARD MFG CO.
220 East Fourth Street
Cedar Falls, Iowa 50613



Now Velsicol spans your vegetation control program

Nine New VEGATROL™ Labels Have Been Added to the Line of BANVEL® Herbicides

The new full line of VEGATROL 2,4-Ds and 2,4,5-Ts, together with the BANVEL line of herbicides, lets you eliminate *selectively* tough brush, vines and broadleaf weeds that other herbicides often miss.

With this choice, the herbicide can be matched to type of vegetation, season, location, soil type, topography, environment, and other considerations. See your Velsicol representative or herbicide applicator for details.

Why Banvel is the 3 E's Herbicide

EFFICACY—BANVEL herbicide is systemic—it translocates throughout the entire plant killing leaves, stems and roots. Broad-spectrum BANVEL gets the hard-to-kill vegetation.

ECONOMY—Long-lasting BANVEL herbicide offers low cost. Often one application per season is all that is required for weed and vine control. Brush can be controlled for several

growing seasons, with a 3- to 5-year root kill.

ECOLOGY—BANVEL has relatively short persistence in the soil. It has established tolerances for many food crops and milk. BANVEL is not harmful to animals eating foliage.

For information, fill in blanks below.

I am interested in controlling _____ on _____
(vegetation) (place)

Please send sample labels and
information to:

Name _____

Title _____

Company _____

Street or Box _____

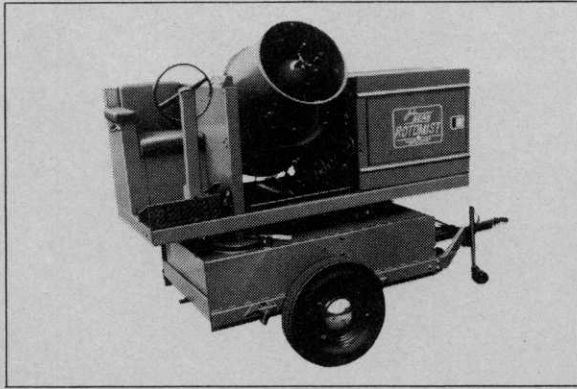
City _____ State _____ Zip _____

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Interested in Your Success
A Subsidiary of Northwest Industries, Inc.

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Get the tops in shade tree spraying

John Bean ROTOMIST sprayers have the power to put protection where it's needed most—in the tops of the trees. Straight-through air delivery, unrestricted by elbows, angled air passages or deflectors, breaks up droplets for uniform deposit of chemicals and carries them throughout the tree for full coverage, economically and fast. ROTOMIST sprayers are available in

four basic models for all kinds of spraying jobs from trees and shrubs to mosquito and fly control, weed and brush spraying, windrowing leaves, spraying livestock, zoos and other areas where pesticides are needed. Find out how to save from 50 to 75% on equipment and labor with multi-purpose ROTOMIST. Ask your John Bean dealer now.



AGRICULTURAL EQUIPMENT

JOHN BEAN

DIVISION

Jonesboro, Ark.—Ocoee, Fla.—San Jose, Calif.

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GREATEST SPECTACLE

(from page 36)

"Standards specifically for the golf course are almost impossible to prepare," he said, "but by April 28, 1973, a complete package of OSHA standards will be published."

This well attended session next heard Roger J. Thomas, marketing manager, turf equipment, Jacobsen Manufacturing Company, discuss noise levels and golf maintenance operations. While it can be said that noise on a golf course is small in comparison to that of a stamping

plant, noise in general has caught the ear of the Federal government. Thomas said that during the past decade people have become increasingly aware of noise in their daily living.

