

AUGUST, 1970

WEEDS TREES and TURF



SHADE TREE ISSUE

TREE SCENE IN BRITAIN • ASPLUNDA TREE EXPERT COMPANY
LANDSCAPE CONSTRUCTION / MAINTENANCE

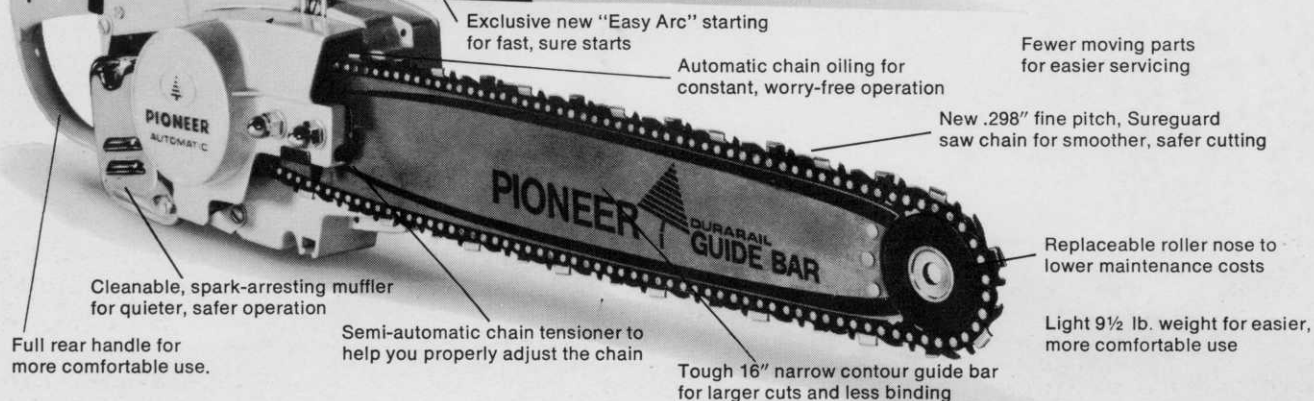
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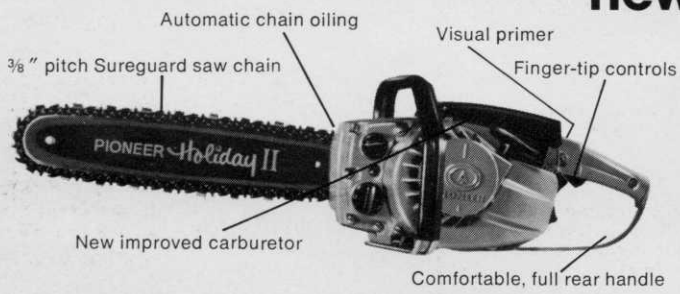
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This giant in the tree industry has grown by meeting the vegetation maintenance challenges presented by electric and telephone utility companies, says Lester Asplundh, present chief executive officer.
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The Cover

When utility line-clearing began to mechanize, Asplundh Tree Expert Company, Jenkintown, Pa., had to pioneer in design, then get into manufacturing to get the kind of equipment it wanted. Factories for the two major products, lift trucks and brush chippers, are a Chalfont, Pa. Manufacturing has since been expanded to provide equipment for utilities, municipalities, and other companies engaged in tree maintenance work. Asplundh makes a standardized line of truck bodies for quick delivery, or builds units to customer specification. The Asplundh story begins on page 8.



WEEDS TREES and TURF®

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Needed Accessory for Lawmakers — Backup Lights

ONE WAY you can tell the difference between Israeli and Egyptian tanks, the story goes, is that the Egyptian tanks have backup lights. Depending on your politics, the story may be funny.

Politics and fighting ability aside—and if the story were true—there would be a lesson worth studying. The presence of backup lights would indicate preparedness on the part of the Egyptians to make an abrupt change of direction, if and when they decided they had made a mistake.

We believe a most-needed accessory for lawmakers today is “backup lights.”

Contrary to what many people are saying, we believe the Democratic process is working better today than at any time since the idea was conceived. Contrary to what many young people are saying, we believe “The Establishment” is quicker to respond than ever before to pressure from any quarter, no matter how small.

Cry wolf (for real or fake) these days and the rattle of legislative bills would drown out a buffalo stampede.

Consider the legislative outbursts over thalidomide, the cranberry episode, automobile safety, gun control, cigarets and cancer, prayer and public schools, civil rights (in recent years), individual rights of citizens in trouble with the law, cyclamates, pesticides, and now with increasing momentum pollution of various sorts.

Responsiveness of government to people makes the Democratic process that much stronger.

The great failing to date, however, is the assumption that every law that goes on the books is good; that every law that goes on the books should remain there for eternity.

Let's face the reality that some laws are mistakes. We need to back up. Let's face the reality that while some laws served a purpose in an earlier day they need to be wiped off the books.

Though ignored and pretty much harmless, the “blue laws” are an example. Unless lawmakers have backed up in the last year or two, it's still illegal to eat peanuts in church in Massachusetts. Barbers in Waterloo, Neb., are breaking the law if they eat onions between 7 a.m. and 7 p.m.

Some new laws have been mistakes. The outright ban on DDT is a mistake. The restriction on 2,4,5-T is a mistake. Stack the arguments high, but they boil down to a laboratory test and emotion prevailing over more than 20 years' field experience.

Given the possibility that DDT is contributing to the extinction of the eagle, falcon, and osprey, we predict these bird species would have become extinct anyway. And we hate very much to see them go.

Subtract the human element from DDT and

there's still a defense strong enough to warrant its continued use in some areas. Take the American Elm.

If we must sacrifice the American Elm species to save the bird species, we vote to back up. The tree has given us beauty, shelter, enjoyment, purified air, coolness from its shade in summer, and warmth in winter from its logs in a fireplace. What wild bird has done so much?

A trip to Washington, D.C., a few weeks ago reminded us of how different and beautiful that city is compared with all others. A great contribution to that beauty is its elm trees. The species accounts for well over 90% of all trees growing there. Some date from 1890.

We noted several trees dead and dying from Dutch Elm Disease. We were concerned. Reassurance came from Horace V. Wester, plant pathologist of the National Park Service, who told us DED has been in Washington since 1947 and that he loses only about 1% of the elms a year. Remarkable! Some District parks, he said, were being treated with DDT until about a year ago, though he switched to using methoxychlor four or five years ago.

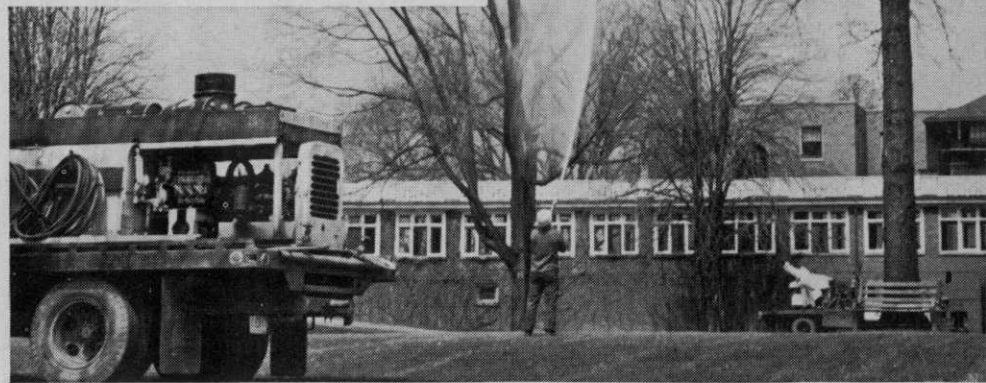
Just the same, if the situation gets worse, we would like to think he could return to his best weapon—DDT!

The announcement that an additive has been developed to break down DDT (see story on page 36) is heartening. Spurring that research could mean a great deal to cities, such as Kansas City and Denver, that haven't had as much success against DED. The pesticide is desperately needed to hold the line until a cure for the fungus is found.

But back to lawmaking, generally. There are many who would say that if we backed up in some of those areas previously mentioned more criminals would be behind bars. Some would call for backing up on Civil Rights, meaning to some more integration and to others more segregation. Perhaps if we had more prayer in public schools, we would have fewer drugs and riots.

There is more than a need for backing up on the subject of pesticides. There has been too much responsiveness—and to the wrong kind of pressure. Other pesticides are under fire. Before acting, what's needed is a careful weighing of benefit versus risk and more value placed on field experience than on laboratory improvisation. Then, perhaps, there won't be a need for those backup lights.

Gene Ingalsbe



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California Botanist Defends 2,4,5-T

As a plant physiologist, I must dispute (Arthur W.) Galston's againstness of 2,4,5-T (June WTT).

He does not seem aware of the vast good which has been derived from the use and relative safety of this compound judged by more than 20 years of use.

I doubt whether he has had

straight formulated material in his eyes (as I have inadvertently, and no chance to wash it out), nor somewhat covered by it in hundreds of field trials over the span of 20 years.

He is a laboratory physiologist, while I am both a laboratory and field physiologist. I believe there

is a real danger of being "too" much in the laboratory and not understand field problems.

For those of us interested in benefits to mankind versus hazards, we do not naively say that more research should be done before 2,4,5-T is used. Imagine saying such a thing after 20-some years of research and safe usage!

He should recognize that our present life span is far greater than it was before this age of science, and that there is no evidence that pesticides have reduced average life span.

He talks about honey used in Bionetics work without commenting on it being a non-specific material. If it comes from *Aesculus*, and some other genera, it can contain substances toxic to bees; they don't survive due to birth defects. Why does he defend the use of honey in Bionetics work when it is an unknown material? Is it safe? From what source did it come in this research? I admit these are trivial questions, but no more trivial than the questions about 2,4,5-T.

Also, 2,4,5-T is a patent-expired compound, which he surely must be aware, so that no great commercial defense is possible. It remains for us who know how valuable and safe it really is to defend it (and we are mainly public employees). It is up to us to protect the millions of people who use it (for their benefit) against the nonsense of non-relevant research.

I have used 2,4,5-T through the years, and it has not greatly affected my own life span, even if I should not survive longer (and I have been exposed to it greatly in excess that of the general public).

So let us be relevant about these things, be realistic, weigh benefits against possible hazards, and not opposed because we are angry (such as the war in Vietnam, which I, too, am against).

If we don't follow this course, our whole society will fail because we are too unrealistic to maintain a functioning civilization. — **OLIVER A. LEONARD**, botanist, University of California, Davis.



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Along Electric and Telephone Utilities' Rights-of-Way Grew

ASPLUNDH



THE LARGEST TREE COMPANY in the world couldn't have a better name: Asplundh Tree Expert Company.

"In Swedish, *asplund* means 'grove of aspens,'" explained Lester Asplundh, chairman of the board and chief executive officer.

What's the "h" for? His answer will provide a quick chuckle and an insight to the Asplundh wit.

Without question, it took a great deal of that kind of wit, along with the necessary other talents, to bring the company to where it is in 42 years.

A grove of Asplundhs are active in the company—eight altogether. They are one founder, his sons,

and the sons of the other two founders.

Asplundh Tree Expert Company has pioneered time and again, establishing a string of firsts, produced from the experience of having constantly to develop and improve equipment. Self-initiative to innovate has been a family tradition, almost by necessity.

Lester, one of eight children, was two years old when his father died. Yet, all but one earned a college degree. The one that didn't gets credit for planting the seed that grew into Asplundh Tree Expert Company.

"O. E. started trimming trees," recounted Lester Asplundh. "Later he added a nursery. All the As-

plundh men learned tree-trimming from him."

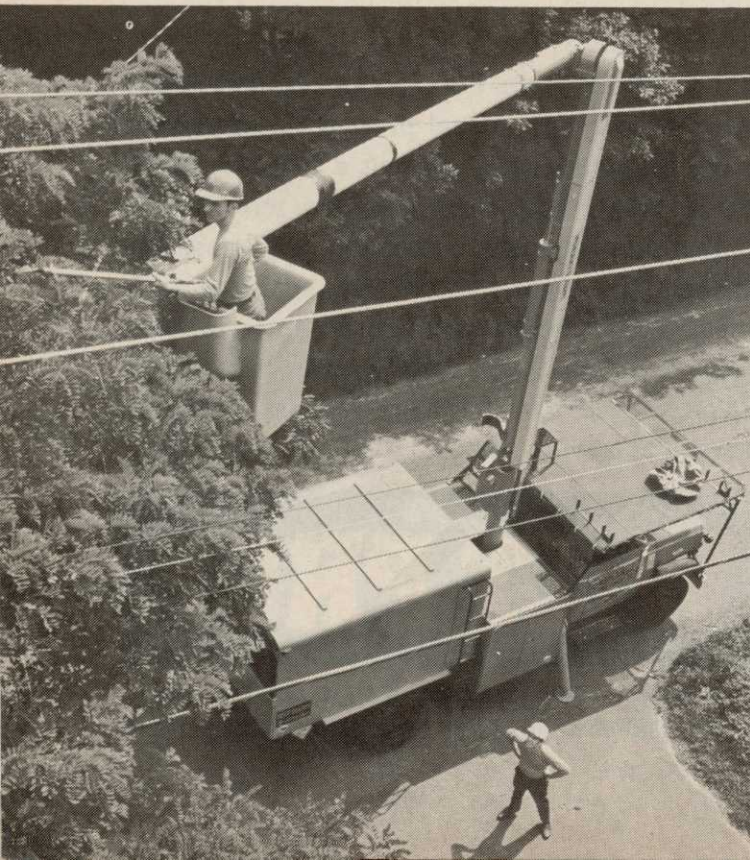
A misunderstanding with a property owner over whether permission had been obtained to trim his trees led to the actual formation of the present company. Because of that incident, "we decided to form a new company to serve only utilities."

