

# Capability!

Five years of development and more than three years of extensive nationwide on-site testing in non-crop areas have proven SPIKE

highly effective in the control of a wide spectrum of vegetation, including many of the so-called hard-to-control species. SPIKE effectively controls many tough perennials, as well as many woody brush and vine-type species that escape other control products.



Dead common mullein along right-of-way is a dramatic example of SPIKE's effectiveness on tough-to-control species.



Commercially-applied test plot demonstrates SPIKE's ability to eliminate persistent varieties such as Bouncing Bet.

# Suitability!

Because of SPIKE's features

- Less pounds last longer
- Gets most tough to control weeds and brush
- Gets most tenacious woody vines and brambles
  - Is remarkably resistant to leaching and lateral movement



... SPIKE belongs in your total vegetation program.

"Before" and "after" views of the same test plot clearly demonstrate SPIKE's ability to control brush and woody vegetation.

# Dependability!

... that's what all of SPIKE'S abilities add up to. SPIKE is a proven total vegetation control product that is truly tough on weeds! What's your tough vegetation control problem? Whatever it is, consider SPIKE an essential weapon in your chemical arsenal. Contact your ELANCO distributor for full details on SPIKE ... the tough one for total vegetation control!

**ELANCO**

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Is your new bluegrass plagued with weeds?

# FYLKING IS PURE.

The famous Swedish beauty, Fylking Kentucky bluegrass seed contains no annual bluegrass (*Poa annua*), bentgrass or short-awned foxtail. Strict controls and countless inspections guarantee the physical purity and genetically true seed typical of Fylking Kentucky bluegrass. These procedures make your seed dollars go farther. Fylking is one of the lowest priced elite bluegrass seeds on the market.

Fylking, used as the backbone of your seed mix, will produce a lawn that will make you proud. Fast germination and growth, development of a dense, compact rhizome and root system, make Fylking a natural choice. Low-growing, low-mowing (low as 1/2 inch), more disease, drought, smog and traffic resistant. Fylking is persistent, brilliant green from early spring to late fall.

For a purely beautiful, tough turf, specify Fylking Kentucky bluegrass. Available at your local wholesale seed or sod distributor.



**FYLKING  
KENTUCKY  
BLUEGRASS**

U.S. Plant Patent 2887

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of Jacklin Seed Company.

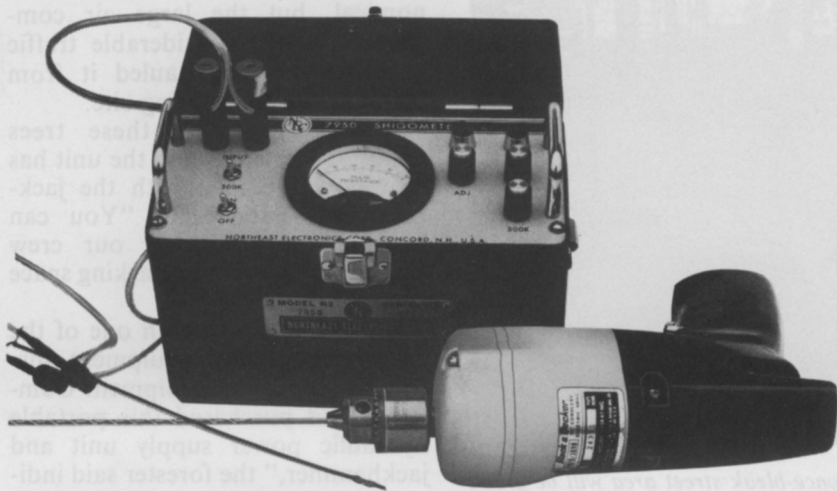


Fylking plants started from "original" breeder's seed in sterile greenhouse media are transplanted to fumigated soil in isolated breeders block for seed increase.



Individually harvested, progeny seed from each original "mother plant" is cross tested for genetic purity. Physical and genetic purity are carefully maintained by constant evaluation, chemical spot roguing and physical removal.

