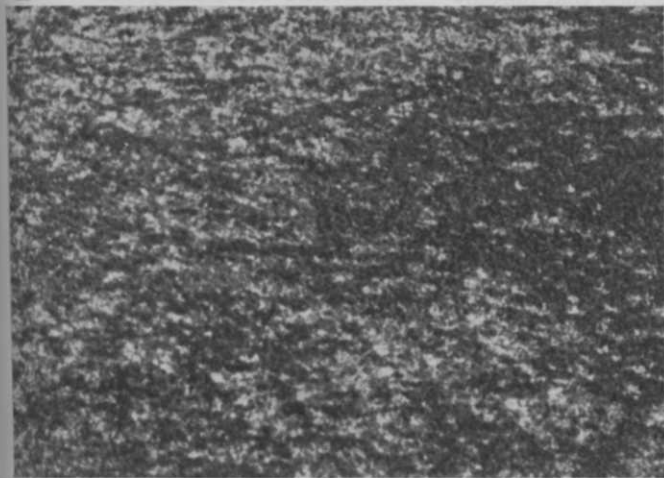
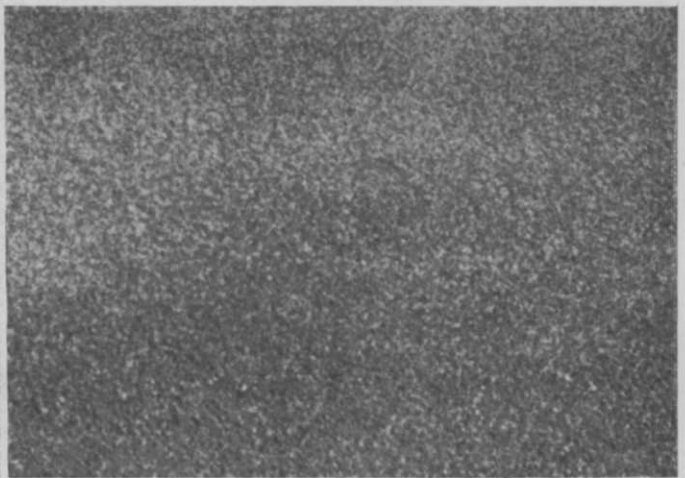


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## DED CONTROL (from page 20)

plicates the use of Benlate through trunk injection is in finding a suitable solubilizer for the chemical. Of literally hundreds of compounds tested, most have produced phytotoxicity in elms. Lactic acid, a compound familiar to cattle breeders, holds promise, but much research and testing still remain before solubilized Benlate will be available commercially.

Dr. Worf points to an additional concern. He believes that diseased elms should be exposed for a longer period of time to Benlate. Currently,



Dr. Gayle Worf, extension plant pathologist, Univ. of Wisc., has spearheaded the training program for arborists in this state. He and others have held seminars and workshops to teach new methods of DED control.

one application over a 24 to 48 hour period is made, followed by additional applications as prescribed by the arborist. Worf feels that this one shot approach should be more thoroughly tested. If Benlate were made available to the tree for periods of six weeks or longer, the elm would have a better chance of combating DED, he said.

Del Kennedy is quick to note that the Mauget system is still in its infancy. "We have not perfected every aspect of the injection concept," he said. "Our scientists are

testing pressurized capsules, slow release systems and others to determine the best system at a cost-effectiveness ratio that is not prohibitive.

In spite of the disadvantages and the imperfed techniques, it is interesting to note that response to DED control is highly in favor of the injection concept. Arborists not only in Wisconsin but more recently several hundred in Maryland and Ohio showed more than curiosity to the Mauget Tree Injector. Their presence at meetings sponsored by state universities and CLM distributors is testimony that interest is genuine.

Furthermore, DED control reopens a rather closed business that heretofore ended in removal of the dead elm. For the first time arborists can treat diseased elms with more than mild success.

Much is yet to be learned about tree injection with Benlate. But arborists who carefully learn the rudiments at this point will be better prepared when more sophisticated techniques are perfected.

## Sunshine State Site of Aquatic Weed Meeting

The Aquatic Weed Science Society, formerly the Hyacinth Central Society, will hold their annual meeting in Miami Springs, Fla., July 9-12.