He was talking about Griffith Asplundh, whose degree was in forestry, and Carl, whose degree specialty was finance. Lester's is electrical engineering. Griffith died in 1948 and Carl in 1967.

"We felt our training made a good combination," he said.

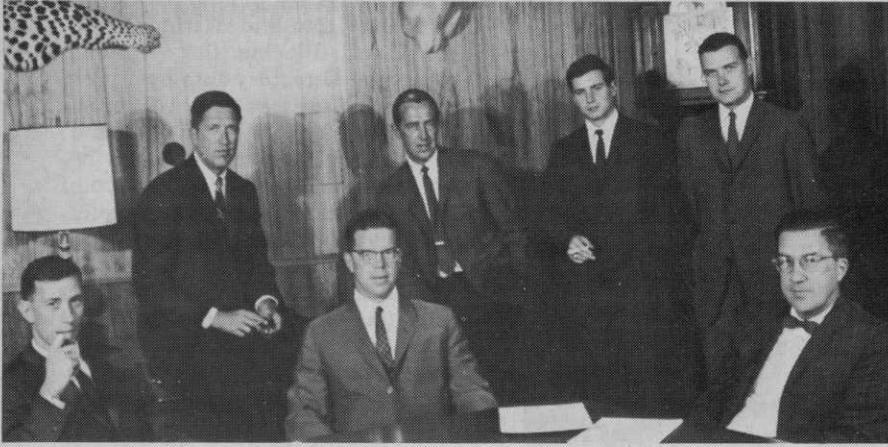
It apparently did; although Lester Asplundh cited another major factor behind the company's good

Three Asplundh firsts can be seen here: the insulated Spiralloy upper and lower boom, the boltaron covering on the upper boom, and the polyethylene insulated basket liner.



A pioneer in chemical brush control, Asplundh uses equipment that ranges from helicopters to rugged terrain vehicles to this backpack unit for selective basal stem spraying.





Lester Asplundh, on the preceding page, is the present chief executive officer. He is the co-founder with Griffith and Carl, Sr. Lester Asplundh was president from 1949-52 and has been board chairman since 1963. The grove of Asplundhs active in the business are, from left Carl, Jr., Robert, Paul, Barr (President since 1968), Christopher, Edward and Boyd. Bob and Boyd are sons of Lester; Barr and Paul, sons of Griffith; and Christopher, Carl, Jr., and Edward, sons of Carl.

By GENE INGALSBE

fortunes, writing in a brochure a couple of years ago.

"There is no doubt this spectacular growth has been inspired by our close association with two of America's most dynamic industries: The electric and telephone utilities, whose progressive programs have been a challenge to us."

The need for service in 1928, he said, was "to keep tree limbs from brushing lines. It created static on the radio sets, and people complained. Another need was to trim so limbs wouldn't knock down street lights during a storm."

What Asplundh Does

The Great Depression was the company's first birthday present

("so we didn't eat very well for a couple of years"), but then as utilities' needs multiplied, so did Asplundh operations. These now include:

—**LINE CLEARANCE**, accounting for 80% of the total sales volume, and fastest-growing operation.

—**RIGHT-OF-WAY CLEARING**, conducted through a subsidiary, Asplundh Brush Control Company.

—**HELICOPTER SERVICES**, through affiliate, Asplundh Aviation, Inc., established in 1966, to include helicopter spray service and "Thermovision" (an industry first), an infrared system of detecting hot spots, and deteriorating and faulty installations along transmission lines:

—**MANUFACTURING**, of line lifts, tree-trimming trucks, and brush chippers; tree wound paint, pole-treatment compound, and a weed and grass killer.

—**SERVICE CENTERS**, 16 of them across the nation, to provide maintenance and parts for Asplundh's own vehicle and equipment fleet and utility customers.

—**ELECTRIC AND TELEPHONE UNDERGROUND**, a service inaugurated about six years ago, recognizing the industry trend toward going underground with new construction in urban areas.

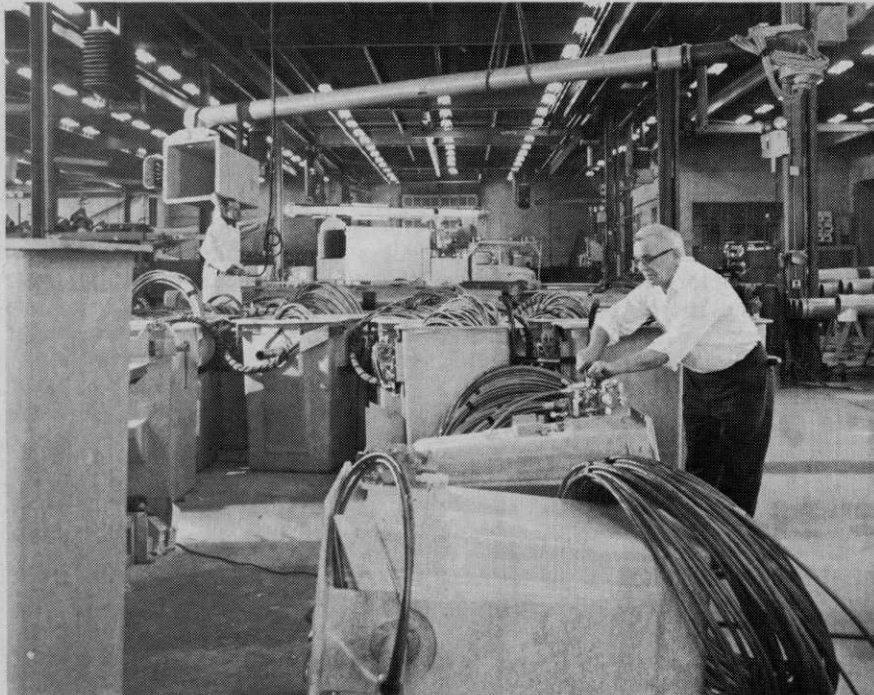
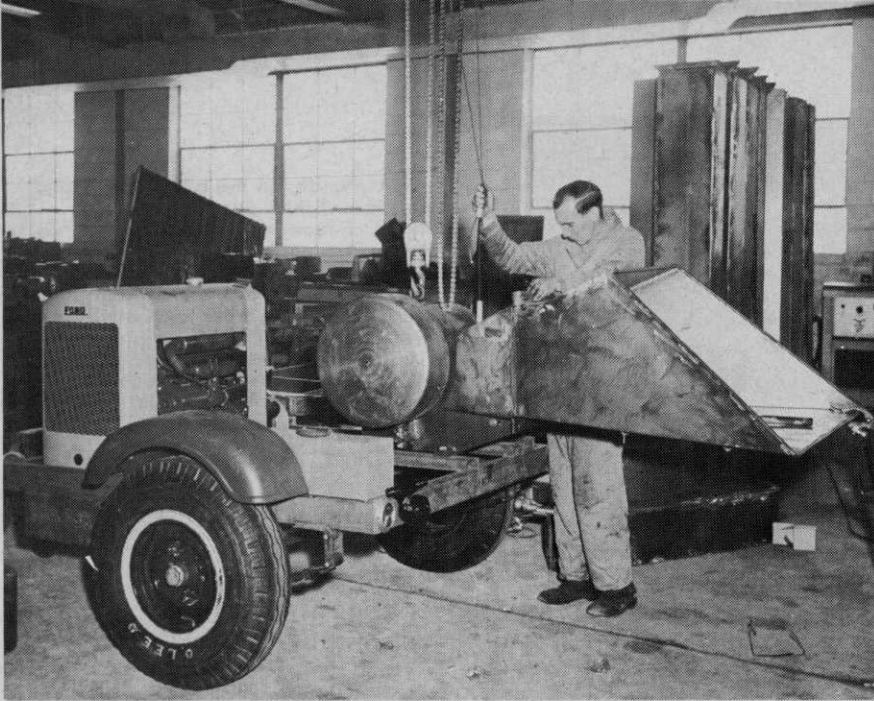
—**CABLE TREATING**, a method of sealing lead cables with a plastic coating to prevent deterioration.

—**EMERGENCY TREE SERVICE**, demonstrated most recently when

Perhaps no other single picture illustrates better the capability of Asplundh Tree Expert Company. Line clearance, rather than right-of-way clearing, however, is Asplundh's forte.

Asplundh's fleet of helicopters includes this FH1100 jet helicopter. Air services, such as line inspection and right-of-way spraying, are conducted through a subsidiary, Asplundh Aviation, Inc.





Hurricane Camille flattened the Gulf Coast. Placing the Asplundh Emergency Directory into operation, the central office had 100 crews (600 persons) from eight surrounding states rushing to the scene before the storm abated. At one point in Louisiana, 96 pieces of equipment and 87 power saws worked around the clock.

Asplundh provides training programs for all aspects of field work; public relations programs, for employees in the form of "The Asplundh Tree" magazine, and material for the general public, a most recent example entitled "We're Partners in Environmental Management" to counter critics of pesticides; a national advertising program, including multiple-insertion, four-color page advertising.

A billing department that processes about 2,000 invoices per week, 60% on IBM machines.

Summed up: "75% people and 25% machines."

Industry Firsts

Asplundh firsts? Among them:

A brush saw and the brush chipper. Large-scale chemical brush control for line rights-of-way. Insulated upper boom on a line lift, through the use of Spiralloy, then a Spiralloy insert for the lower boom. Insulated polythelene basket liners for line lift bucket. Aerosol packaged tree inhibitor paint with applicator pole. Production of standardized bodies for line lifts and tree trucks.

That's not bad for a company that hadn't intended to get into manufacturing.

The company's line-clearing business grew rapidly on the strength of good equipment and supervision.

"Line-clearing then changed from manual to a mechanized job," Asplundh said. "That was expensive. For example, we once used six-man crews with about \$900 worth of equipment. Now a three-man crew works with equipment costing about \$7,000 per man.

"Fortunately, we stuck to our knitting, kept money where it belonged, and had funds to buy the equipment. Nobody made what we

Manufacturing of wood chippers and lift trucks are being consolidated at Chalfont, Pa., where some 145,000 sq. ft. are under roof. Chippers are powered with four-, six-, or eight-cylinder Ford industrial engines. The lift trucks are built on any truck make a customer wants. Polyethylene basket liners are available for added operator safety. The liners are tested to withstand up to 100,000 volts.

wanted. We decided that if we couldn't buy it we'd build it.

"Tree limbs removed by trimming caused us difficulties 18 to 20 years ago. Even then burning was a problem, and we devoted considerable effort and expense to finding a solution. Eventually, the chipper provided the answer. Production began in 1948, and the plant, now part of 145,000 sq ft. of manufacturing facilities under roof can turn out all the chippers needed for our company and our customers.

"Now we're trying to figure out what we can do with tons of chips a day. Mulch for ornamental plantings has been the best use."

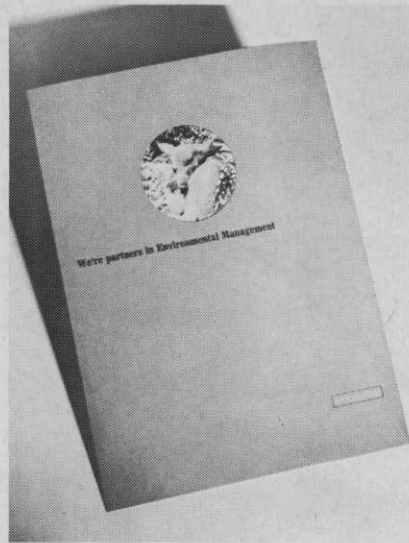
Development of Spiralloy Booms

When the first aerial devices appeared on the market, they had one common and very serious drawback—a lack of insulation.

A few years ago as Asplundh toyed with a glass-like cylinder while visiting with Rex Vogan, executive vice-president of manufacturing, he noticed its apparent strength as he tapped the desk. "What is this stuff, anyway?" he had asked. The material, he was told, consisted of glass fibers wound spirally and criss-crossed in diamond fashion and held together with epoxy. The sample had been left by a salesman several weeks earlier. "Did you think of making a boom for a line lift out of it?" Asplundh asked next. Vogan confessed he hadn't, but the question initiated the search that led to a major industry first—the insulated Spiralloy boom, made for Asplundh by Haveg Industries, a subsidiary of Hercules, Inc.

The upper boom protects the man in the bucket; the lower boom insert, men working around the base of the truck. A boltaron covering, since been developed, made of 1/16-in. of white plastic over 1/32-in. of red. If the boom is hit, the red calls attention to possible damage. While Spiralloy is lightweight and has the strength quality of steel, Vogan explained, if several fibers are severed, strength could significantly be reduced. The insulation quality might also be impaired.

Production of lift units began in 1958, first for Asplundh's own use and then for utility customers. Initially, customer orders for truck bodies and lifts were built to individual specification. Some still are; but to speed delivery and streamline production, the Chalfont, Pa., manufacturing plant began turning out standardized units, designed by the plant's full-scale engineering and design department.



