



The Case of the Invisible Vapor Barrier

By DONALD FOX
Thompson-Hayward Chemical Company

One mystery that has been puzzling horticulturalists and paving contractors for years is: How do you effectively protect asphalt paving from damaging weed break-through without endangering nearby ornamentals?

It's a serious problem, one that affects both new and repaving projects. Consider this all too familiar scene:

On the one hand, you have a landowner asking a contractor to renovate and repave an old parking lot. But the contractor is hesitant to apply traditional soil sterilants to control germinating weeds because they would damage or kill existing ornamentals nearby, some of them twenty years old or more and extremely valuable to the landowner.

On the other hand, the contrac-

tor — and the landowner — must consider the value of the new paving. How long will it last if the soil under it remains untreated?

It's the sort of thing that has people shaking their heads and flipping coins to decide which way to go.

But someone seems to have discovered the answer. There's a new herbicide called "CASORON®" weed and grass killer that effectively kills germinating seeds under asphalt paving . . . and yet does no harm to existing woody ornamentals when used as directed.

Casoron is dichlobenil herbicide manufactured and distributed by Thompson-Hayward Chemical Company of Kansas City, Kansas. When applied as a preemergence granular herbicide or as a spray it kills a wide range of shallow and deep-rooted annual and perennial weeds.

Included among these are many annuals, plus such perennial weeds as artemesia, Canada thistle, curly dock, fescue, leafy spurge, orchardgrass, quackgrass, Russian knapweed, timothy, wild artichoke, wild aster, wild carrot, yellow rocket, sheep sorrel and others.

Casoron formulations will not control woody growth such as small trees, brush and woody vines.

Why does it work safely next to ornamentals and other herbicides do not?

Traditional soil sterilants tend to be absorbed by a growing plant's root system and translocated to the leaves, where the "killing" action takes place. All root systems, including ornamentals, accept these chemicals, and the damaging effects are similar across the plant spectrum.

Casoron, however, works in a significantly different manner. It is a volatile chemical that quickly vaporizes after application. When applied uniformly under asphalt, this gas vapor is trapped beneath asphalt and extends down several inches into the base material.

This "vapor barrier" is the key factor. When plant tissues enter the vapor barrier, the terminal meri-

Above left: Unchecked weeds alongside this road invites more weeds, more pavement damage and more maintenance expense.

stematic tissue stops cellular division and elongation.

This vapor barrier is the key factor for the herbicide's success. In addition to being a powerful inhibitor of germination, it acts directly on the growing points and root tips, causing the terminal meristematic tissue to cease cellular division and elongation.

Therefore, when plant tissue enters the "vapor barrier," that part of the plant simply stops growing. New seeds within the treated area are killed immediately after germination, while plants growing outside the treated area refuse to enter it.

Obviously, this applies to ornamental root systems, as well. They stop growing toward the nearby treated area and protected asphalt paving. No harmful chemicals are translocated to the ornamentals.

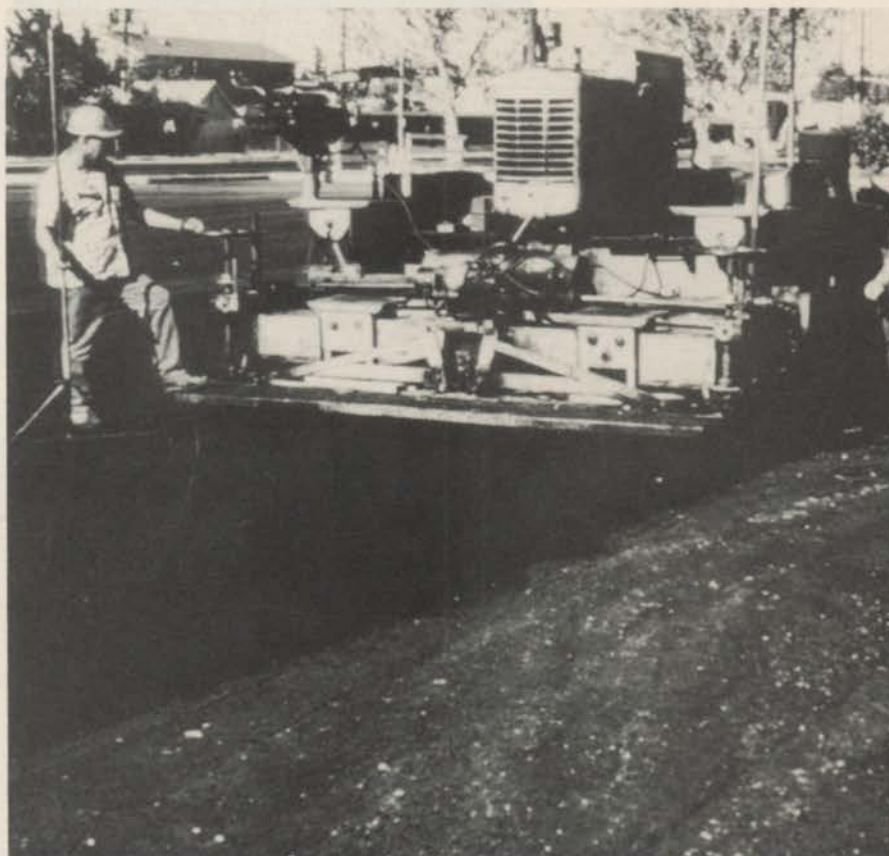
And the asphalt paving remains absolutely unaffected by damaging root systems or growing vegetation.