The program will be centered around the latest policy regulating the use of pesticides. In addition, biological, mechanical, chemical and other new methods of controlling aquatic weeds will be presented.

This year's field trip will be to the USDA Research Center, Fort Lauderdale. Dr. David Sutton, Robert D. Blackburn, Dr. Kerry K. Steward and others will tour members through the facilities.

Ray Spirnock, field station chief, Central and Southern Florida Flood Control District is serving as local arrangements chairman. He has arranged an interesting and informative program for the ladies and children.

For more details contact Robert J. Gates, Society president, Box 508, Floral City, Fla. 32636.

## Chipman Chemicals, Ltd. Distributor For Cutrine

Applied Biochemists, Inc. has announced the appointment of Chipman Chemicals, Ltd. as exclusive distributor in Canada for Cutrine algacide.

Citrine was registered in Canada in 1971 for use in controlling algae in fire, farm and fish ponds and fish hatcheries. The product has been registered in the United States since 1965 and marketed nationally since 1969.

Applied president Donald Seymour pointed out that Chipman offers more than 50 years experience in the distribution, development and application of chemicals.

In Canada, water treated with Cutrine may be used to irrigate established grasses on turf, fairways, putting greens and established ornamental plants.

## Herbicide for Bentgrass Formulated by Mallinckrodt

A new formulation of Trex-San herbicide for weed control on bentgrass is now available, according to Mallinckrodt. Called Trex-San Bent, the product offers the same broad-spectrum activity as Trex-San, yet provides the safety needed to treat fine bentgrass greens.

According to Stan Frederiksen, manager of specialty agricultural products at Mallinckrodt, turf managers have sought a broadleaf herbicide with "built-in" extra safety, so accidental overdoses, even on fine bent putting greens, would do the complete weed removal job, yet cause no adverse effects. Trex-San Bent answers this special need.

In addition, golf courses sown entirely to bentgrass can use this complete herbicide with maximum safety to turf.

The new formulation controls more than 35 broadleaf weeds, from clover to dandelion.

For more details, circle 720 on the reply card.

## Univ. of Massachusetts Turfgrass Alumni Organize

Officers of the newly formed University of Massachusetts Turfgrass Alumni Association are: Paul J. O'Leary, president; Larry Bunn, 1st vice president; John O'Connell, 2nd vice president; Frank Santos, secretary; and, Dr. Joseph Troll, treasurer.

The primary purpose of the alumni organization will be to raise funds for an accelerated program of turfgrass research at the University of Massachusetts.

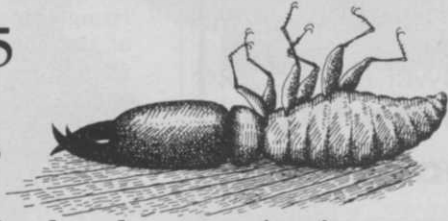
Alumni interested in contributing to the organization make checks payable to: Dr. Joseph Troll, Department Plant and Soil Sciences, Stockbridge Hall, Univ. of Massachusetts, Amherst, Mass. 01002.

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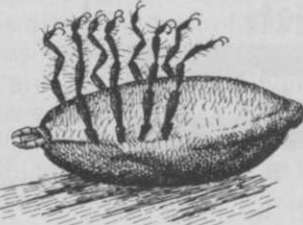
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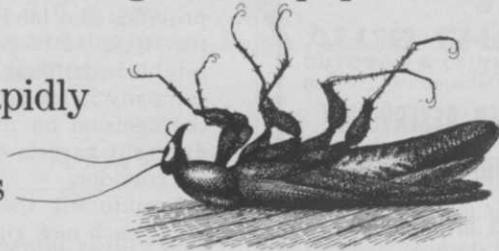
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toughest roaches. Vaponite's Vapona Insecticide vapors spread out into little nooks and crannies flushing roaches out and killing them rapidly.