A most recent sample of Asplundh's continuing public relations program is this environmental management folder. Entitled "We're Partners in Environmental Management," it is directed to utility executives and others. The folder contains specially prepared articles by authorities in the field of chemical spraying on rights-of-way, reprints german to the subject of ecology gathered from some of the nation's top manufacturing experts, and reprints of editorials written by some of the country's leading magazine editors. Copies are free by writing Asplundh.

At any given time, six to 10 forestry or general service units are parked in line, ready to roll at the jingle of a phone and twist of the ignition switch.

Biggest User of Own Product

Chipper popularity has risen rapidly, and units are sold to tree

men, park commissions, municipalities and others.

Though 80% of the lift truck and chipper production is sold to outside purchasers, "our biggest single customer is ourselves," said Vogan. "So if we have any problems, they come home to roost."

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SABRE
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A new low-cost utility lift and a rugged right-of-way vehicle have just been introduced by Asplundh. The compact utility lift truck falls in the less than \$9,000 price range. It's easily operated by one man. The IL-24 has controls in both basket and at pedestal. The lift can operate at heights up to 24 feet to bottom of basket and inside radii of 14 feet. The boom operates in either direction continuously through 360 degrees. For more information, circle (724) on the reply card.

Mercedes Daimler-Benz AG in Germany has named Asplundh to be its East Coast Sales agent for the all-wheel drive Unimog. The unit is called ideally suited for right-of-way spraying. Independent wheel power is achieved through differential locks on both axles which can be switched on or off, front or rear, as required. For more information, circle (725) on the reply card.

a week with our own units than any one of our customers would in a year," observed Asplundh. "It has to be good. If our equipment stops, we don't get paid."

"In a year's time," added Vogan, "we get two million hours of chipping alone in our own operations."

Behind the Color Orange

Lift trucks and chippers are painted in the color a customer wants, but all Asplundh units are a bright orange—and there's a number of stories behind the color selection.

"Carl's story was that during his football days at Princeton, he noticed how big the Penn State players looked in orange, so he wanted the equipment to look as impressive," said Lester.

Lester had occasion to make the same observation, as an All-American fullback for Swarthmore College. He later played professional football for the Frankfort Yellow Jackets, who became the Philadelphia Eagles.

"Actually," he said, "we recognized the visibility of orange as a safety factor."

On Pesticides and Environment

Lester Asplundh heats up quickly when the subject gets around to pesticides and environmental improvement. The company was a pioneer in using chemicals along rights-of-way.

When 2,4-D was patented as a weed killer in 1944, Asplundh Tree Expert Company envisioned its potentialities as a brush killer and established a research relationship



with its patentee. 2,4,5-T evolved and it has been used by Asplundh for more than 20 years.

Speaking of the herbicide critics, Asplundh charged that "some of them just don't know what they're talking about. We've never encountered any insurmountable problems." Its use is still authorized for rights-of-way.

"We're convinced that we have a responsibility to improve the environment. We trim trees to look as well as we can make them, and still give people electric service. Let a blackout come, and see what people prefer.

"There will be some problems with chemicals. We're doing dormant season spraying to avoid browning of leaves in the growing season. But give us a swath of brown for one year, and that's all that will be necessary. We're convinced that the proper use of chemicals is not going to harm the environment."

What people must come to understand, he concluded, is that society must achieve "a balance between economics and environment."

Objective for the Future

Lester Asplundh agrees with another company man who observed that Asplundh Tree Expert Company is a different company today from 10 years ago. More new operations were begun during the period. Though manufacturing has developed quite rapidly, and "the glamour is in the equipment, the job is still trimming trees, said Asplundh.

"Our primary business was, is, and shall continue to be line clearance. Our aim for the future is to continue to search and investigate other phases of utility functions where we can serve."

Lester Asplundh tells of the change he has seen in another way.

Many years ago at a Washington Christmas party, a utility official sought him out. "Your company is causing me some problems. A farmer-customer says one of your crews dumped brush in his gulley and left it." Asplundh assured him the crew would return and clean up the brush.

Some years later, at a similar Washington party, the same man, then chairman of the board, approached Asplundh again. "Your company is causing me problems again," he said. This time, the cause: "One of my associates says he can't get enough of your chips."

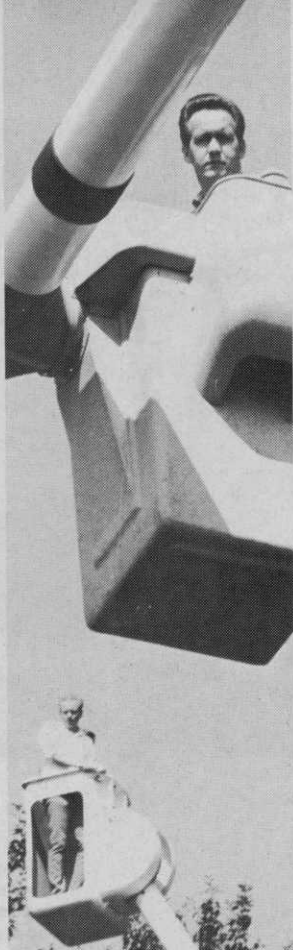


New activities include the service of laying utility and telephone lines underground and detecting trouble spots in lines above ground with "Thermovision." The latter service, an Asplundh first, uses infrared to detect hot spots and deteriorating and faulty installations along transmission lines. Thinking caps are in place now to consider all ways that wood chips might be utilized. To date, the best use has been as a decorative mulch for tree and ornamental plantings where mowing is not possible or not feasible.



Florida
Tree Company
Suggests
Method of . . .

Bucket Operator Rescue



EDITOR'S NOTE: Staff members of Farrens Tree Surgeons, Jacksonville, Fla., have developed a procedure for rescuing a worker who comes in contact with high voltage lines. The technique has since been modified and adopted by the Florida Industrial Commission. Gerald E. Farrens, vice-president of Farrens and of Sepsco Services, Inc., reported the procedure to the National Arborist Association meeting in February. We felt the method deserved wider dissemination. Following is the procedure:

SAFE PRACTICES AND RESCUE

- 1.** All wires should be considered energized at all times. The operator should never touch the wires with his person, tools, or any part of the boom. If the work is sufficiently close to the wires to constitute a hazard, then request the utility to cover conductors in the immediate work area.
- 2.** Do not touch, mount or dismount, or allow employees or the public to contact the truck body or chipper when operating the unit near conductors.
- 3.** Only authorized and competent personnel are permitted to operate the unit. The foreman is advised to have at least one additional person familiar with the controls in the event the operator must be removed from the danger area.
- 4.** Before going aloft, the operator should make a complete survey of overhead conditions to familiarize himself with the location of lines, poles, buildings, tree limbs, guys, or other obstructions which might present a hazard to the operation.
- 5.** Keep bucket upper and lower boom away from wires. In some states, it is illegal to operate

any device within six feet of energized wires.

6. If contact is accidentally established between the boom and a power wire or charged telephone wire, strand, or cable, always bear in mind that the entire truck and its contents may become electrically charged. If this happens, break contact immediately, or, if not possible to do so, alert everyone on the ground not to attempt to enter or leave the truck or touch any part of it while on the ground.

7. Should a bucket operator become unconscious due to contact with energized wires or tree parts, you must assume that the entire truck, as well as the ground in the vicinity of the outriggers, is also energized.

8. To gain quick access to the controls and minimize personal danger in lowering the victim, take a running start and jump onto the running board of the truck from at least six feet away, grasping the west coast mirror frame with your hands. Make certain you do not touch the truck and ground at the same time. Where it is not practical to jump on a running board, jump on the chipper from at least six feet away and move over the truck body to the controls.

9. Once on the truck, move quickly to the controls, lower the bucket and victim away from the energized wires and to the ground (as an alternative, remain on the truck and manipulate an outrigger).

10. Remove the victim from the bucket and lay him on his back in a position to administer mouth-to-mouth resuscitation and closed chest heart message. Clear the victim's mouth and tilt his head back to clear the air passages. If the victim does not breathe, seal his mouth with your lips, hold his nostrils closed and blow in breaths strong enough to cause his chest to rise, at the rate of 12 times per minute. If for any reason it is not possible to remove the victim from the bucket immediately, mouth-to-mouth resuscitation should not be delayed but should be administered while the victim is being removed.

11. Check the victim's pulse for a heartbeat by pressing two fingers lightly along the windpipe. If the victim has no pulse, it will be necessary to administer heart message in conjunction with mouth-to-mouth resuscitation. To administer closed chest heart-massage, locate and place the heel of one hand on the lower half of the breastbone. With the other hand on top, apply sufficient pressure to depress the lower half of the breastbone 2½" at the rate of 60 times per minute or five times between breath blown into the victim's lungs.

12. As soon as possible, summon medical assistance. Send a crew member for help while others administer heart message and mouth-to-mouth resuscitation.

13. Steps 3, 4, and 5 will be practiced at least once each month. Steps 6 and 7 will be explained in conjunction with practice. Each new employee will become proficient in mounting the truck and lowering the bucket, steps 3 and 4, on the first day of his employment.

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For More Details Circle (105) on Reply Card

By RAY GUSTIN, JR.
Gustin Gardens, Inc.
Gaithersburg, Md.



MAINTENANCE:

Stepchild of Landscaping

THERE ARE THREE children in our landscape family. We've named them "*Design, Construction, and Maintenance.*"

Design is a well-organized character. He possesses much talent, great artistic ability, many original ideas—some not too practical, perhaps—yet necessary. By and large, he is respected by the public and by the rest of the family as being capable of great accomplishments.

Construction is the one we probably understand best. He has a very practical sense of direction, possesses great engineering ability, likes to see things done efficiently. He does not always get along too well with *Design*, but because it's all in the family their differences usually can be resolved.

Then there is *Maintenance*. Sometimes the other members of the family deny his existence, as though he were illegitimate. Sometimes he is tolerated, but seldom embraced. This is why I've entitled this discussion: "Maintenance—Stepchild of Landscaping."

It seems that people who write specifications and people who have contract authority don't realize that plants are living things that need good care after planting. Present methods parallel the man who's in the hospital for a delicate surgical operation. Proper diagnosis is performed, skillful surgeon engaged, sophisticated equipment used. Great care is taken to prevent infection and the operation is successful. Then almost before the patient is out of the anesthetic, the doctor says: "You are fine. Get dressed

and go back to work!"

I'm afraid that's the way we sometimes treat plants.

In Maryland's beautification program involving millions of dollars, most federal money was appropriated for highway planting. Not one cent of that money could be spent for landscape maintenance. Efforts to change the allocation to include post-installation care failed.

Plants take quite a beating in transplanting operations. Feeder root damage in digging. Transportation hardship. Unfavorable planting conditions. Planting delays because of construction halts.

Add to this the possibility of poor soil conditions and you can begin to understand the amount of shock a plant must overcome to fulfill its intended purpose.

Plants want to live. After working closely with them for nearly 50 years, I freely confess an affinity for them. Probably this is why I crusade for better plant care.

Bid Maintenance + Cost

Let's separate landscape maintenance from landscape construction. These activities should be performed separately by different people with special skills.

We have got to convince architects and others that write job specifications that landscape maintenance is a cost item and should be so bid.

You and I may be bidding the same job, for example. Let's assume you bid to make an allowance of 15% for maintenance and guarantee.

I figure a smaller amount, or none at all. Perhaps I figure the Good Lord will take care of maintenance. I get the job on a lower lump sum bid. You can see what might happen. The job may not look too well in a few months.

Plants can look really sick before they either die or start moving ahead. If planting was one bid and maintenance an alternate bid, I believe the contracting authority would be in a much better position to compare bids and the jobs, with properly scheduled maintenance.

At a recent meeting of the Associated Landscape Contractors of America, architects expressed a desire to somehow obtain better landscape maintenance. They are artists, and they want the finished job to look the way they had pictured it.

Separate Maintenance Crews

How do you implement the concept of separating landscape construction and landscape maintenance? Here's how we're doing it:

We had realized a lot of our jobs weren't looking too well. Ones we could point to with pride often were those where the client had good maintenance people taking care of his property.

Too many of our jobs looked well immediately after completion, then looked pretty horrible a few months later. In these cases, maintenance was entrusted to unskilled labor, such as janitors, porters, or others who knew little or nothing about plant care.