# NEW ELECTRONICALLY ACCURATE TREE AND POLE DISCOLORATION & DECAY DETECTION



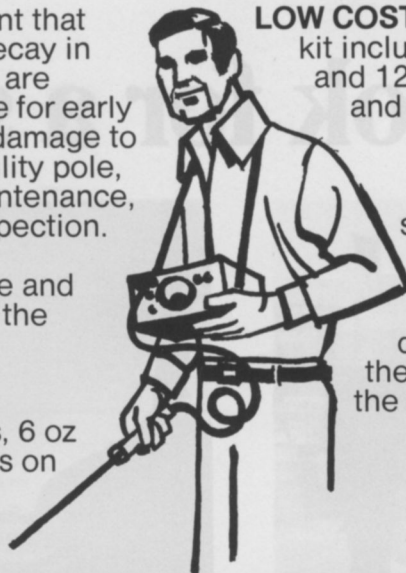
A practical, low cost instrument that pinpoints discoloration and decay in their early stages before they are evident externally. Allows time for early treatment or removal before damage to surrounding area. Ideal for utility pole, park, and recreation area maintenance, and forestry research and inspection.

**EASY TO USE** Just drill a hole and probe...the Shigometer tells the story.

**LIGHTWEIGHT, PORTABLE**  
Shigometer weighs only 3 lbs, 6 oz ...drill and bit weight depends on model selected.

**LOW COST, BATTERY OPERATED** Complete kit including Shigometer, two 3/32" bits 8" and 12" long, four 8" and two 12" probes, and portable, cordless drill \$414.95. Kit without drill \$350.00.

The Shigometer is an extremely sensitive instrument that accurately measures any amount of ionization to provide detection of both incipient and advanced decay and discoloration. Shigometer indicates the degree of tissue deterioration and the extent of tissue damage. Complete instruction manual and 12 month warranty included with each Shigometer.



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**CITY BEAUTIFICATION** projects have enjoyed considerable popularity the past dozen years. And with bicentennial spirits now at a peak, most communities have initiated beautification projects, however small, in hopes of putting some "civic pride" back into an apathetic public.

The projects vary with the individual community but one of the more popular ones has been the planting of street trees in otherwise bleak surroundings. But those bleak areas are tree-less for obvious reasons. They're wall-to-wall concrete. No one has yet devised a tree-spade capable of planting through concrete, nor do most communities have a large enough budget to warrant major reconstruction of sidewalks.

So, with some of the more obvious and also ridiculous solutions ruled out, city beautification committees are still faced with the problem of how to plant trees in this sea of asphalt. One popular method has been the construction of large concrete planter boxes. The two-ton planters are filled with soil and a tree is planted within.

"Trees soon become root-bound in concrete planters, plus the boxes take up a lot of space on these al-



*This once-bleak street area will be green and alive in years to come as these young trees grow and leaf out.*

ready narrow sidewalks," said Emerich Sabo, pointing down the street at a seemingly endless row of utility poles, parking meters, mailboxes, and trash cans. Sabo is city forester for Cleveland Heights, Ohio; and has been for 10 years.

"We had to come up with an economical and practical method for planting trees in the commercial areas right through the concrete," he told WEEDS TREES & TURF. His first approach was to borrow the street department's trailer-mounted air compressor and jackhammer. This made the job economical, but the large air compressor caused considerable traffic problems as they hauled it from planting site to planting site.

"We're planting these trees about 35 feet apart and the unit has to follow the man with the jackhammer," Sabo said. "You can imagine the confusion our crew caused trying to find a parking space every 35 feet."

"I got in touch with one of the local construction equipment distributors, Gibson Equipment Company, and purchased this portable hydraulic power supply unit and jackhammer," the forester said indicating to a rather small looking unit

*(continued)*

## New look for a street



*Two crew members prepare to chisel a hole through the sidewalk. The portable hydraulic unit is wheeled into position.*



*After the sidewalk has been scored and cut, the jackhammer is used to break-up the concrete.*

# JOHN DEERE MAKES TRACTORS FOR JOBS OF ALL SIZES. BECAUSE YOU CAN MAKE MONEY ON JOBS OF ALL SIZES.



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\*Maximum PTO horsepower measured at 2,500 engine rpm (factory observed).



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**LOOK** (from page 14)

two of his crew members had just placed on the sidewalk. "With this outfit, after the first hole is cut, one man of our three man crew can roll the unit ahead and start on the next hole while the other two men put the finishing touches on the newly planted tree."

And all the industry murmurs about the handiness of hydraulics have been true for Sabo. After the hole is scored on the concrete surface, a gasoline-powered Stihl saw with a special bar and blade attachment is used to cut through the concrete. The hydraulic-powered pavement breaker breaks up the inside square section of cement and the pieces are shoveled out of the hole.