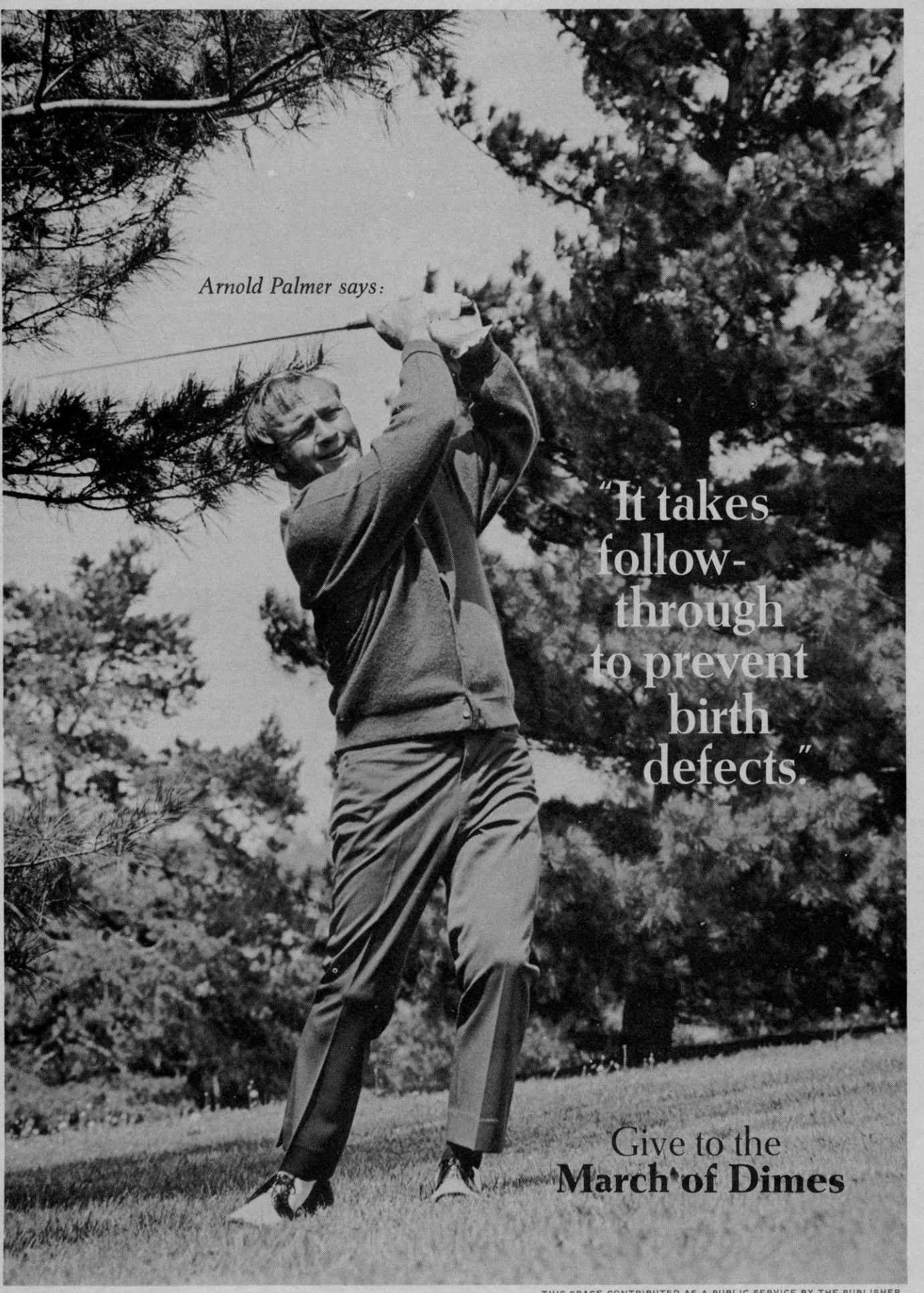
Using decibels as the unit of measurement, the marketing manager said that 90 decibels is the maximum noise permitted for a worker during an eight hour day. He cited the decibel rating on a number of pieces of equipment, but also pointed out that its the aggregate of noise over the eight hour period that falls within the standard. Thus, a worker operating two pieces of equipment, each of which emits a noise level very near 90 dBA, may have a total combined decibel rating exceeding the federal limit. By law he would be forced to retire to a less noisy environment for the duration of an eight hour day.