Prior to establishing a landscape

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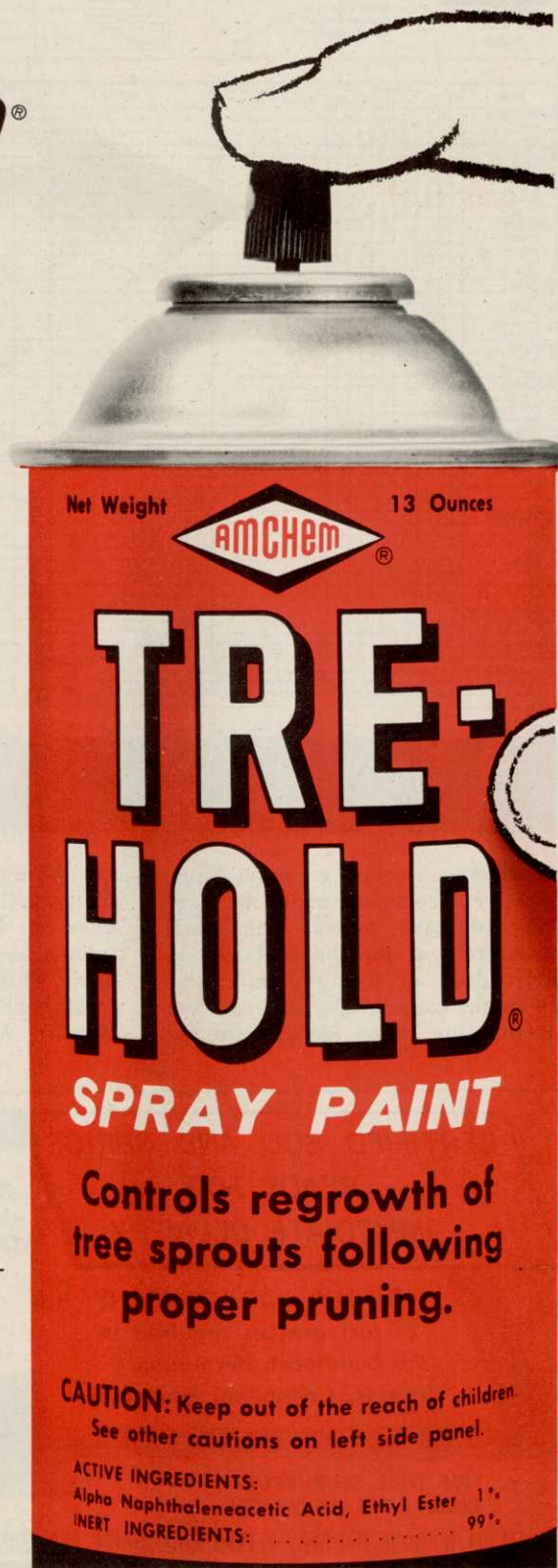
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ments, renewing of mulches, checking root conditions for drainage or aeration, etc.

When a planting job is completed, a copy of the job sheet is given to the maintenance superintendent. The job is scheduled. We try to give the first inspection and service about one month after the planting is completed. We plan to give at least two additional services during the year. We make a point to see the client each time a service is performed. We've found it beneficial to give him a report, plus tips on such things as watering. Quite often the client is interested in additional planting, in which case the landscape salesman is notified.

One big plus we failed to fully recognize when we started the service was the big improvement in customer relations. Clients sometimes are actually shocked to see us appear on the property to check back on our jobs without them having to call us.

What about the economics of the concept?

Maintenance and guarantee are cost items and should be built into

every job. In these days of close competitive bidding, it is important to keep this cost to a minimum.

We know our clients, or most of them, realize they have made a substantial investment. They feel inadequate to give the plant material the care it needs to keep it alive and looking well. When we used to pull off from our jobs, I believe we left some customers with a big question mark and a little worry.

I believe many of our customers are willing to pay well for good maintenance. If we are unable to provide it, we have not met our responsibilities. This is particularly true on industrial and commercial properties where general maintenance is a budgeted item.

Unless maintenance is contracted for at the time of installation or contracted for at the completion, our gratis service is limited to inspection and replacements where needed. Since organizing our maintenance section, our replacements have dropped greatly.

In most cases, our maintenance is seasonal, and does not include such services as grass cutting, frequent watering, snow removal, etc. There



are exceptions. Maintenance contracts are fairly easy to sell, and at a good price. We charge just as much per manhour for maintenance as for our other operators.

We keep accurate records on work performed by our maintenance section. We know what it costs in labor, equipment and materials. We know that the profits on the work we get paid for exceeds the cost of the gratis work of inspections and replacements. We believe the end result is a better service, improved customer relations and perhaps most of all puts each branch of service in its proper perspective.

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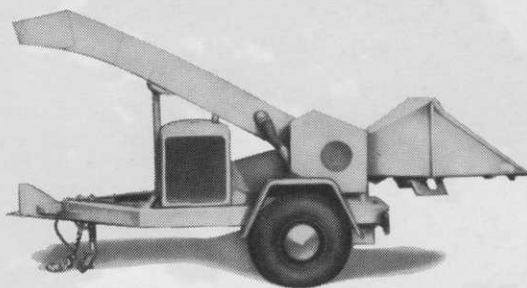
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THE TREE SCENE IN BRITAIN

By W. E. MATTHEWS
The Southern Tree Surgeons, Ltd.
Crawley Down, Sussex, England



I ALWAYS HAVE A FEELING that Americans imagine Britain as one huge garden populated by ancient rustics, kept in order by benevolent policemen with funny hats; and guardsmen who all lodge in Buckingham Palace.

Certainly we have all this, but as I learned on a visit to last year's International Shade Tree Conference in Portland, the problems of the arborists both in Britain and in America are extraordinarily alike. Everything from business administration to public relations, to staff problems has exact parallels.

The main thing we do not have is your magnificent equipment. Perhaps if we had your tax system, enough money could be left in companies for capital outlay of this kind.

Not much interest was taken in preserving trees in England until after the last war. This was odd because the English tradition of horticulture was very strong and in fact the many fine gardens that were being made had trees and shrubs brought to them from all over the world. They flourished in our temperate climate, so well in fact that this has been given as a reason for the complacency regarding their upkeep. The philosophy was why worry when all is going so well.

The odd gardener and esate owner attempted crude methods of bracing when the need was very obvious.

All sorts of jollops had been slopped into cavities, most of which did more harm than good.

The most ambitious undertaking was usually lopping, topping and removal of branches. This work was carried out by people without much skill or experience and the results were often drastic both for the tree and the operator. During the twenties one or two people filtered back from America who had been trained by Davey, Bartlett and the other big companies. They practiced—usually in a small way—very expensive treatments to very special trees. Then the war came and everything stopped for six years. People who returned found a legacy of neglect. Gardens were overgrown and trees had been felled for timber. Municipal officials were trying to reclaim and maintain their existing gardens in addition to creating new ones, to cater for the massive housing developments which were taking place at that time.

As agricultural land was lost to industry, trees took on a new significance. There were no longer enough to go 'round, as more and more disappeared under the bulldozer.

Residents, committees and local amenity societies became very tree conscious. This demand for tree care was the climate in which professional arboriculture, on a properly organized commercial basis, emerged in England.

Five Pounds and a Motorcycle

After some preliminary maneuvering and learning the profession in other companies, I met Tom Wilson, a Canadian from Manitoba, and we set up our present company, The Southern Tree Surgeons, Ltd. At its outset this was not the most magnificent undertaking, as we had five pounds and a motorcycle which I had borrowed from my brother. It was a great day when we acquired our first, second-hand van for the magnificent sum of fifty dollars. At least we had started to come in from the cold.

By our basic nature and business practice, we carried out our work as conscientiously as we could, and to this extent virtue was certainly rewarded. We eventually had our first man and gradually over the years others came and till at the present time we are a staff of 45 people. We are the largest arborial contractors in the United Kingdom. Things have certainly evolved a great deal from that first precarious outing on the motorcycle.

We soon realized that traveling

was costing us a great deal of money, although even then it was nowhere on the scale that you undertake in America. In this congested island, a journey of 100 miles can take anything up to three hours; so you can imagine that some deployment of our forces was necessary if we were to work competitively in other areas. We coped with this problem by setting up four branches strategically placed about the country, and put them in charge of our most experienced personnel who were able to work entirely on their own initiative.

Labor Costs and Charges

When we first started to expand, some 10 years ago, costs were vastly different from what they are today. It is rather difficult to give you exact comparisons for that era as the value of the pound is considerably different from what it is today. At that time a top climber earned around £7. 10. 0. (\$20) per week, and we charged him out to the client at 4-5 pounds (\$11) per day. Taxes have increased and the cost of living has gone up to the extent that a top man will now get around 25 pounds (\$70) per week, in addition to which he often has the use of the van after hours.

This may sound a fairly lucrative business, judged by American standards, but bear in mind that each individual today costs us 5 pounds before he leaves the yard on Monday morning and various social benefits. We also have what is called a Selective Employment Tax for people in what are termed non essential industries. Today we charge these men out to the clients on a basis of between 12 and 14 pounds (\$33-\$39) per man day. If we are staying away from home, accommodation is added to this charge.

Contract on Exact Quotation

In England all work is done on an exact quotation and not, as I found in America, on cost-plus certain percentages all of which were based on the time taken. People here like to meet you with an exact appointment (and if you are 10 minutes late, they are most unhappy). They will tell you exactly what they want done, and they expect you to submit an exact quotation for what ever has been agreed. Most of the disagreements in this country that do occur are the results of loosely worded arrangements, or no proper contractual procedure. If we went on cost-plus, I am sure we would spend most of our time in court trying to get our bills paid. I know there is

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The typical Southern Tree Surgeons crew is shown below. At right, they're getting instructions from Bill Matthews. Some jobs take them more than 100 feet into the air, such as the one on the previous page and at left.



more risk to exact bids but on the other hand there are fewer arguments also.

The climate as regards competition is now very similar to that in America. Nearly all public work is put out to tender, and we have exactly the same problems with loosely worded specifications put out by people who have no real understanding of the work.

Organizations and Education

We are trying very hard to improve the situation by meeting and lecturing to public figures and organizations to get across to them that they need an expert to prepare and administer tree work in exactly the same way that they are prepared to accept experts in other fields. The trouble is with trees that everyone is an expert. It was this sort of aggravations that prompted us to form our own professional association and this we did some four years ago when the Association of British Tree Surgeons and Arborists was started.

We started off by arranging public demonstrations to which we invited all the important people to show them exactly what good tree work

was. This had two objects, to stimulate interest and to try and prevent some of the atrocities that had gone on when tree work was carried out by any Joe who happened to knock on the door, largely because the people had no idea at all of what was needed, or how tree work should be carried out.

These demonstrations created a great deal of interest and culminated in our organizing a three-day 'teach-in' on arboriculture at a well known horticulture school. When it became known that this course was on the stocks, the response was overwhelming. It was the most over-subscribed course this institute ever had. We took some 80 people, and organized three days of lectures and practical demonstrations.

The principal of the college then became interested in forming a definite department to deal with arboriculture and we eventually decided that the greatest need was for practical operators, and this led to organizing a 12-week course in tree surgery, and hiring a permanent instructor to go on to the staff. We now have the first three or four courses behind us and a great deal has been learned during this first training session. It is now obvious that people need longer practical experience, and to this end we have re-designed the course so that inter-company training is carried out during normal operations. What was formally a 12-week concentrated session is now being divided into two- or three-week chunks over a period of 18 months to 2 years, during which the students will return to the college at intervals to take examinations in various practical skills which lead to a final examination during which they will be able to qualify as craftsmen.

We have managed to get a nationally recognized examining organiza-



Grounds around Blickling Hall, Norwich, Norfolk, are under the care of Southern Tree Surgeons, the largest arborial contractors in the United Kingdom.

tion to accept this scheme, and have thereby established the first step in a career structure in arboriculture in this country.

In addition to these practical examinations we have two other main qualifications which are awarded by the Royal Forestry Society. These are a Certificate and a Diploma in arboriculture. The Certificate could be regarded as the intermediate stage and the Diploma as the advanced.

With all this eruption going on, and people becoming more aware of the need for arboreal training, other courses and 'teach-ins' started to pop up all over the country. In order to prevent confusion, we called a national symposium to discuss education in relation to arboriculture and the result of this is that a committee has been set up, with representatives from all interested organizations, to get the thing on a properly organized footing and to prevent confusion which could be caused by small break-away groups.

In our own company, we are finding that the old philosophy of taking the first guy whom comes through the door disappeared some years ago. We are now trying for the well educated lad who not only knows **what** to do but **why** he is doing it. Our own operations have extended throughout the British Isles, Scotland, Ireland, Wales and the Channel Islands. As you can imagine, this causes some very complicated costing problems, and we are beginning to wonder if the enthusiasm with which we rush hither and thither is often a little misguided when we come to do our sums at the end of the contract.

Sir Winston Churchill and the Cedar

In common with many of our American counterparts, one of the most rewarding things of this work is that one is constantly meeting interesting and important people, and we have certainly had our fair share of these. We have worked for most of the major institutions, Windsor Castle and lately at the Queen's own country residence at Sandringham in Norfolk. One of our more interesting early contracts was for Sir Winston Churchill at his home at Chartwell in Kent. This incidentally was also one of our most difficult contracts in that Sir Winston had instructed that a dying Cedar be reduced. This was a fairly routine job apart from the fact that the tree was situated in a wood shed at the junction of four rooves and

every piece had to be taken down by erecting a scaffold frame around the tree, cutting it off in foot chunks, splitting them and dropping them down through a foot gap between the tiled roof and the tree. When we were half way through this operation, Sir Winston came down the garden and said it had gone far enough. There were about 12 ft. of Cedar bole sticking up in the air without a single branch on it at this time. "Leave it," he said, "and let it shoot out again." We protested at this and told him there was no

likelihood that Cedar would shoot or put on any growth at all from such a stump. But the great man persisted, "leave it," he said, "if I am wrong, it will not be the first time." We could not help but wonder what had happened the last time he was wrong.

The tree of course did not shoot, and we were summoned again some six months later to reduce it down to the nearest live branch because, as he said, "it looks like a factory chimney."

We worked there almost every

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year for quite a long time, and toward the end of his life we used to watch him sitting alone on his seat by the lake, feeding his black swans of which he was very fond.