The power unit and pavement breaker are manufactured by

Worthington. Sabo says another advantage of the hydraulic system is its quietness.

In a normal working day, the three-man crew can plant eight trees, according to Sabo. The planting season for Sabo and his crew ranges from fall to spring. "We shovel the snow off the planting site and plant trees right through the winter," he added.

Working out the mechanical part of planting the trees proved to be a simple task compared to what happened when Sabo began planting the trees. The local merchants didn't see the same virtues in the planting project that Sabo did. He resorted to hard-sell tactics.

"When they heard we are going to plant trees in front of their stores, most merchants thought the trees

would cover-up their store fronts as they grew bigger and branched out," he said. His second job was to convince the merchants that the variety of trees he was planting would not conceal their stores from passing motorists.

Sabo selected two oval-shaped varieties for the project; the Little Leaf Linden and the Emerald Queen variety of Maple. Characteristically these varieties obtain a somewhat columnar shape enhancing the neighborhood and providing an unobstructed view of the store-front area.

The total tree planting project, when completed, will include some 300 trees. And at a cost of about \$75 per tree planted, that's a reasonable price to create a spirit of pride in the neighborhood and bring business back downtown. □



Sabo (right) and one of his crew members position the new tree. The trees seem to do very well when planted in this manner, according to Sabo.