For these reasons, Casoron is an ideal herbicide for under-asphalt applications bordering ornamental landscaping: parking lots, road shoulders, recreation courts, sidewalks, bicycle paths and driveways. The manufacturer also reports widespread use in non-critical (i.e., non-ornamental) areas such as roadways, reservoir walls, airport runways and industrial areas.

The effectiveness of this relatively new herbicide in controlling weed growth under asphalt can be



Just ten hours after application of the herbicide, the paving contractor for the parking lot spread a 1/8 inch oil base to seal the soil and trap the herbicide vapor barrier.



The final asphalt course was applied to the Fresno parking lot a week after the Casoron application. The manufacturer's literature suggests that the herbicide is effective for three years or longer and there has been no sign of weed break-through to date on this job. The application date was August 1972.



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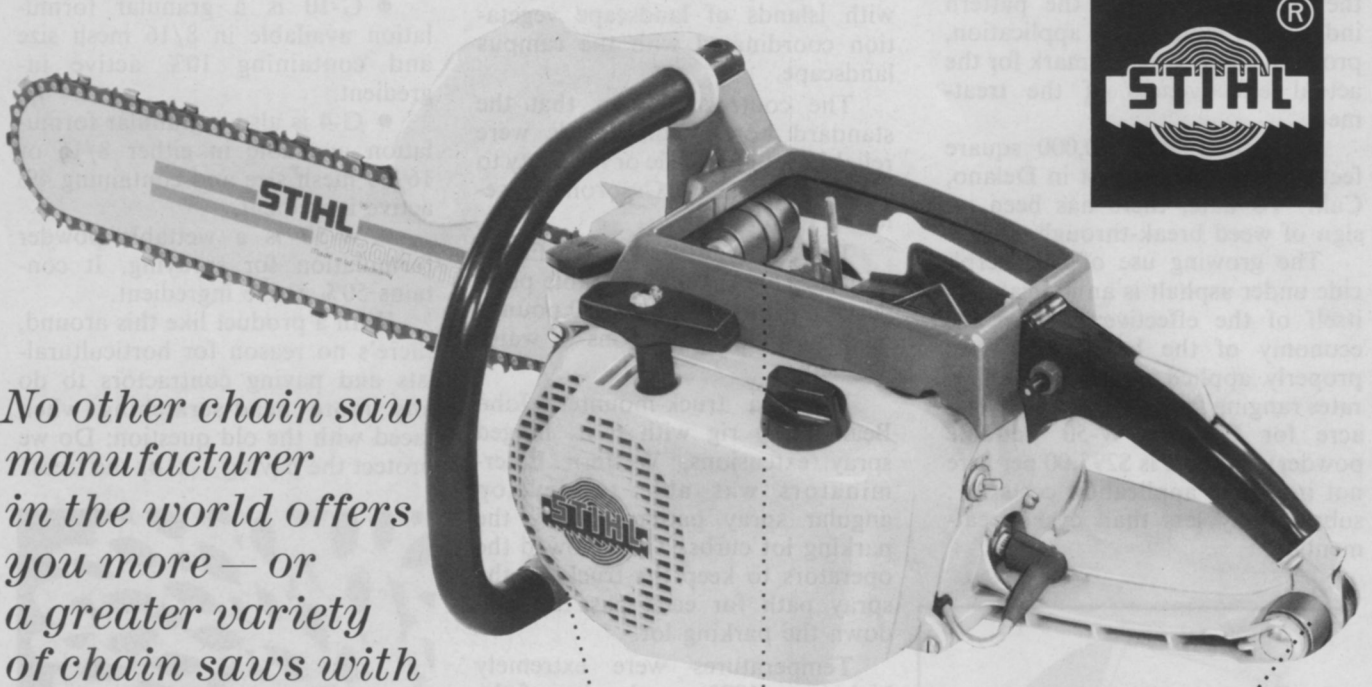
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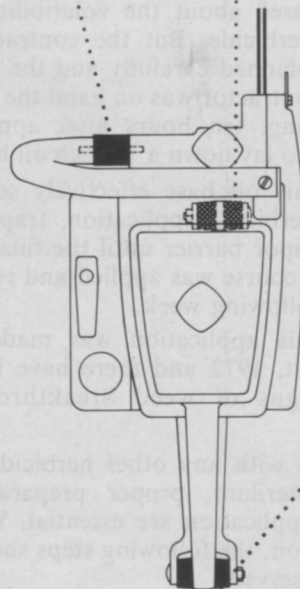