Dutch Elm Disease Heavy

One of our great needs is for more research into broad-leaved tree problems. Our own state foresters are very good when it comes to anything coniferous but as broad leaves have not been considered a very good commercial crop over the last 30 or so years, very little has been done about problems which are peculiar to them. This year in particular we have been plagued by the worst attack of Dutch Elm Disease for the last 30 years, and in some parts of England up to 90% infection has been recorded. There also have been serious outbreaks in other places, and we hope this scourge is not going to take hold of the English Elm the same way that it has done in America. Another problem which is causing trouble at the moment is canker of Plane, and as usual we are calling on all the information we can find from America, which has so often proved in-

valuable to us over the years.

Tree Care Equipment

And so we have arboriculture as it is in Great Britain today. There are a number of modern companies with up-to-date equipment, branchwood, chippers, stump choppers, and so on. Safety equipment is now generally used, and, of course, all these things are based on American know-how or in many instances are the actual American machines imported into this country. As yet it is difficult to convince our manufacturers to take arboriculture seriously, rather than regarding it a minor market.

One of the main impressions in America was of the enormous capital outlay that goes into your companies. This may be due to the difference in the tax structure, and to some extent to the higher standard of living. We can not in this country, as yet, afford things like highlift platforms, which I saw operating in America by quite small companies. Even such things as brushchippers have to be bought very carefully over very long periods. The stump choppers are owned by private contracting firms who work for us on a sub-contract basis.

Chemical Program Small

One thing that we do not have over here, which seems to be the mainstay of many American companies, is an elaborate spray program. There is hardly any spraying at all carried out in England, largely because there is no need for it. We have used small knapsacks sprays for dealing with outbreaks of Marssonina Salicifolia, which affected all our weeping willows badly some two years ago, but even this seems to have died out during the last year and the willows are returning to normal.

Allied Industries Growing

During the course of our development, we have noticed a similar development of allied professions concerned with visual amenity. Probably the most important are landscape architects who are now properly organized with their own institute and no major contract is undertaken without calling in one of their members.

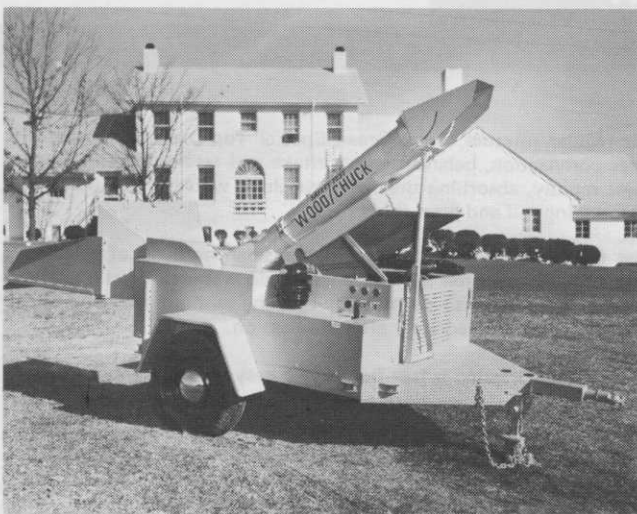
The movement of semi-mature trees also has been promoted vigorously, largely by our Nationalized Coal Board, who have used trees extensively in reclaiming open cast sites.

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S	M	T	W	T	F	S
		1	2	3	4	5
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46th International Shade Tree Conference, Hotel Flagship-Rochester, N.Y., Aug. 9-14.

New England Nurserymen's Association annual summer meeting at the Kempenaar Clambake Grounds, Newport, R.I. Aug. 12.

Pennsylvania Nurserymen's Association summer meeting at Better Homes Landscape Co., Route 22 and I-78, west of Allentown, Pa. Aug. 14.

Sixth Annual Turfgrass Management Conference, Hawaii Turfgrass Association, Punahou School, Honolulu, Oahu, Aug. 26-28.

39th Annual Turfgrass Research Field Days, University of Rhode Island, turfgrass fieldhouse, College of Resource Development, Kingston. Golf Course Superintendents Field Day, Aug. 26; Lawn and Utility Turf Field Day, Aug. 27.

Maryland Lawn and Garden Show at the University of Maryland, College Park. Aug. 29.

Michigan State University Northern Michigan Turfgrass Field Day, Traverse City Country Club, Sept. 9.

Virginia Polytechnic Institute Turfgrass Field Day at Blacksburg, Va., Sept. 9 and 10.

Helicopter Association of America eastern operators management seminar at the Holiday Inn, Media, Pa., Sept. 9-12.

Sprayorama '70 Pacific Northwest Pesticide Applicators, Inc., annual meeting, Thunderbird Motel, 1401 N. Hayden Island Dr., Portland, Ore., Sept. 10-12.

1970 Illinois Turfgrass Field Day and open house at the turf plots of Lincoln Avenue one mile south of Florida Avenue in Urbana, Sept. 11.

Turf and Ornamentals Day, Ohio Agricultural Research and Development Center at Wooster, Sept. 15.

University of Minnesota Technical College Fall Horticultural Day, Waseca, Sept. 20.

60th Convention, California Association of Nurserymen, Yosemite, Sept. 22-24.

California Park and Recreation Society fall Park Operations Workshops. 9:30 a.m. to 3:30 p.m. Region 1 — Sept. 29 at Civic Center at Los Gatos; Region 2 — Oct. 1 at Holmes Playground at First Street and Platt Avenue, Fresno; Region 3 — Oct. 1 at California State Polytechnic College, 3801 West Temple Avenue, Pomona.

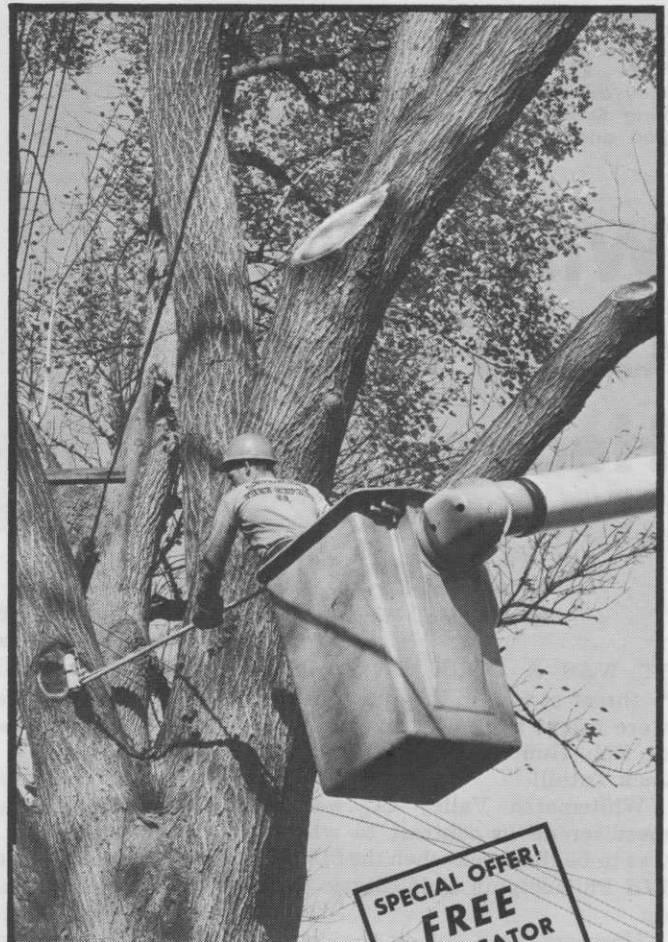
Roadside Development 29th Annual Short Course, Department of State Building, 65 South Front St., Columbus, Ohio. Oct. 5-9.

10th Annual Southern California Turfgrass Equipment and Materials Educational Exposition at Brookside Park, Pasadena, Oct. 14-15.

Texas A&M University 5th annual Industrial Weed Control Conference, on campus at College Station, Tex., Oct. 19-21.

10th British Weed Control Conference at Hotel Metrople, Brighton, Sussex, England. Nov. 16-19.

Ohio Turfgrass Conference and Show at the Cincinnati Convention Center. Dec. 7-9.



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Another Asplundh first... the applicator pole...speeds the action...increases production

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A few weeks ago, golfers in the \$150,000 Philadelphia golf classic found the Whitemarsh Valley CC course in much better condition than they did a couple years ago. The reason: Fylking Kentucky bluegrass has all but replaced poa annua.



Whitemarsh Gives Poa Heave-Hoa

By PHIL LANCE
Philadelphia, Pa.

IT WAS A DARK DAY with a threat of rain in the air, but those were bright smiles dotting the faces of Bob Hunter, Paul Warren and Jack Tuthill.

Whitemarsh Valley CC was almost serene in contrast to what it was to be the week when the \$150,000 IVB Philadelphia Golf Classic came up.

Members were out on the course, workers were busy putting the finishing touches on the 6,670-yard layout and Hunter, Warren and Tuthill were smiling.

Quite a contrast to August of 1968 when the trio would have crawled into a hole if they could have found one large enough on the Chestnut Hill, Pa., course.

High humidity and high temperatures had burned out WVCC's soya Poa annua then and Hunter, as the course greens supervisor, Warren as the tournament director, and Tuthill as the PGA tournament direc-

tor, were sick.

However, it is different this year. Whitemarsh fairways are lush, its greens green and its roughs rough.

"It is in the best condition since the first grass back in 1963," Warren said happily. "That young man (Hunter) has done a great job, and the course is going to get better."

Hunter, in his third year at the club, wouldn't take all of the credit. "The weather plus the fact that the tournament is being played earlier in the season are the big factors," said Hunter.

"Why? It ended up so bad in 1968 that we ended up scalping the fairways. However, it did do one thing. It got us to thinking and doing something about it.

"The result is that WVCC initiated a three-year, \$30,000 tri-calcium arsenate program which eventually will kill all of the old fairway grass and build up the arsenate in the turf.

"It will be awhile before we derive the benefits of the program, but we'll never get a burn-out like

last year. Our new grass is Fylking."

Hunter and his staff have been following the specifications laid down by Tuthill and his assistants for this year's extravaganza.

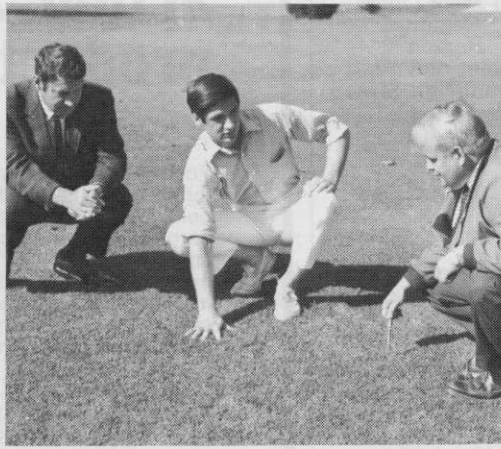
"We have lowered the height of the cut on the fairways from 1 inch to $\frac{3}{8}$ of an inch, while the rough, which we normally keep at 2½ to 3 inches, has been allowed to grow to 4 inches. If we get any amount of precipitation, it could go to 6 inches.

"In essence," Hunter concluded, "what we have done is make it easier for the player on the fairway and penalize further the player in the rough."

Superintendents of golf courses throughout the nation are tired of Poa annua and now to most, Poa annua is No. 1 turf enemy! They are tired because Poa annua is fickle. It fails when needed most—when stress conditions exist. Superintendents are sitting on a "keg of dynamite"! Whether ice smothering in winter or disease wilting in summer, the Poa annua can go within hours. The uncertainty of when and how much loss creates anxiety.

Most superintendents agree that Poa annua should be replaced with desirable grasses. There is much disagreement as to the method. Earlier many superintendents temporarily have instantly removed existing Poa annua by the "scorched earth" method. For example, with sodium arsenite.

Other superintendents have more slowly reduced and removed Poa annua in one calendar year with either powder or granular tri-calcium arsenate. As Poa annua fails, the bare areas are more obvious and time is required before reseeding permits desirable grasses to spread. However, when the clubhouse is remodeled, portions are closed and inoperative for months.



Bob Hunter, center, at Whitemarsh shows the results of the turf program recommended to him by representatives of Chipco Turf Products. Phosphorous was eliminated from the fertilizer program, and tri-calcium arsenate was applied to build up a toxicity to poa annua.



The members expect and accept an unsightly mess until improvement is accomplished.

When the rapid method is employed, some thin open areas exist but are under play—which is still maximum service to the golfer.

Most turf experts such as Dr. Bill Daniel of Purdue, Charlie Wilson of Milwaukee Sewerage Commission and Jim Holmes, formerly of the USGA Green Section, believe in a slow, graceful program that gradually eliminates *Poa annua*. Develop a model—start a program on one or more fairways—then expand.

Here is the program followed by Whitmarsh Valley Country Club:

1. *Drain low areas.* Improve drainage with trenching and vertical slitting. Many superintendents have installed narrow slit trenches filled with pea gravel and capped to overflow with sand. All low pockets and wet areas must be drained. Wet soils increase arsenic toxicity and favor *Poa annua*.

2. *Correct soil acidity if needed.* Apply lime to greens or fairways if under a pH of 6. Arsenicals are less available at low pH or at pH above 7.8. Excess calcium carbonate tends to reduce water soluble phase of arsenate. Allow two to four weeks between lime and 48% tri-calcium arsenate granular applications. Most midwest soils do not need lime. Some eastern soils do. Get soil tests before using.