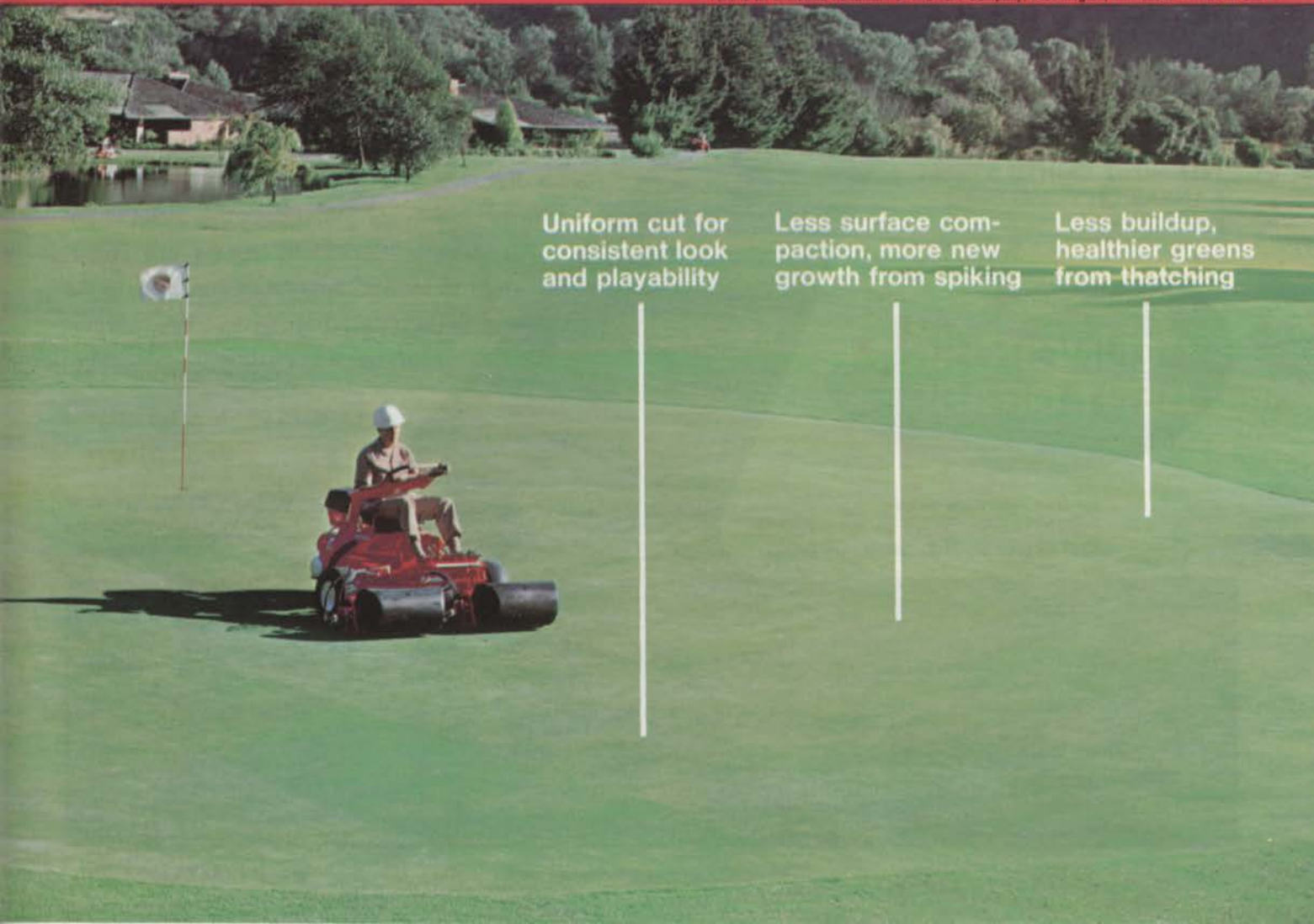


The finishing touches are put on one of the newly planted trees. Before Sabo's crew leaves a planting site, they remove all debris.

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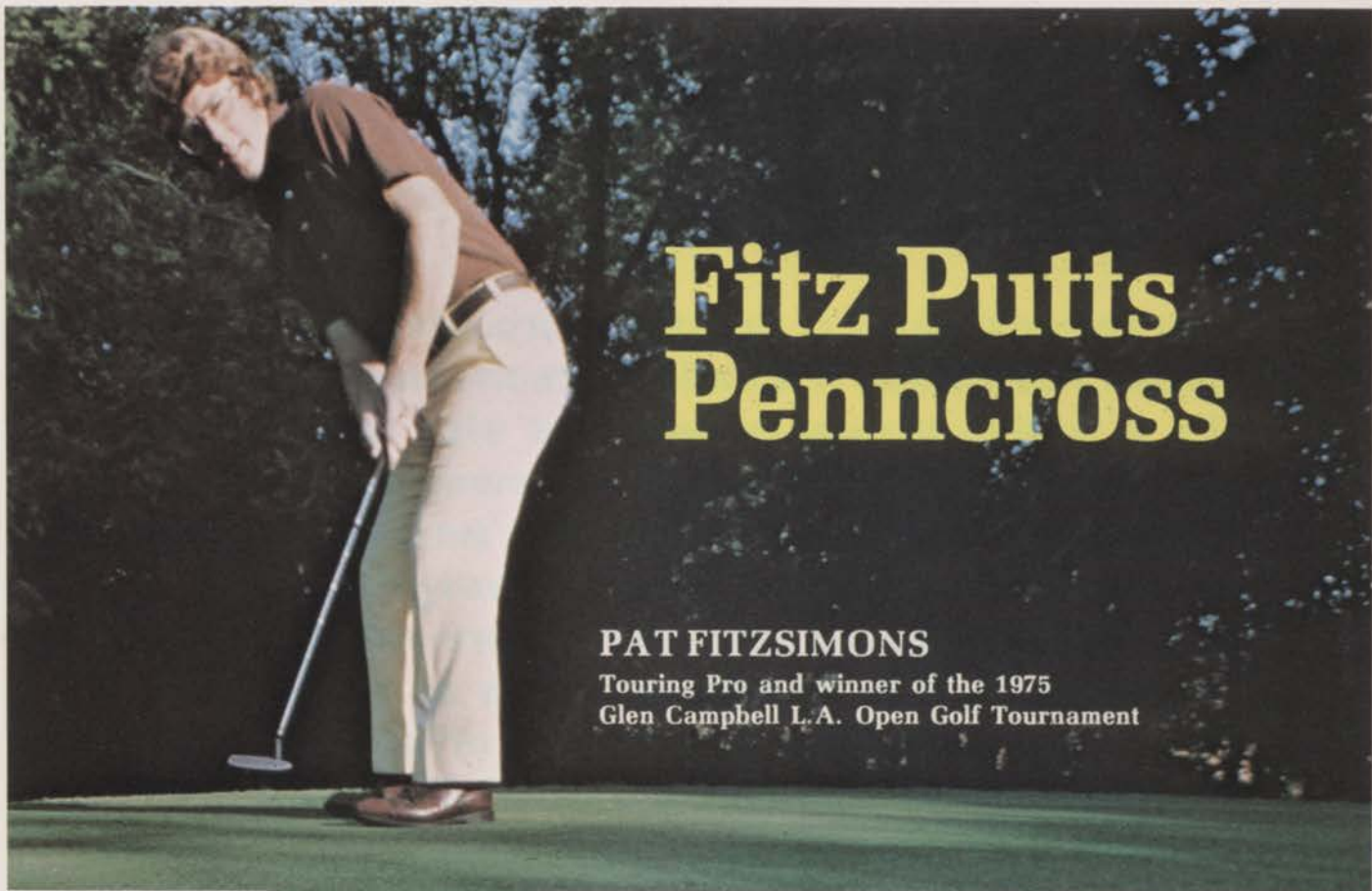