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judged by the following actual case histories:

- Casoron applied under 500,000 square feet of asphalt access roads on the Dominguez Channel in Torrance, Calif. To date, there has been no sign of road damage due to weed break-through.

- Applied to California State Highway road shoulders for Bermuda grass control prior to repaving. After 2 1/2 years, the area was repaved again with no need for additional weed control measures.

- Applied to a Los Angeles County Parks and Recreation Department basketball court prior to paving. After two years, the weed control was found to be excellent. Two breaks occurred on one edge of the treated area, but the pattern indicates a skip in the application, providing a good benchmark for the actual effectiveness of the treatment.

- Applied to a 70,000 square feet hospital parking lot in Delano, Calif. To date, there has been no sign of weed break-through.

The growing use of this herbicide under asphalt is an indicator in itself of the effectiveness and the economy of the herbicide. When properly applied under asphalt (at rates ranging from 20-24 pounds per acre for Casoron W-50 wettable powder), the cost is \$295.00 per acre not including application costs. . . . substantially less than other treatments.



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One reason for the overall economy is the simplicity and ease of application. As a wettable powder formulation, W-50 requires only 75 to 100 gallons of water per acre and minimal agitation.

This relatively small amount of water can be a big savings, particularly in arid regions where water must be hauled from a distant source with large equipment.

To get an idea of how the herbicide should be applied, let's take a look at an actual job and follow it through, step by step.

The job was a new seven-acre asphalt parking lot at Fresno City College in Fresno, Calif. The officials at the college and their architects specified a parking lot with islands of landscape vegetation coordinated with the campus landscape.

The contractor knew that the standard borate compounds were reliable but gave little or no safety to existing vegetation. Casoron was selected for the job.

The contractors, Western Exterminators, used W-50 wettable powder applied at the rate of 20 pounds of product in 100 gallons of water per acre.

Using a truck-mounted John Bean spray rig with 6 ft. hinged spray extensions, Western Exterminators was able to develop angular spray patterns along the parking lot curbs. This allowed the operators to keep the truck on the spray path for each pass up and down the parking lot.

Temperatures were extremely high (over 100°) on the day of the application and some concern was expressed about the volatility of the herbicide. But the contractors had planned carefully and the paving contractor was on hand the next morning, ten hours after application, to lay down a 1/8-inch oil base.

This oil base effectively sealed the herbicide application, trapping the vapor barrier until the final asphalt course was applied and rolled the following week.

This application was made in August, 1972 and there have been no signs of weed breakthrough since.

As with any other herbicide or soil sterilant, proper preparation and application are essential. With Casoron, the following steps should be observed:

- Prior to application, remove all small trees, brush and woody vines from the area to be treated. This can be accomplished by scalping the surface with a grader, blade, plow or disc. Re-compact the soil.

- Use calibrated application equipment to spread the herbicide uniformly over the entire area to be treated. Hand sprayers may be used to cover the hard-to-reach areas. Apply just prior to laying the asphalt course, or seal with a suitable oil base immediately after application.

- Do not mix Casoron formulations with asphalt primer or with the asphalt.

Specifics on the available CASORON formulations:

- G-10 is a granular formulation available in 8/16 mesh size and containing 10% active ingredient.