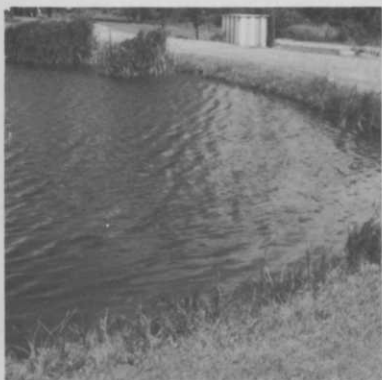


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## ECOLOGIST'S VIEW (from page 10)

fore authorization for construction is granted. Whatever can be achieved in minimizing aesthetic impairment of the environment without sacrificing other important values must be spelled out.

Thus on an electric transmission line a screen of trees can be left (or provided) where the corridor crosses a highway or stream. Likewise, on a rising slope where the straight line of the corridor becomes so obvious from the ground, the route can be angled, or broken by intermittent plant screens. In the manipulation or replacement of the general plant cover of the right-of-way, values other than aesthetic generally take precedence.

The great majority of pipeline and electric transmissions rights-of-way are just that, the right to install and service the line on property that is not purchased from the owner. The individual property owner retains the right to employ the surface area as he sees fit continuing to farm the area, use it for grazing, grow trees, control trespass, etc.

In developed areas, the owner, having no immediate plans, may relegate the responsibility of suppressing height growth of recovering vegetation to the transmission company.

On the other hand, the land owner may stipulate as part of the right-of-way lease or license that only tall-growing species of trees be removed and that native shrubs be damaged as little as practical in constructing the line.

Since ground cover must be promptly replaced to avoid erosion some transmission companies have provided the land owner a voice in the type of vegetation to be re-established. Thus the transmission company is far from a free agent in the decision on management of the different parcels of land crossed by the corridor.

Despite all the objections made when each new right-of-way is proposed, the corridor so formed is often of tremendous value to wildlife — both game and non-game species. This is particularly true when those rights-of-way cross forested country. Corridors, whether they be 50 or 300 feet wide, create openings where sunlight stimulates the production of ground and shrub vegetation. The closed canopy of a woodlot or forest is an excellent retreat and cover but is essentially lacking in food and browse plants.

Birds and mammals are the pro-

duct of the "edge" between food supplies in the open and shelter in the timber. We are seriously losing game and wildlife habitat in the United States by the declining number of small farms and the closing-in of maturing forests that 40 years ago were prime habitats for deer, rabbits, grouse, wild turkey, quail, and other species.

Fifty million acres in narrow linear corridors provide **edge effect** far beyond most other land management practices. In many parts of this country, developing these rights-of-way as open corridors with a plant cover favoring wildlife is not only compatible with their primary purpose (transmission) but will give the highest environmental return.

The state conservation department journals are beginning to sparkle with success stories in cooperative wildlife programs on transmission and pipeline corridors. For example, the Department of Fish and Wildlife Resources in Kentucky<sup>2</sup> just recently worked-out a cooperative plan with Columbia Gulf to seed sections of their 150 feet wide, 240 mile long pipeline with upland gamebird plant covers which include *Sericea lespedeza*, crown vetch, buckwheat, etc.

Georgia Power Company (Atlanta) actively promotes "Attract and Conserve Wildlife in your area: with help from the Georgia Power Company", and the Georgia Game and Fish Department pay them tribute<sup>3</sup>.

The Wisconsin Power and Light Company has been practicing selective vegetative management on their power line rights-of-way since 1955 and found it to be not only of public benefit but at a savings of maintenance costs to themselves<sup>1</sup>.

All this requires management and not just happenstance vegetative recovery and periodic knockdown. It calls for selective removal of undesirable trees, selective use of herbicides (such as stump treatments), use of growth-regulating chemicals, and cooperative programs with habitat management groups in vegetative programming.

While the foregoing has focused on those corridors where rather minor acreage is removed from vegetative production, it does not follow that other types of corridors such as highway and railroad rights-of-way and canal banks have no similar attraction for wildlife — they have.

In the midwest and Great Plains both pheasants and wild ducks make

(continued on page 27)

are in pheasants. And the general public doesn't shoot up transformers on high-tension lines.