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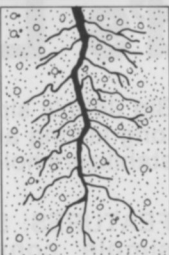
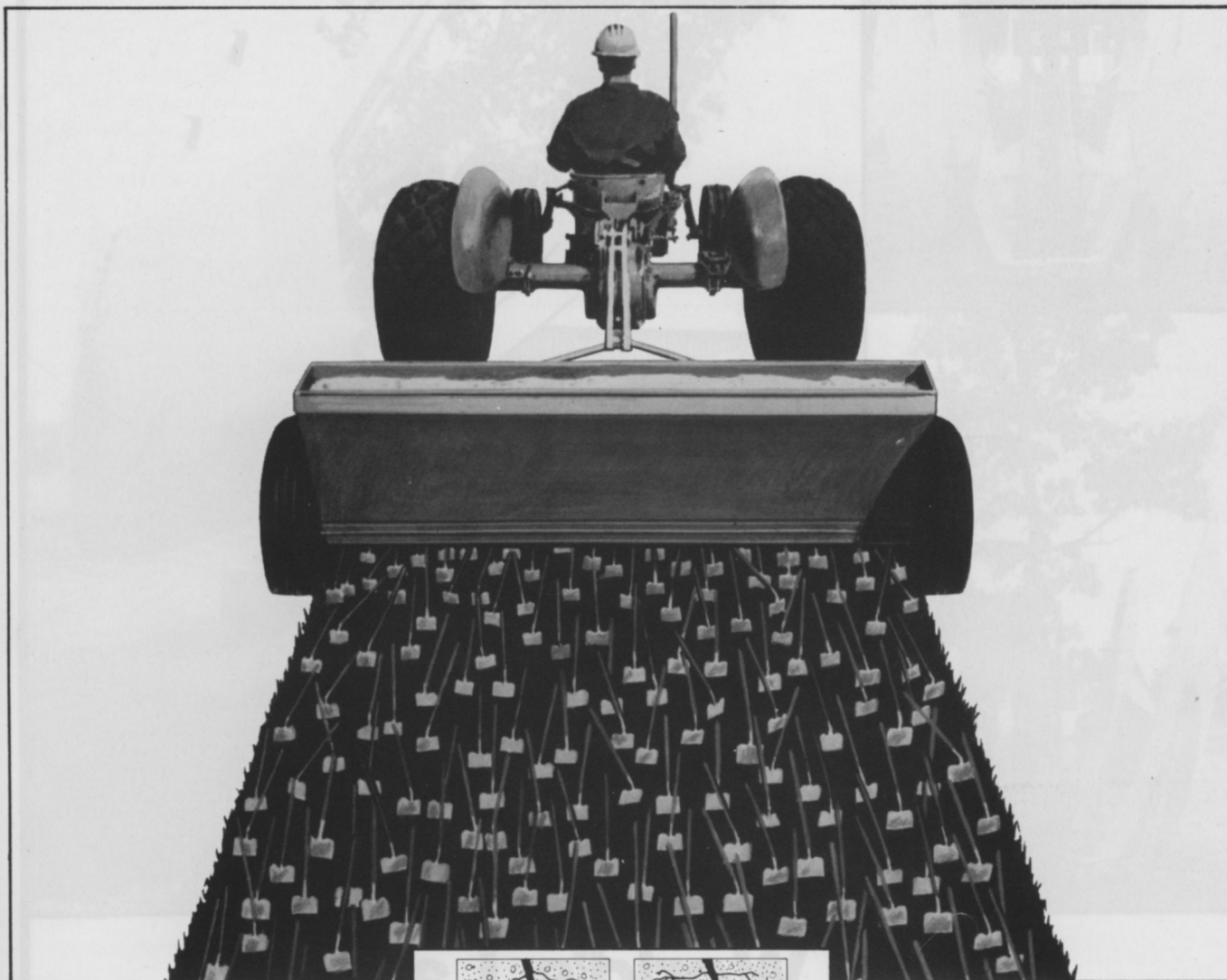
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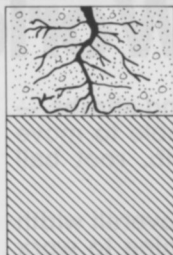