- G-4 is also a granular formulation available in either 8/16 or 16/30 mesh size and containing 4% active ingredient.

- W-50 is a wettable powder formulation for spraying. It contains 50% active ingredient.

With a product like this around, there's no reason for horticulturalists and paving contractors to do any more head-scratching when faced with the old question: Do we protect the paving . . . or the trees?



When the roots of an ornamental plant come into contact with the herbicide's vapor barrier, they simply stop growing in that direction, preventing damage to the asphalt covering. Since the roots will not systemically translocate or absorb the herbicide, no harm is done to the ornamental.



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says Delos A. Bailey, owner of Del-Mar Landscaping Service, Bloomington, Minn.



George Mann, left, and Chris Danielson, Del-Mar Landscaping Service, Bloomington, Minn., fertilize their customers' trees with Jobe's Tree Food Spikes.

“Good help is hard to get. Up here in Minneapolis we’re busy both summer and winter—with snow removal a big job in the winter. Mowing, tree and shrub planting, trimming and fertilizing keep us busy in the summer. That’s why we like Jobe’s Tree Food Spikes for fertilizing trees. The analysis is right—and they sure save time. Jobe’s are simple to use: just one spike per inch of trunk diameter.”

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Louisville Declares a Park Emergency

A group of Louisville, Ky. residents calling themselves Trees, Inc., have launched a massive effort to restore an 83-year-old park destroyed in the April 3rd tornado disaster.

Louisville, Kentucky residents are making it clear that the 90 acres of trees in their beautiful Cherokee Park, flattened by a tornado April 3, won't be down for long.

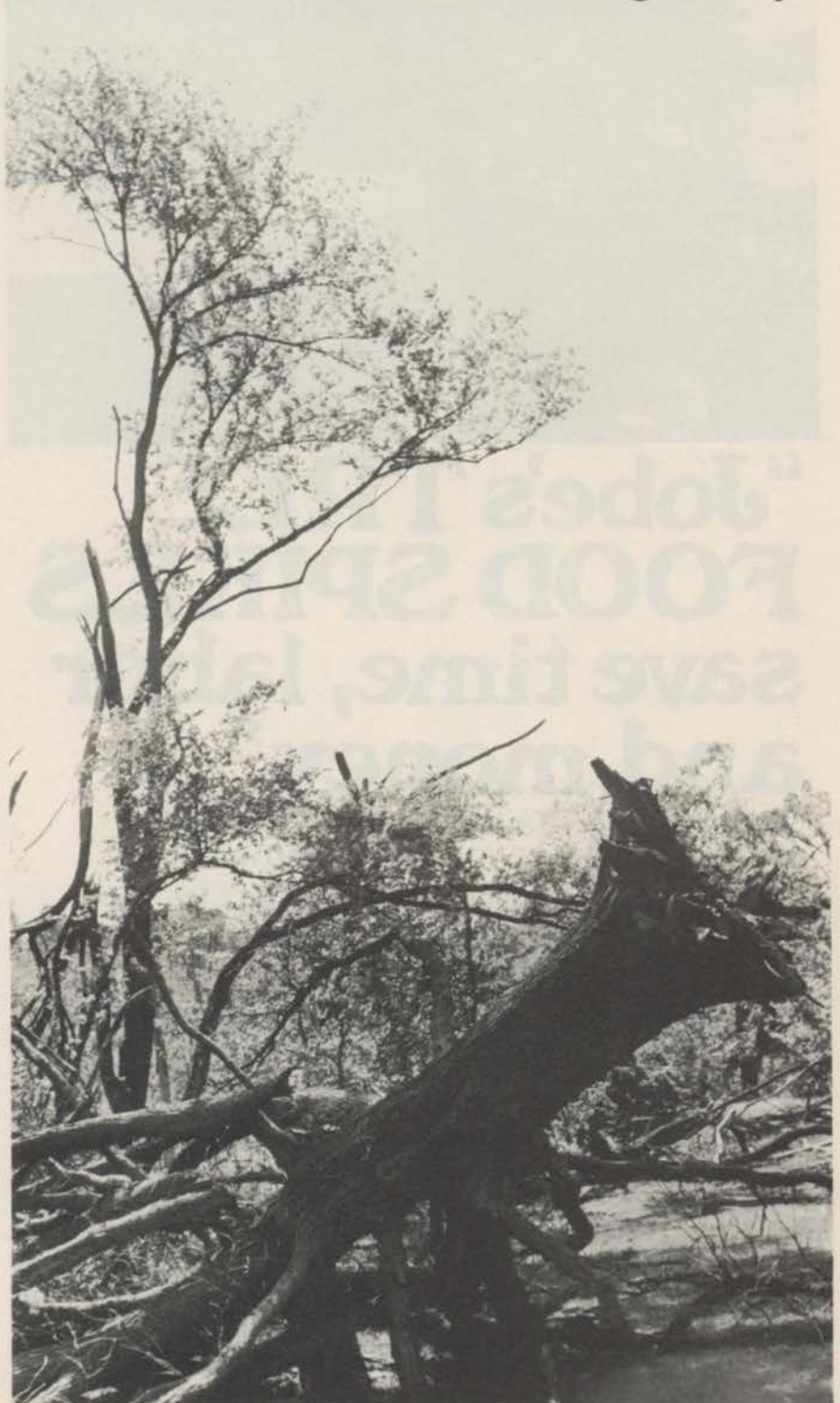
The park's nearly 400-total-acres makes it one of the largest in the nation. Planning for it began in 1891, ironically after a tornado destroyed a farm on the property in 1890 and the land was donated to the city for a park by its owners.