3. *Eliminate phosphorus in fertilizer program:* Use no phosphorus or as little as possible until *Poa annua* is under control. Use very little phosphorus after toxicity is achieved. Phosphorus will replace the arsenical and *Poa annua* will again thrive. (Less soluble phosphorus in organic sludge does not override arsenic toxicity). Use am-

ple nitrogen and potassium, for example, a 2-0-1 ratio.

4. *Aerate:* Dilute, reduce and remove thatch by deep vertical grooving. Aerify to make room for new growth. Bring up some soil, get seed against soil. Do not attempt to overseed onto a heavy thatch.

5. *Overseed often:* Any time at light rates. Repeated attempts to start new seedlings should be made until uniform survival is secured. Seed at rates from 5 to 20 pounds of seed per acre. Seed any time, treat at light rates of arsenic any time. Seedlings will usually survive if rates are not more than 8 pounds of 48% tri-calcium arsenate granular per 1,000 square feet.

6. *Vary application rates according to existing conditions:* Apply from 4 to 12 pounds of formulation (of 48% tri-calcium arsenate granular) per 1,000 square feet, twice a year in the spring and fall. Each application depends upon the percentage of *Poa annua*, available phosphate, soil type and pH of the soil. Apply after the frost is out of the ground and then again between Aug. 15 and Nov. 15. It is not wise to apply on frozen ground.

7. *Achieve *Poa annua* toxicity:* Adequate arsenic toxicity to *Poa annua* depends upon the soil texture, available phosphate and soil pH. This varies from 16 pounds to 30 pounds of formulation per 1,000 square feet. Light sandy soils low in phosphorus with little "buffer capacity" require less arsenical to reach toxicity.

8. *Maintain toxicity to *Poa annua*:* Toxicity may be maintained with 2 to 4 pounds per 1,000 square feet applied annually either in spring or fall.

9. *Emergency use of liquid fertilizer:* $\frac{1}{8}$ to $\frac{1}{4}$ pound of P_2O_5 per 1,000 square feet or 5 to 10 pounds per acre may be used to improve *Poa annua* for emergency cover if needed. This is a check valve if *Poa annua* is dying too rapidly. (Do not use regular granular phosphates because of residual effect in the soil.)

10. *Arsenic toxicity:* *Poa annua* sensitivity to arsenic is favored by short days, cloudy days with low light intensity and cool weather. Target applications to provide arsenic toxicity for early fall and early spring benefits.



MODEL 55110T
With special orchard gun will spray up to 50 feet vertically. Up to 600 psi . . . 7 gallons per minute capacity.

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An Easy Way To Keep Pond Free of Algae



A CHICAGO engraving executive sprinkles his private pond with blue water.

His reason is not to color the water, just to retain its natural beauty. He's using Cutrine algaecide-fungicide, an organic copper complex.

Kenneth V. Schmid, president of

Jahn & Ollier Engraving Company, knows that a pond or small lake can make or break a place—depending on its condition. He had seen how just a small body of water could be the finishing touch to beautifying his Spring Lake Farm, or the ruination of all other attempts to beautifying the setting.

Ponds by their very nature are prime algae beds. Uncontrolled growth of algae can make them unusable for fishing and water sports, and downright distasteful to look at.

Writing to Applied Biochemists, Inc., Milwaukee, Wis., Schmid said: "I have been using your product for one year and I have had great success with it."

"I started out with the first application using a 200-gallon John Bean sprayer, at one part to 100 gallons of water and spraying the surface with a high-pressure spray," Schmid said.

"To supplement the water in the pond, I have sunk a well and run underground plastic tubing to the center of the pond with an upright pipe in the middle with a Buckner sprinkler attached.

"To utilize the proper distribution of Cutrine in somewhat a drip method, I installed a gas cock at the bottom of an 18" by 1 1/4" pipe, to adjust the amount of flow through the pipe.

"On top of the 18" pipe, I put a 1 1/4" gate valve with a cap."

To make an application of Cutrine, Schmid said, "I open the gate valve and put 18" of Cutrine in the standpipe, close the gate valve cap, and start my submersible pump.

"This could be done in any size pond, even using a garden hose with a pipe and sprinkler."

Cutrine is an algaecide-fungicide based on a "harnessed" copper sulphate, according to Donald E. Seymour, president of Applied Biochemists, Inc. It's harnessed, he said, because it can eliminate all forms of algae at rates that are not toxic to humans, animals or fish.

Cutrine is a chelated copper com-

Why tie up big tractors, and big investment costs?

- ◆ SAVE MONEY
- ◆ SAVE TIME
- ◆ SAVE EFFORT

Automatically Roll 1200 Sq. Yds. of sod per hour . . . on skids or pallets

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SOD-CROPPER

UTILIZING A SMALL LAWN TRACTOR

2 OUTSTANDING MODELS (Fully Hydraulic or Mechanical) Features Non-Rigid Tractor Mount, Sealed Lifetime Bearings, Hydraulic Lever Controls, Full 9-wheel Flotation on or off the turf. Discharges on either side of the unit.

GIERINGER MFG. CO.

6508 N. Sunnypoint Rd.
Milwaukee, Wis. 53217



Kenneth V. Schmid, a Chicago engraving executive, ran plastic pipe to the center of his Spring Lake Farm pond then attached a Buckner sprinkler head to spread Cutrine algaecide.

climates. Before application, the algaecide should be pre-mixed with the water at least 9 to 1, then sprayed evenly. The algaecide is heavy and will sink where it is sprayed.

There are no swimming restrictions, said Seymour.

Citrine is effective, he added, any time algae is growing and the water is above 60 degrees. The algaecide itself does not remove oxygen from the water, but he advised caution in treating heavy algae infestations. Decomposition, he explained, of heavy algae growth could cause oxygen depletion severe enough to bring about fish suffocation. Where heavy algae growth exists, he advised treating one-half of the area, then waiting one week before treating the other half.

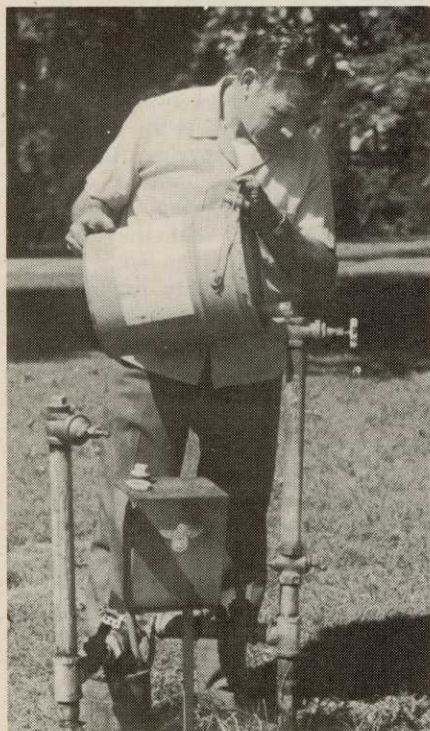
Citrine can be corrosive, therefore spray equipment should be washed thoroughly after use, he said.

The algaecide, according to Seymour, is suitable for use in ponds, lakes, pools, rivers, potable water, fountains, trout streams, cooling towers, irrigation ditches, and water intakes.

plex, he continued, which, unlike copper sulphate, remains in solution (even in hard water) and is absorbed by the algae. After absorption, he added, the algae withers and dies, leaving no chemical residue.

Citrine also is an effective fungicide, which controls many fish diseases, such as fin-rot in trout, he said.

Application recommendations for Cutrine are 2 gallons per surface acre in the early spring and 3 gallons in mid-summer in temperate



Schmid determined that the amount of Cutrine his pond needed per application would fill 18 inches of 1 1/4" pipe. A gas cock at the bottom of the 18 inches of pipe regulates the flow. The pressure source is a submersible pump.



HERBICIDE DRIFT

Visko-Rhap* herbicides by design are heavy. Heavier than most because each drop is oil-coated. And because they're heavier, they resist drift, falling only where you want them to fall. They stick where they should stick. They do the job. When your herbicide does these things, the other benefits seem matter-of-fact.

Elimination of product waste, reduced labor costs, more hours on the job... matter-of-fact. Visko-Rhap.

*Trademark of Hercules Incorporated

Available in formulations of 2,4-D, 2,4,5-T, and Silvex from Agricultural Chemicals Division, Synthetics Department, Hercules Incorporated, Wilmington, Delaware 19899.



SP 70-4

For More Details Circle (108) on Reply Card



How Cal-Turf Moves Sod

WANT TO BUY a front yard?
Or a back yard? Or a golf course, football field, park?
They're all available with a call to a company named Cal-Turf near Camarillo, Calif., about 60 miles north of Los Angeles.
Cal-Turf is a sod-growing company that supplies about 50 lawns per day to customers throughout

Southern California, as well as in Nevada and Arizona.
Sod is obtained from more than 500 acres of beautiful lawns cut in a three-inch-deep mat 15 inches wide by four feet in length for trucking to the job site.
Sod growing is not a unique business, but Cal-Turf can be classified as a unique entity in the business

because of its highly efficient methods of operation.
Illustrating Cal-Turf's progressive business practices is a radio system connecting every truck in the fleet with the headquarters office as well as three sales yards in Southern California. Thus if a driver gets lost or a truck loses a wheel, assistance is available with a flick of the switch.

Many sod-growing companies continue to use horse-and-buggy techniques such as hand labor in loading and unloading. Cal-Turf, on the other hand, utilizes a fleet of 14 rough terrain fork lifts that load trucks in 20 minutes, are towed to the job site where they unload the sod, then are towed home for another job.

Paul Ledig, sales manager, estimates each fork lift is the equal of a five-man crew. Figuring five hours per round trip to deliver a lawn while paying each man two dollars per hour, savings with the fork lift theoretically amount to some \$11,000 per year—considerably higher than the cost of the unit. In practice, it doesn't work out this well because of operating and maintenance costs, but the units pay for themselves many times over during their working lifetime.

Cal-Turf's fork lift fleet is manufactured by Champ Fork Lift Corporation at El Monte, near Los Angeles.

"Fork lifts take a terrible shaking every time they're towed on a high speed road, and most of them literally shake themselves apart," Ledig said. "Champ is about the only one we've found that can take the pounding and come back for more year after year."

In addition, Ledig said, the units

AT LAST A MACHINE TO HARVEST SOD



the Growers way!

- WILL ELIMINATE UP TO 10 MEN FROM YOUR LABOR FORCE.
- DEPENDABLY PRODUCES 1500 PLUS YARDS OF NEATLY ROLLED AND PALLETIZED SOD PER HOUR.
- THE "HARVESTURF" NEVER TRAVELS ON THE SOD, ALLOWING HARVESTING UNDER MOST WEATHER CONDITIONS, AND NEVER DAMAGING THE TURF.
- ALL POWER IS FURNISHED BY HYDRAULIC MOTORS WHICH ARE FULLY ADJUSTABLE AT ALL SPEEDS.
- THE "HARVESTURF" IS ABLE TO HARVEST SOD AT WIDTHS UP TO 24 INCHES AND LENGTHS TO 82 INCHES.

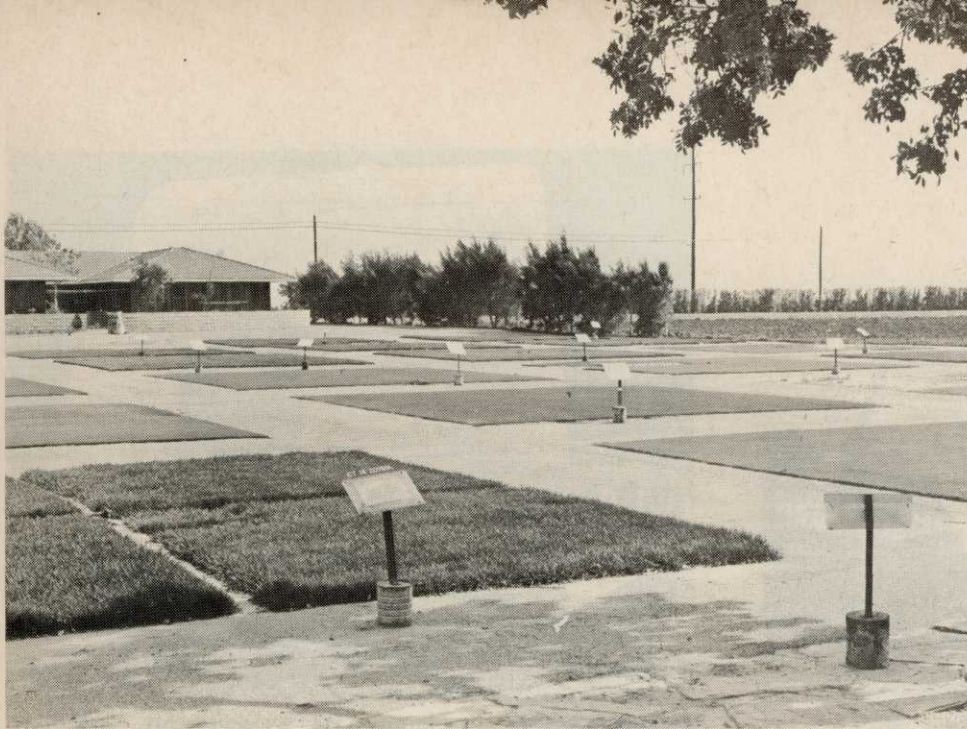


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Well-manicured display plots of sample grasses are maintained at Cal-Turf sales office, Camarillo, Calif., for examination by customers.

are constructed to work in rough terrain without stalling or bogging down.