Clarke Fenimore, president, Ky-Inna Turf Supply, Louisville, Ky., (r) discusses sprayers and spray tanks with Bob Edwards, president Edwards Manufacturing Company, Ponca City, Okla. (l) and Bill Cook also of Edwards Mfg. Co.



Thomas advised superintendents to check the sound level of each piece of equipment used on a golf course. "Each superintendent will have to know the various sound levels," he said. This way you will know how to combine equipment sounds and still stay under the maximum noise level.

(continued on page 44)



Arnold Palmer says:

**"It takes
follow-
through
to prevent
birth
defects."**

**Give to the
March of Dimes**

Doris Divot

We can't help you with Doris Divot.
But if you've got Poa annua, crabgrass, goosegrass, chickweed, we've got just what you need to get rid of them.
Chip-Cal Granular. It will control these weeds without harming your good grass. And it will allow overseeding with good perennial grasses at the same time you use the herbicide.
Chip-Cal Granular will keep your greens (and fairways) in the pink.

Chip-Cal Granular.

From Rhodia Chipco Products.



"Divots look better with the grass side up, mother!"



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WEED CHALLENGE (from page 30)

with the Accutrol spray system.

An interesting sidelight to this success story was reported. The same chemical mix and one spray rig was used throughout the rail line. When the area called for higher rates, they slowed the equipment ground speed down — 15 mph on the mainline, 10 mph in the yards and 5 mph on the bridges. Standard rate was 25 gallons mix per acre with the Accutrol system versus 50 gallons

used in previous years. Results? They spent more money, but they feel that the initial control of vegetation is better. Next year they will be looking for a lower dollar cost per mile.

F. E. "Gene" Gonzalez of the Du Pont Company told professional weed men about Krovar I field test results. Krovar I is a 50-50 mix of bromacil and diuron. On the basis of small and large plots Gonzalez said

that Krovar offers these advantages over either of the herbicides alone: less lateral movement, more control of late germinating seedlings, safer to root system of trees and ornamentals, superior control of perennial grasses, and others. He said the interest in Krovar I is good among weed specialists on highways, utilities and railroads.

Why does the Navy need weed control? Don R. Estes, special assistant for applied biology, southern division, Naval Facilities Engineering Command, says he's often asked that question. However, you quickly can understand that the Navy has a great need for vegetation control. Just as the Air Force needs many ground support persons to keep planes in the air, so the Navy has many thousands of acres of naval bases to support ships at sea. A naval base is like a city and it has weed control problems, too. Estes described his job in weed control activities and noted that the man with the hoe and brushhook is being replaced by the man who is qualified to apply herbicides. He said that last year his office approved 2,570 gallons and 527,128 pounds of herbicide concentrates for application in the Sixth and Eighth Naval Districts.

Another area of special interest to the Southern Weed Science Society is aquatic weed control. Like the industrial section, this session has grown too. It is speculated that interest in this area will continue to grow as more and more people become aware that something can be done with the vegetation problems in southern waters. This year 10 papers were presented.

In Florida public waters, control efforts entail chemical, biological and mechanical measures, said J. Clarke Hudson, aquatic weed control specialist, Florida Department of Natural Resources. Currently, however, chemical control is our most efficient option. Yet it is the one under attack. This we have looked at new approaches to chemical weed control in the aquatic environment.

Hudson said that slow release pellets, inverts, foams and new techniques of application are being tested. He concluded that future aquatic weed control will involve integrated systems, but chemicals will continue to play a vital role.

Dr. B. David Perkins, entomologist, agricultural research service, USDA then reported on the release of the mottled water hyacinth weevil

(continued on page 42)