The current fund-drive for \$1 million to replace the 2,000 trees destroyed in the park began the night following the \$100 million Louisville disaster. If successful, excess money will be used to replace some of the 18,000 trees lost in various Louisville neighborhoods.

Barksdale F. Roberts, a bank vice president, recalls sitting in his home the night after the tornado listening to radio reports. It became clear to him that insurance companies and disaster agencies were taking care of the people, but nothing was being done for Cherokee Park.

The next day he discussed the formation of a fund-raising agency with Louisville attorney Ed Perry and businessman Dan Byck, and the three men approached Mayor Harvey I. Sloane.

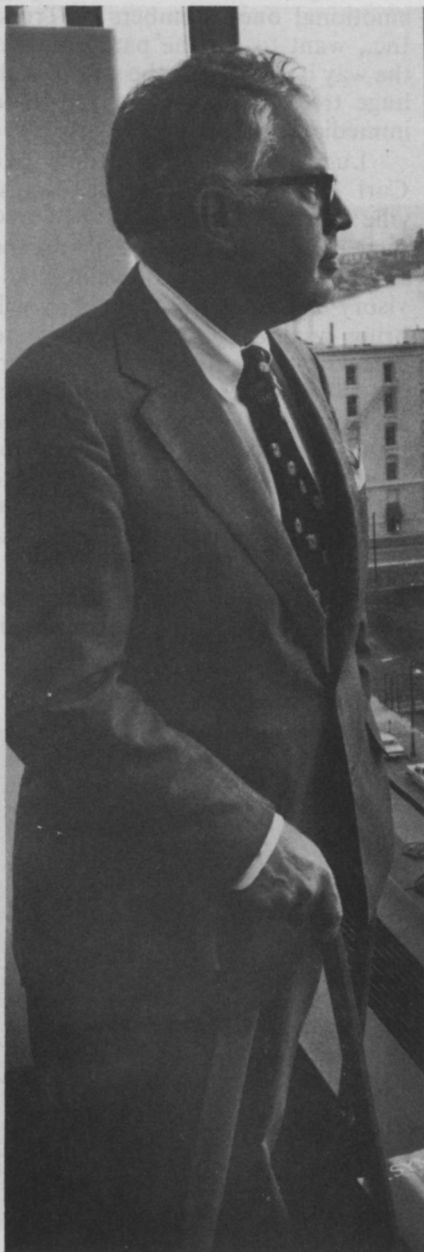
"We thought the raising of money should be kept separate from city government, and the mayor agreed," Roberts recalled in his 11th floor office of the First National Bank. With the mayor's blessing Roberts formed Trees, Inc., and assumed the presidency of the new organization. It began operation April 15.



Remnants of Cherokee Park's once beautiful trees await clean-up crews. Trees, Inc., hopes to restore the park to near-original condition.

and used to Louisville collecting both donated and purchased trees along the way. The Louisville Symphony Orchestra agreed to give a benefit performance May 18 with the \$5 admission fee going to Trees. The concert netted \$18,175 for Trees.

The mayor formed a restoration committee for the park, and Roberts named a member. The mayor's committee is working with a Boston city planning firm to develop recommendations for restoring the park after city work crews clear the rubble of fallen trees.