The result of all these ingredients is a fast-growing company that has mushroomed from zero ten years ago to more than a million dollars annual sales at present.

Cal-Turf, founded and headed by Tobias Grether, offers a total of nine varieties of lawns, including four hybrid bermudagrasses, two bluegrasses, two bentgrasses and one dichondra. Generally speaking, bermudas are used in hot areas and for heavily used locations such as football fields, parks, back yards. The blues are ornamental for front yards, around business buildings and other light traffic locations. Dichondra is used almost exclusively for ornamental home use, while the bents find almost exclusive application in putting greens.

At planting time, fields of polyethylene are spread over the ground

to permit fumigating with methyl bromide and chloropicrin to kill weeds, nematodes and any other "bad guys."

Sprinkler irrigation is supplied through a pipeline system about 400,000 feet in length, or about 80 miles.

Sod is cut in rolls for pallets for easy truck loading and unloading by fork lift.

Cal-Turf will supply a lawn as small as 500 square feet, which costs the buyer \$75, and has handled single projects, such as a housing development, as great as 100,000 square feet.

Largest single customer for the company is Rossmore Leisure World in the Laguna Hills south of Los Angeles. In various steps, an estimated 150 acres of lawn—about 6.5 million square feet—have been supplied to the development.

And that's some lawn in any language!



Champ fork lifts load trucks at the field, are towed to delivery site, then unload and move sod to point of laying.

**Sod Growers!
Golfers'
Dream
Come
True**



backyard putting green

Sod growers! Dig this great opportunity. Golfers are a captive market for 0217[®] Fylking Kentucky bluegrass lawn. It is the one grass that can be cut close enough for true putting practice, and be an absolutely beautiful lawn, too.

Fylking forms a dense turf of greenest green, beginning in early spring and lasting into late fall. It doesn't require special golf course care, yet thrives when cut low as 1/2 inch. A hardy bluegrass originating in Svalof, Sweden, Fylking is drought and winter tough, doesn't show traffic wear and is highly disease resistant. Proven in 12 years of international tests.

Sod growers, tell all golfers about putting greens at home and you will sell 0217[®] Fylking Kentucky bluegrass (U.S. Plant Patent 2887) sod and seed.



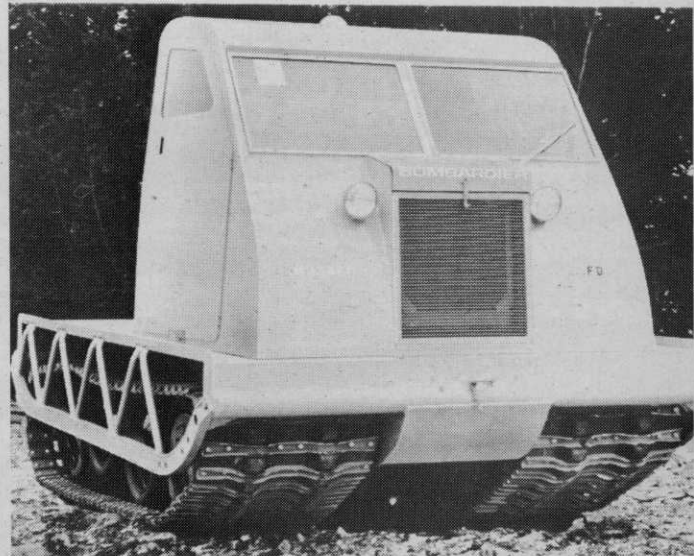
**FYLKING
KENTUCKY
BLUEGRASS**

Jacklin Seed Co., Dishman, WA. 99213



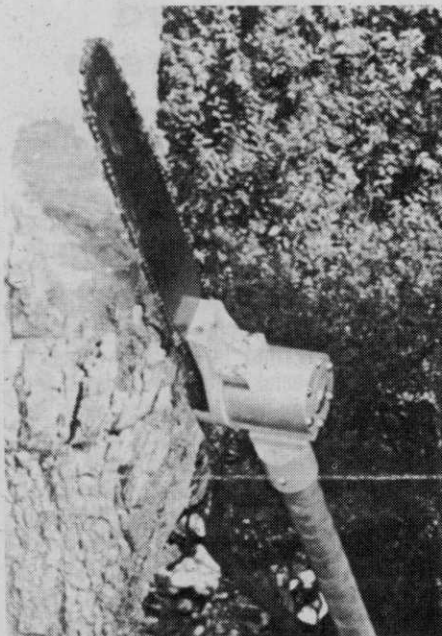
SMALL BACKHOE, Arps Corporation, New Holstein, Wis.

Model 708 is a new tractor-mounted (Arps Model RL) backhoe with a shorter work cycle. The key to its higher efficiency is a six-spool, open-center control valve which eliminates cylinder voids. This type valve is often found on large backhoes, but the Model 708 is the only one in its class that has it. The valve also provides cylinder overload protection and gives smooth, positive swing deceleration, eliminating cylinder rod buckling when boom and bucket forces interact. For more details, circle (701) on the reply card.



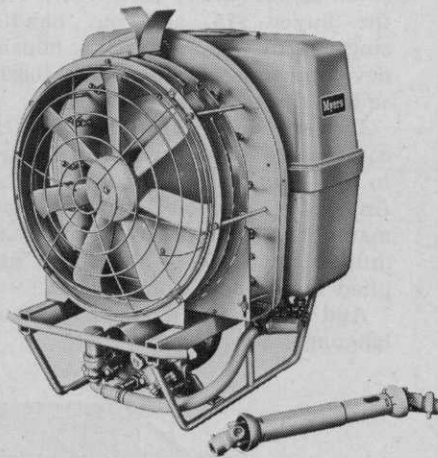
MUSKEG TRACTOR, Bombardier, Ltd., Valcourt, Que., Canada.

Power steering and a new final drive system designed to reduce tractor maintenance while improving off-road stability are features of the 1970 line. An improved tandem suspension system enables the vehicles to operate trouble free in extremely treacherous swampland and bogs, or over hilly terrain. Two models are offered, a tractor with rear-mounted engine and the S Carrier (pictured) with front engine and 6½x7-foot rear deck. 190 hp. engine hauls 6,000-lb. payload. For more details, circle (702) on the reply card.



HYDRAULIC CHAIN SAW, Limb-Lopper Co., Sante Fe Springs, Calif.

The Mark II Model HCS is latest addition to line of tree-trimming and pruning tools for use by line-clearing contractors, public utilities, and municipalities. Described as the lightest power saw on the market, details of weight and size, extended reach, narrow profile, power, speed and cutting capacity are shown on a data sheet that's available. For more details, circle (705) on the reply card.



PTO AIR SPRAYER, F. E. Myers & Bro. Co., Ashland, Ohio.

The A32TM model 'Mity Mist' is a tractor-mounted PTO sprayer designed for orchards, high density plantings, vineyards, crops and turf. According to manufacturer, this compact mist sprayer delivers more air for better reach, with a 32" AXIAL-FLOW fan. It requires only 20 hp at drawbar. Both dilute and concentrate sprays can be handled in either liquid or wettable powder form. For more details, circle (706) on the reply card.



ALGAEICIDE-FUNGICIDE, Applied BioChemists, Inc., Milwaukee, Wis.

Citrine is a new product for the elimination of all forms of algae. A chelated copper compound, it will not precipitate out in water and is safe for all other living things when used as directed. Used in lakes, ponds, irrigation systems—any body of water. Citrine also has proved to be an excellent fungicide for controlling several fish diseases. For more details, circle (707) on the reply card.



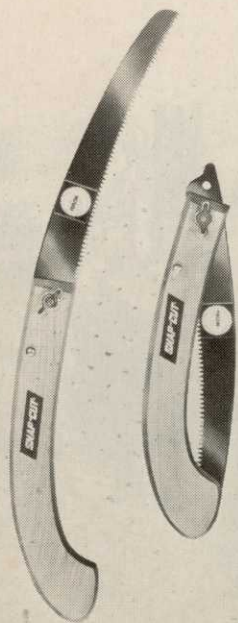
STUMP CUTTER, Wayne Manufacturing Co., Pomona, Calif.

A completely new design, heavy-duty Stump King puts emphasis on productivity through wider range cutting and quicker setup time. Compact dual cutting wheels offer 64" reach through the unique swivel-mounted, articulating cutting head; a 27" cutting depth below ground level; and an 147" range of lateral movement of the head on its semi-circular traverse rail, allowing cutter to get at clustered stumps without relocating. Chip dust is kept to a minimum and the cutting head remains cool with the exclusive built-in waterspray system. For details, circle (703) on reply card.



TREE SPADE, Vermeer Manufacturing Co., Pella, Ia.

By mounting Vermeer's TS-30 tree spade on its M-30 Ditchmaster Tractor and adding a new Vermeer high-capacity loader on the other end, the new model 30-30 provides maximum versatility for all small tree-moving operations. Center articulation and optional high flotation tires permit the unit to maneuver easily on almost any terrain and within confined digging and planting areas. The 30-30 digs, lifts and transports a 30" diameter by 36" deep ball. For more details, circle (704) on the reply card.



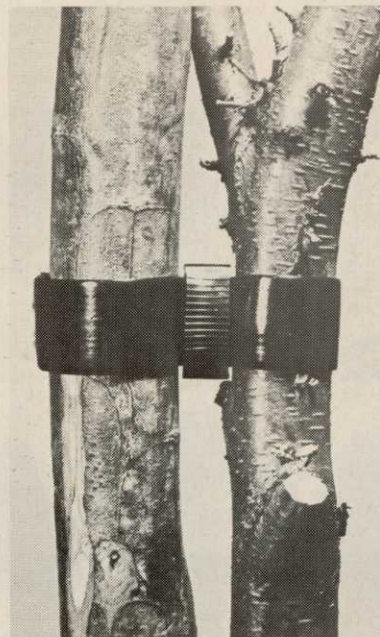
TEFLON-COATED SAW, Seymour Smith & Son, Inc., Oakville, Conn.

This Snap-Cut saw won't rust, gum up, stick or get messy, thanks to a coating of DuPont TEFLON-S. This is a coating developed especially for rough applications . . . doesn't wear, chip or peel but "work burnishes" to a glossy satin-smooth finish that makes the saw cut faster, easier, smoother. Folds neatly; has pull or draw-cut 10" blade. For more details, circle (708) on the reply card.



EARTH AUGER, Johnson's Industrial Supply Co., St. Louis, Mo.

18-inch auger works off any 1/4" or larger electric drill to make holes ideal for fertilizing, watering and aerating trees and shrubbery. Auger drills a 1 1/4" hole up to 18" in all types of soil. Loosened soil is elevated up and out. For more details, circle (709) on the reply card.

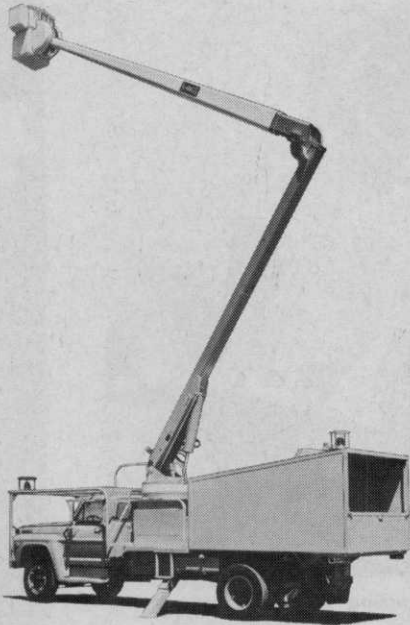


TREE TIE, Langdon, Ltd., London, England.

Rainbow tree tie with central spacing collar prevents rubbing between the tree and supporting stake. The encircling strap is flexible and expands to allow the tree to grow without scarring or strangling the trunk. For more details, circle (710) on the reply card.

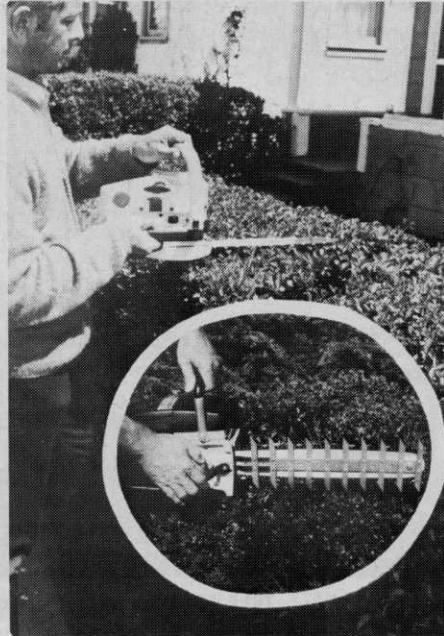


New Products for the Tree Industry



CHIP BOXES, Mobile Aerial Towers, Inc., Fort Wayne, Ind.

Three standardized chip boxes for tree trimming work are announced as stock accessories available with "Hustler" 4D Series and the "Linesman" 5TD Series reverse-mounted HI-RANGER Towers. All sizes are 90" in width and essentially identical in design and construction. Lengths are 84", 102" and 120"; and over-all heights 55", 55" and 64". For more details, circle (711) on the reply card.