In addition, in many suburban areas of the northeast there are unexploited opportunities for building good public relations by developing hiking trails along these rights-of-way, something most local conservation commissions would be glad to help with.

You have, however, three problems to overcome before your services will be widely accepted outside the utility industries which have so far been captives of unimaginative vegetation management techniques.

I predict that the utilities will not remain captives very long, however, because they are about to feel the crunch of justifying increasing electric power costs for the first time in their history. This will lead to new budget scrutiny that should favor more economic and more socially sophisticated programs of right-of-way management.

The first broad problem mentioned above is that associated with your credibility as scientists; the second has to do with the acceptability of your tools, the herbicides; and the third involves the acceptability of the effects of your practices in an increasingly sophisticated ecological age.

The question of credibility, like it or not, is entangled in the abuse of herbicides by our military in Vietnam. It is psychologically inevitable that the abusive use of a tool by one group will involve all other users of that tool in the public mind.

The way out of this dilemma is not to accuse the public of emotionalism, but to make sure no one abuses a good tool and that the public is educated to the realities of the case. This is not a passing fancy, because the concern of the American Association for the Advancement of Science dates back all of five years.

The Department of Defense's attempt<sup>2</sup> to answer its critics by having the Midwest Research Institute "assess the ecological effects" of herbicides only made matters worse among knowledgeable audiences because MRI was not competent to assess ecological effects. As Frank Egler<sup>3</sup> pointed out, this MRI review succeeded mostly in showing that there is very little science in Weed Science.

Let me elaborate on this last point to avoid insulting those of you who consider yourselves scientists. I refer here to the fact that science is necessarily reductionist. Science

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analyzes environmental reality on a piecemeal basis. This makes the scientist an expert in a very small area of the total reality that must concern us as citizens, and the trouble is that science, having dismembered reality for analytical convenience, is seldom interested in putting things back together again. What is required is an ecological point of view, but very few people have developed such a point of view as yet.

A generation ago Alfred North

Whitehead<sup>4</sup> pointed out that a proper profession is "an avocation whose activities are subject to theoretical analysis, and are modified by theoretical conclusion derived from that analysis." We've all been in such a hurry to keep up with the Joneses that we haven't done much philosophizing, which is what theoretical analysis is.

As a result, the Mrak report<sup>5</sup> to the Secretary of Health, Education and Welfare caught everyone by

(continued on page 28)



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## insect report



### INSECTS OF ORNAMENTALS

#### IVY APHID (*Aphis hederace*)

OKLAHOMA: Specimens from English ivy in Muskogee, Muskogee County. This is a new county record.

#### SOFT SCALE (*Lecanium kunoensis*)

CALIFORNIA: Counts of 10 per inch on pyracantha at San Jose, Santa Clara County. This is a new county record.

#### WEEVIL (*Scyphophorus acupunctatus*)

MISSISSIPPI: Specimens collected from century plants in Mississippi City, Harrison County. This is a new state record. This species native of southwestern U.S. and northern Mexico. Reported from California, New Mexico, Texas, Oklahoma, Arkansas, and Hawaii.

### TREE INSECTS

#### COOLEY SPRUCE GALL APHID (*Adelges cooleyi*)

PENNSYLVANIA: Egg laying underway at Mifflintown, Juniata County. Needles heavily infested in several acres of Christmas tree plantings; twisted needles abundant on 1971 growth.

#### ELM LEAF BEETLE (*Pyrrhalta luteola*)

OKLAHOMA: Adults on Siberian elm in Payne County and egg laying underway. First report of season. Adults in Major and Cleveland Counties. KANSAS: Adults, no eggs, on leaves of Siberian elm at Manhattan, Riley County. First of season. Adult damage heavy on some Siberian elms in Clark and Meade Counties. Egg masses observed on leaves of Siberian elms in Meade, Riley, and Shawnee Counties. No egg hatch noted. IOWA: Adults collected in Guthrie County. This is a new county record.

#### SOUTHERN PINE BEETLE (*Dendroctonus frontalis*)

Population increase noted in southeastern United States. Populations at serious outbreak levels in portions of LOUISIANA, MISSISSIPPI, ALABAMA, SOUTH CAROLINA and GEORGIA. Infestations increasing in TEXAS, ARKANSAS, NORTH CAROLINA, and VIRGINIA.