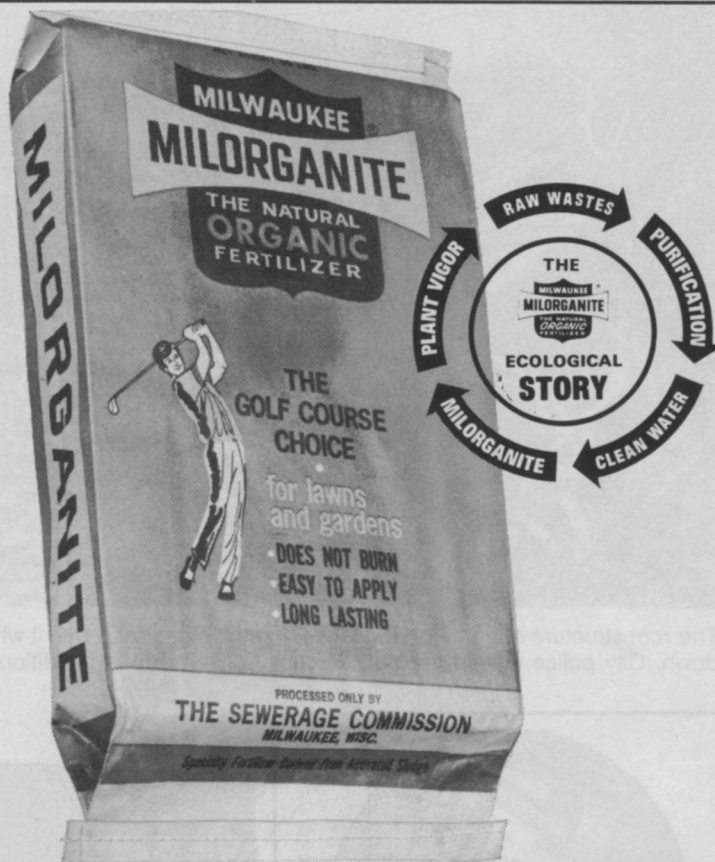


Barksdale F. Roberts, vice-president of a Louisville bank, gazes out his 11th floor office window and is reminded of the April 3 tornado disaster that led to his fund drive to restore the park's trees.

Trees, Inc., plans a nationwide campaign to attract donations of money and trees for their beloved park. The Louisville and Nashville Railroad has pledged free transportation for trees to Louisville from anywhere along its lines. (Persons

wanting information about the free transportation should write Trees, Inc., 304 W. Liberty St., Room 308, Louisville 40202.)

A "Tree Train" is planned for this fall. Tentative proposals suggest the train start in Birmingham, Ala.,



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The root structure of a tree on the left took most of the road with it when it was blown down. City police closed the park because of hazardous conditions such as this.

and travel to Louisville, collecting both donated and purchased trees along the way.

The Louisville Symphony Orchestra agreed to give a benefit performance May 18, with the \$5 admission fee going to Trees. The concert netted \$18,176 for Trees.

One event definitely planned is a non-ball. Louisville residents will receive invitations to a ball this summer that will never happen. In lieu of attending, those invited will be asked to donate \$25. The late-summer ball will be called "Gone With the Wind."

At the moment the issue of restoring Cherokee Park is a highly emotional one. Members of Trees, Inc., want to see the park restored the way it was before the storm, with huge trees, and they want it done immediately.

Luckily, there are people like Carl Ray, president of the Louisville Nurserymen Association and owner of Carl Ray Co. (landscape architects), on a professional advisory committee of Trees. Ray will bring anxious park lovers face to face with the hard realities of restoring 2,000 trees.

Ray said he plans to urge the group to purchase large trees for only the most critical portions of the park, such as around fountains or at park entrances. He will urge the use of seedlings in other areas.

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This is the way Cherokee Park looked in late March, when the last snowfall of the season made this pleasant scene. Photo courtesy of *Louisville Courier-Journal*.

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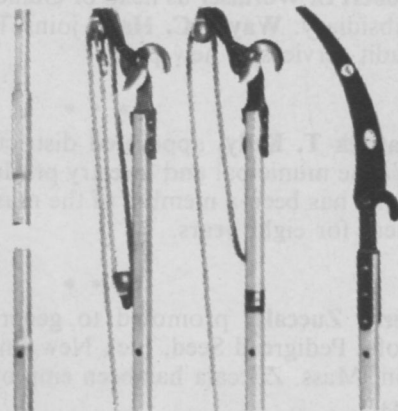
A city-wide golf tournament for teenage girls went on as scheduled at the golf course in the park, but there were new obstacles for the contestants. Pictured is one of the contestants.