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## Big John Tree Transplanter

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THE VINTAGE World War II bombers flew into the early morning darkness of northern Maine last spring to lead the attack in "The Battle of The Budworm." Loaded with insecticide instead of bombs, the planes were the tools Maine foresters used to combat the ravenous spruce budworm in the largest insecticide spray project the federal government and the State of Maine have ever mounted. This "heavy weapon" strategy is necessary, officials say, because the budworm infestation threatens to destroy nearly six million acres of northern Maine's valuable spruce and fir forest. Natural controls have not stopped the outbreak and the mushrooming worm populations are leading to even more dire predictions in the future.

The spruce budworm is a small brown moth which has been around northeastern forests for a long time — epidemics having been reported as far back as 1770. The most recent severe infestation, in 1910-1919, destroyed 27,000,000 cords of valuable spruce and fir timber. The pulp and lumber industry is Maine's most valued resource, contributing 39% of the state's economy, and the present budworm epidemic threatens to cripple it. This catastrophe would also pose problems for the many related industries dependent on this wood.

But losses of lumber are not the only consequences of budworm feeding. The recreational value of the Maine wilderness is also in jeopardy due to defoliation. Consider, too, the potential upset of the forest ecosystem: forests act as watersheds and, with a major reduction of trees, surface runoff can cause floods and erosion, further threatening the forest. Forest fires would become a more potential danger due to the number of standing defoliated and dead trees. Wildlife may also be endangered because it depends dearly on the forests for shelter, food and water.

The budworm does its damage by feeding on the buds and needles of spruce and fir trees, the fir being

# Battle of the Budworm



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*John Chadwick, director of the Presque Isle, Maine, operation terms the present spruce budworm epidemic "massive."*



## One observer noted that this past July, moth flights were so severe that they literally had to be scraped off the roads with snow plows.

its preferred host. Early in May, the tiny larva emerges from its overwintering site called a "hibernaculum," a cocoon-like shelter on the branch of its host tree. Larval development is in six stages or "instars," each separated by a molt. The first or smallest instar occurs the previous fall and the larva overwinters in the second instar. After emerging in the spring, the larva tunnels into a spruce or fir needle and feeds by consuming the tissues within the needle. In severe epidemics such as the present one, hardly a bud or shoot can be found with no insect feeding on it. In the sixth and largest instar, the budworm larva eats more foliage than in all the previous stages put together.

In late June, the budworm pu-

pates and emerges two weeks later as a moth. These brown moths begin to lay eggs in July. Eggs are laid in masses of about twenty, and each moth can lay up to 200 eggs in its one year life cycle. Two weeks after ovaposition, the eggs hatch and the first instar larvae spin their hibernaculum to spend the winter and begin the cycle again.

One observer noted that this past July, moth flights were so severe that they literally had to be scraped off the road with snow plows. A cloud of the insects traced by the weather bureau radar measured 64 miles long by 16 miles wide.

Control problems are compounded by the fact that many new moths are brought down on winds from Canada where over 100 million acres of forest are infested and serve as reservoirs for reinfestation in the U.S.

"The budworm infestation is

massive," says John Chadwick, Director of the Presque Isle based spray operation, "and our control efforts are really a holding action. We can't hope to eradicate the budworm, but we are trying to keep those trees alive." Infested trees will die after two to three years of feeding and are salvageable for only a few more. Efforts are directed at controlling the moth in the fourth or fifth instar, or before the major amount of damage is done.

"We're talking about one to two hundred years for recycling these forests," Chadwick continues, "so we can't afford to let these trees die in the face of population pressures and use factors of the forest."

Spraying operations began in 1958 with the use of DDT on 320,000 acres. This chemical was restricted in Maine in 1967 and foresters began searching for new less

(continued on page 46)

*Above: A vintage World War II bomber makes a solo pass over the budworm infested forest lands of Maine.*