#### CALIFORNIA FLATHEADED BORER (*Melanophila californica*)

CALIFORNIA: Infested pine trees in Trinity National forest. About 20 trees in 10-acre stand involved.

#### SPRING CANKERWORM (*Paleacrita vernata*)

KANSAS: Very heavy on elms in Topeka, Shawnee County; 25-50 percent foliage consumed on leafed out trees. On many trees not yet leafed out, larvae damaged buds so many of these trees may not leaf out for some time. Early instars heavy on elm in Seneca, Nemaha County. Trace in Thomas, Ness and Hodgeman Counties. Many trees in Topeka banded with sticky compound to deter moths from climbing trunks. Infestations still heavy.

#### EASTERN TENT CATERPILLAR (*Malacosoma americanum*)

WISCONSIN: Hatch on April 27, 10 days later than in 1971. KENTUCKY: First hatch, April 1, Lake Cumberland State Park, McCreary County. MASSACHUSETTS: Hatch on April 19 in Hampden County.

#### CALIFORNIA OAKWORM (*Phryganidia californica*)

CALIFORNIA: Larvae, up to 12 per tip, defoliated 2,500-3,000 acres of oak in Contra Costa County. Very little biological control effects this pest.

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**ASPLUNDH**

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## ECOLOGIST'S VIEW (from page 24)

such use of roadside cover for nesting that the first spring mowing of the rights-of-way have to be postponed until after the eggs have far beyond most other land management. In the arid southwest the roadsides, because of the paved strip and the bordering bar pit, remain green long after the adjoining lands have dried up. In a way this attraction to these corridors is unfortunate for traffic moving at high speeds exacts a serious toll. For example, over 20,000 deer are killed each year on the highways in Pennsylvania. In contrast, pipelines and electric transmission lines, can be relatively disturbance free.

It would be an error not to cite the important bid man's recreational programs are making for these corridors. In addition to the necessity of establishing cross-country trails for hiking, bicycling, and skiing, the advent of OFF-ROAD-VEHICLES has put both public and private agencies under heavy pressure. Motorcycles, trail bikes, snowmo-

biles, dune and marsh buggies are here to stay, but their potential for damage to the natural environment is recognized. The goal is to get them off the public highways, away from critical wildlife habitat, and on to crosscountry trails designed and programmed for their use.

Wisconsin, by the fall of 1971, had registered over 127,000 snowmobiles and from these receipts has a program for trail development<sup>4</sup>. The average length of trail desired is about 25 miles, with minimum of 10. They now have 550 miles scheduled for construction.

Governor Rockefeller recently requested an inventory of abandoned railroad rights-of-way within New York State, having in mind their conversion to bicycle trails<sup>5</sup>.

Oregon State legislature is reported to have allocated \$1.3 million for bicycle trails.

It remained for the Illinois Department of Conservation to come up with one of the most unique trail systems. The state purchased the

abandoned Hennepin Canal and converted the majority of its 96.8 mile canal system to a cross-country pleasure boat "trail".

Corridors in the United States are thus headed for multiple purpose use. The competition for their supplemental use is apt to be keen, for many of these uses are not compatible, one with another.

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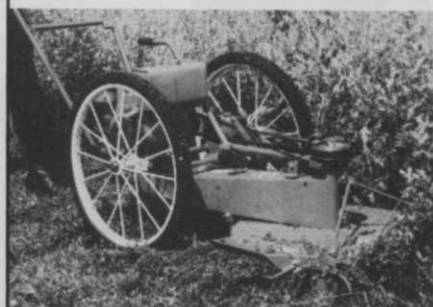
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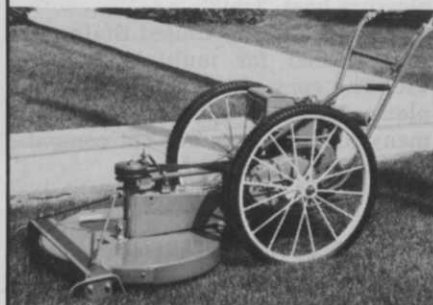
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## PUBLIC VIEW (from page 25)

surprise, and Theodor D. Sterling<sup>6</sup> pointed out that the questions of 2,4,5-T's toxicity and teratogenicity will not be soon settled because no one has yet put together a satisfactory experimental design to assess the effects of 2,4,5-T at low doses. This is certainly something you practitioners should have insisted the chemical companies do for you.