Once beautiful trees were sold to the highest bidder at public auction and now await transportation by the buyers. These are only a few of the usable trees. It will be fall before all logs are cleared so replanting can begin. *(continued on page 36)*

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People on the move

David T. McLaughlin, president of Toro Co., succeeds **Robert S. Wormser** as head of Game Time, Inc., a Toro subsidiary. **Wayne C. Hald**, joins Toro as manager of audit services, a new post.

* * *

Patrick T. Kelly, appointed district sales manager for Wayne municipal and forestry products in the midwest. Kelly has been a member of the municipal sales department for eight years.

* * *

Jerry Zuccala, promoted to general manager of the Lofts Pedigreed Seed, Inc., New England Div., Arlington, Mass. Zuccala has been employed by Lofts for 13 years.

* * *

Purdy A. Outhouse, named agricultural chemical sales representative for TUCO, Division of the Upjohn Co. His territory includes the New England states and New York.

* * *

Daniel P. Boyd, named director of OSHA's Office of Standards Development and **Donald V. Lassiter**, appointed special assistant for occupational health to Alexander Reis.

Albert S. Eddins, appointed national sales manager, agricultural products, Velsicol Chemical Corp. He was previously employed as area manager of the Arizona division of Wilbur Ellis Co.

* * *

Dr. Edward L. Chandler, named administrator of the Bartlett Tree Research Labs, Pineville, N.C. Chandler will be responsible for all operations of the lab, including the plant pathology, plant physiology and entomology departments.

* * *

Emre Bleier, appointed business manager, process chemicals department, for the Nopco Chemical Div. of Diamond Shamrock Chemical Co. In other company moves **Gregory K. Staff**, promoted technical sales representative, process industries department.

* * *

J. Calvin Affleck, retires as advertising manager of the pipe and plastics group of Certain-teed Products Corp., Valley Forge, Pa. Affleck has been an advertising executive at the company since 1963.

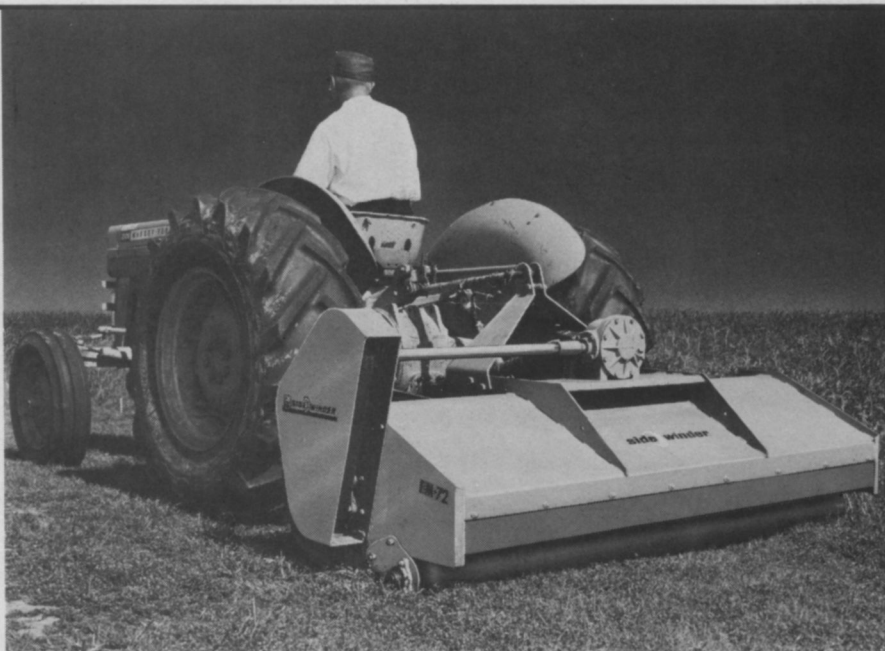
* * *

Larry Estea, named chief engineer for the new Indianapolis plant of the Hesston Corporation's Lawn Equipment Div. **Lawrence S. Ruble**, appointed field test manager and **Allen K. Lindseth**, named service manager.

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