Perhaps the worst effect of past right-of-way management with herbicides has been the wasted opportunity to create environmental diversity by encouraging the growth of a variety of low shrubs by spot treatment with judicious herbicide applications instead of the wasteful blanket spraying that has been the rule. The electric utilities are even more to blame here for having allowed you to waste company funds that should have gone into environmental protection. This is where the real opportunities exist.

For over a decade, beginning in 1946, Frank E. Egler<sup>7</sup> published a long series of scientific and popular articles advocating spot control of woody vegetation by 2,4-D and 2,4,5-T, a methodology completely rationalized in his 1953 Smithsonian Institution Report, "Vegetation Management for Right-of-ways and Roadsides". William A. Niering of the Connecticut Arboretum repeated many of these studies and spoke to early Northeastern Weed Control Conferences about them.

In 1963 Niering and Richard H. Goodwin produced a homeowner's guide, "Creating New Landscapes with Herbicides<sup>8</sup>".

In 1961 the U. S. Forest Service<sup>9</sup> accepted Egler's vegetation management concepts in a publication of its own. And in 1966 the methodology was put into a popular book, *THE WILD GARDENER IN THE WILD LANDSCAPE*, by Warren G. Kenfield<sup>10</sup>.

**The crux of my message is that the science of right-of-way management is in print, but that few of you have used it.**

I acknowledge that some of you have accepted some of these ideas and tried to apply them, with more or less success; but I feel safe in saying that blanket spraying has been the rule. Too many of you have been concerned with "killing brush" rather than manipulating vegetation. The first approach is negative, the second both positive and dynamic.

The times call for working with Nature by adapting our technology to environmental dynamics. Herbicides, properly used, are an ingeni-

ous tool for molding the landscape by selecting out those few species that have a tendency to get in the way of growing into overhead wires, or otherwise interfering with our objectives.

There is no need to condemn all woody vegetation as "brush," as too many chemical company advertisements have done. There is no need to oversell herbicides; it is time to use them rationally, as the valuable tool they are when used sparingly and intelligently. This is all the future asks of you and me.

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## Grounds Management Society Schedules September Meeting

The Professional Grounds Management Society has announced the dates of their 1972 annual meeting. The Society will meet at the Twin Bridges Marriott Hotel, Washington, D. C., September 13-16. Registration will begin on the morning of the 13th. Members and non-members of the Society and all people interested in gardening and grounds management are urged to attend.



**UTILITY VIEW**(from page 12)

been most successful. It is not my intention to burden you with extensive cost figures. You might, however, be interested in one compilation relative to maintenance expenditures. Transmission maintenance cost of acreage treated annually over the period 1960 through 1971 averaged \$54.00 per acre treated.

In addition to the transmission program, over 700 miles of roadside distribution rights-of-way are also under chemical control.

Cooperative activities with municipal, county and state agencies have been an important part of our vegetation management program. We have had the privilege of participating in numerous projects related to soil stabilization, game food and cover plantings, roadside safety, and beautification. Herbicide applications have been made over all types of terrain under diverse soil and drainage conditions, through wild-life areas recreational areas and in close proximity to residential locations.

Acceptance by the general public of our transmission and distribution chemical programs has been most

favorable. We believe this has been largely due to the "selective" approach and timely scheduling of repetitive treatment resulting in the suppression or elimination of unsightly "brown out" areas, in short, aesthetics—and reasonable respect for the property of others. Since most of our transmission rights of way are easements, our contractor attempts to make a "courtesy call" to each property owner before traversing or treating the right of way on his property.

We believe *immediate personal contact* is essential to any spray complaint situation and our ability to reach and inform those questioning the operation has resolved many potential problems.

Objections attributable to the chemical programs over the past 23 years have been minimal, and those that have developed were usually found to be based on misunderstandings. However, the confusing and adverse national publicity of 1969-1970 associated with the use of herbicides did set the stage for a complaint of considerable magnitude.

In July 1970 we were the recipient of a continuing series of news re-

leases, soundly criticizing our work and the use of herbicides in general.

We feel that the use of the controversial herbicide was not the real problem. We are of the opinion that this was used as a tool to stimulate an emotional controversy, was political in origin, and designed to promote continuing newspaper coverage—which it certainly did—all unfavorable to the company image.

Unable to resolve the problem through normal means, and recognizing that defense of the chemical program was mandatory, our Public Information Department arranged a press conference—in order to place the company chemical vegetation management program before the public and in its proper perspective.

We are certainly aware that the activities of the company are under close public scrutiny, and accordingly, have made some changes in the transmission right of way management program. Consideration is given to reducing the repetitive treatment cycle in specific problem areas to further reduce "brown out" potential.

We are also able to customize the chemical applications to better

(continued on page 32)

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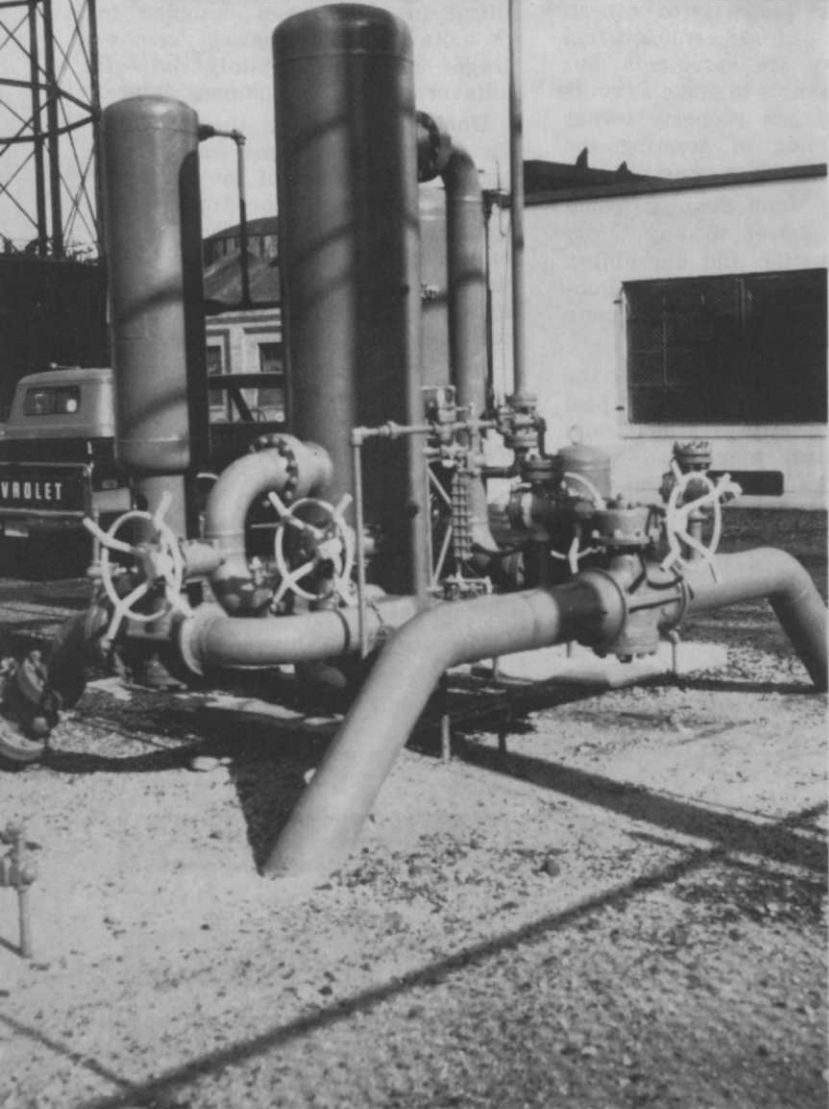
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For more information, write to Industrial Chemicals Dept., Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

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