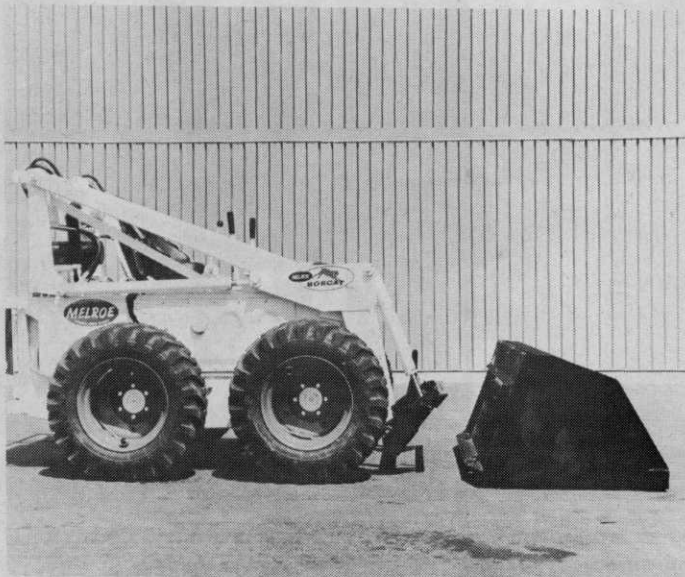
BRUSH TRIMMER, Granberg Ind., Richmond, Calif.

CLIP-N-TRIM converts lightweight chain saws into powerful trimmers of even the toughest and thorniest growth. It provides fast cutting of thicknesses from paper-thin foliage to branches up to one-inch in diameter. Specially designed for hedges, pruning and shaping trees, and cutting rugged brush along with troublesome weeds. Made in two widths for 12", 14", 16" and 20" bars. For more details, circle (712) on the reply card.



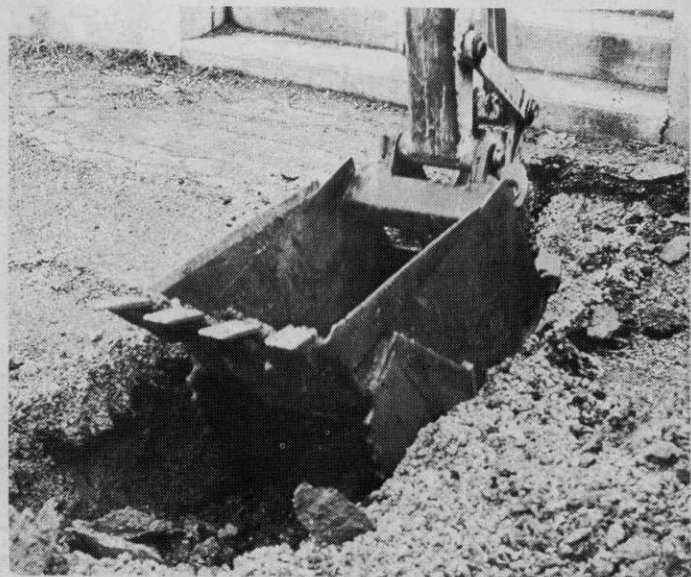
DECORATIVE BARK, Boise Cascade, Boise, Idaho.

Decorative chunk bark is now available in a new package, color coded to indicate chunk size: Magenta is 1½" to 2½"; orange is ¾" to 1½"; and blue is ½" to ¾". The package is 6-mil polyethylene bag. Bark is effective groundcover around shrubs, flowers, trees and along walkways. For more details, circle (713) on the reply card.



BOB-TACH SYSTEM, Melroe Division, Clark Equipment Co., Gwinner, N.D.

System permits operator to change attachments in seconds, without leaving machine. Under normal conditions, the switch from bucket to pallet fork may be made in less than 20 seconds. The system is an accessory for Melroe 600 (1,000-lb. capacity) models and is standard on the Melroe 970 (3,000-lb. capacity) series. The Bob-Tach is a self-tightening wedging mechanism. A single lever actuates the spring-loaded wedges on the 600 models, while two levers perform the hooking and unhooking on the 970. For more details, circle (717) on the reply card.



BACKHOE BUCKET FROS-TEETH, M & W Gear Co., Gibson City, Ill.

FROS-TEETH that let tractor-mounted backhoes dig readily through four and five feet of hardest frozen ground have been introduced by M & W Gear Co. FROS-TEETH backhoe bucket side saws are quickly attached or removed, but do not need to be removed for ordinary work, as they do not interfere with the regular operation of the bucket. Available for Case, IHC, John Deere, Ford and Davis backhoe buckets. For more details, circle (718) on the reply card.

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709 710 711 712 713 714 715 716 717
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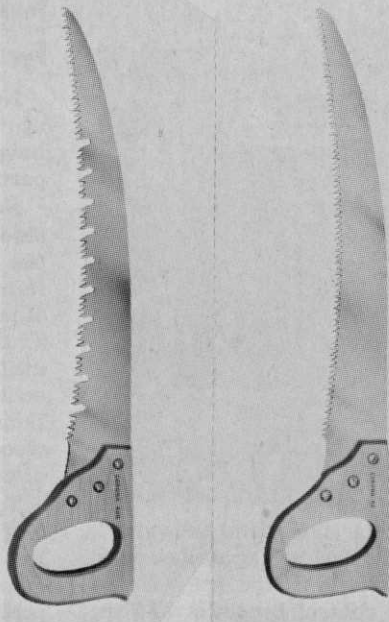
DULUTH MINNESOTA





CHAIN SAW, Orline Products, Los Angeles, Calif.

Company says its 149 Mustang is the lightest 14" chain saw on the market. Complete with bar and chain, it weighs 10½ lbs. Has 3.6 to 1 gear drive. Automatic oiling assures adequate lubrication of bar and chain while running. Powered by O&R 1 hp industrial gasoline engine. For more details, circle (714) on the reply card.



PRUNING SAWS, Corona Clipper Co., Corona, Calif.

New saws are No. 46, left, and 46R. Saw No. 46 is 25 inches long with a Sheffield steel cutting blade and hardwood handle. Its mate, No. 46R, is the same but with the added feature of raker, self-cleaning teeth. Both saws weigh 1¼ lbs. each. For more details, circle (715) on the reply card.



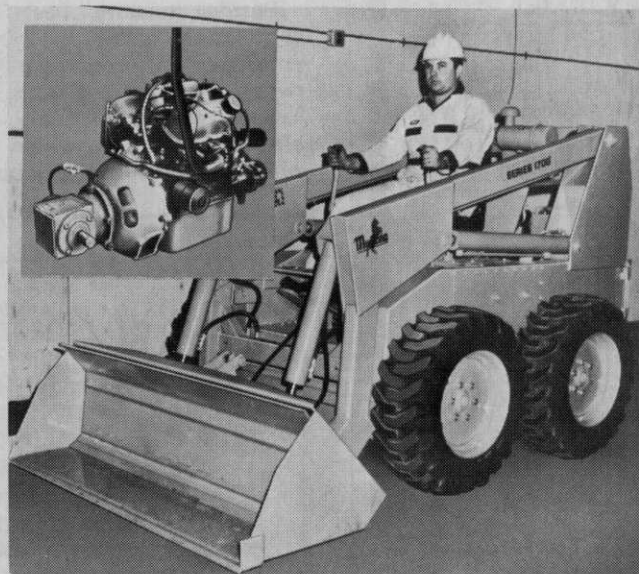
BARK PRODUCTS, Premier Peat Moss Corp., New York, N.Y.

Decorative bark, for garden pathways, planters and landscape, comes in three sizes: ¼-½"; ½-1"; and 1-2½". Bark Nuggets and Mini Nuggets are selected pine bark and are used to beautify any ground areas. Bark Nuggets are ½-1½" and Mini Nuggets are ¾-¾". All bark products are available in 3 cu. ft. weatherproof plastic bags and cover 36 sq. ft., one inch deep. For more details, circle (716) on the reply card.



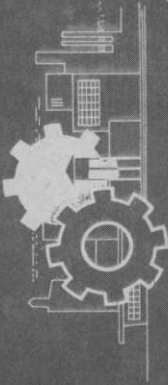
CHAIN SAW, John Deere, Moline, Ill.

John Deere introduces four new models of chain saw: Model 12 has 2.8 cu. in. engine, 15-inch guide bar, and 9½-lb. engine; Model 15 has a 3.1 cu. in. engine, 15-in. guide bar, and 10 lb. engine; Model 17 has a 3.6 cu. in. engine, 17-in. guide bar, and 12½ lb. engine; and Model 19 has a 4 cu. in. engine, 19-in. guide bar, and 13½ lb. engine. All four have a patented "roller-nose" at the tip of the guide bar. For more details, circle (719) on the reply card.



INDUSTRIAL LOADER, Owatonna Mfg., Owatonna, Minn.

A Torque Converter combined with a Ford water-cooled V-4 engine is now available on the Owatonna Mustang 1700 loader. This new equipment acts as an automatic drive and cushions the engine against shock loads, thus adding years to the operation life of the machine. The Torque Converter unit also prevents engine stall under even extreme operating conditions, and eliminates the maintenance and service problems of variable speed belt drive. For more details, circle (720) on the reply card.



New Products for the Tree Industry



Arab's Lawn Advertising Wins Customers and Awards

"Color It Green" is the theme of a lawn control campaign instituted by Arab Termite and Pest Control of Florida, Inc., and the slogan has netted the company many customers plus several advertising awards.

The Arab "Color It Green" Junior Poster billboard, won first place in its category in the Tampa Advertising Club "Addy Awards" for 1970, and then walked off with first place

in the Florida state "Addy Awards" competition. The poster design was adapted to serve as the front cover for a lawn control brochure and as a design for bus benches.

Arab has been serving the Florida West Coast for the past 12 years. Lawrence E. Davis of Clearwater is president of the Florida franchise. Offices are located in Tampa, St. Petersburg, Clearwater, New Port Richey, Bradenton-Sarasota and Orlando.

The lawn control service is under the supervision of a professionally trained nursery-landscape specialist and offers customers control of insects, lawn diseases and nematodes, in addition to a lawn fertilizer program.

Besides termite, pest and lawn control, the company has recently embarked on a roof-cleaning service which is receiving excellent customer acceptance. The cleaning eliminates mildew which forms on roofs in a sub-tropical climate.

New Label Clearances For Tordon Herbicides

New recommendations for the use of Tordon 101 herbicide mixtures have been cleared by the U.S. Department of Agriculture.

New uses for the industrial herbicide product include clearances for the application of Tordon 101 on railroads, highways, pipelines, and other communication lines as well as the previously registered use on utility rights-of-way. Also included on the new label are recommendations for the use of the material for weed control as well as the control of woody brush species.

Tordon 101 herbicide, a product of The Dow Chemical Company, has been widely used for utility rights of way maintenance since the product was introduced in 1963.

Under the new label, Tordon 101 must be applied with a drift control system when applied by air. In ground application it can now be used in high volume sprays in a water mixture or as a low volume spray utilizing a drift control system.

Tordon 101 will provide effective control of many of the toughest weed species. It is effective against such problem weeds as Canada thistle, field bindweed, Russian knapweed, ragweed and several others.

Among the woody plants and vines that are controlled by Tordon 101 are alder, wild rose, bracken fern, maple, oak, hickory and most evergreens. In addition, Tordon will effectively stop the Kudzu vine, a special problem in the Southeast.

For more information, circle (722) on the reply card.

KEEP AMERICA BEAUTIFUL



"The Pioneer in Foliar Feeding"

Honored by American Horticultural Council "for demonstrating in a practical way that plants could be fertilized through their leaves; for being the first to develop and market an effective plant food for foliar feeding; and for opening the way to a new cultural practice in horticulture."

RAPID-GRO

Pacific Northwest Pesticide Applicators Meet at Portland, Ore., Sept. 10-12

Regional pesticide applicators — those members of the Pacific Northwest Pesticide Applicators, Inc. — stage their 1970 Sprayorama at the Thunderbird Motel, Portland, Ore., Sept. 10-12.

On the program for Sept. 10 will be a special tour of contract applicators in the area. Formal registration begins at 8:30 a.m. on Friday, Sept. 11. The program will include Dr. Spencer Davis, Jr., plant pathologist at Rutgers, Keith L. Davey, president of Davey Tree Surgery, Ltd., of San Francisco, Arthur Edwards of Weeds Trees and Turf magazine, and Dr. James Witt, Dr. Leon C. Terriere, Robert Every, and Dr. Virgil Freed, all of Oregon State. This annual Sprayorama — the only meeting of organized pesticide applicators in the nation — will feature both practical and technical aspects of the contract applicator business. Details on attending (for both members and non members) are available from L. F. Sefton, president of the group, at 5600 S. W. Rosewood, Lake Oswego, Ore. Or you may reach Sefton by phone at 6:00 p.m. Pacific time. Tel. (503) 636-6443.

Chemists Find Additives That Break Down DDT

Two chemists at Aerojet-General Corporation have discovered a way to break down DDT in as quickly as four hours, or at any predetermined length of time.

Louis Rapp, manager of research and technology at Aerojet, called the achievement perhaps "the best thing since DDT itself was discovered."

The chemists had been working under government contract to find a control for the residual characteristic of DDT which makes it one of the most effective chemicals discovered, yet the very trait that brought about a virtual complete ban of its use about a year ago. Critics charged that residual DDT was endangering species of wildlife.

Keith Sweeney and Rod Fischer at Aerojet developed an additive containing zinc or aluminum. The powder of precipitated zinc (or aluminum) is added to dry DDT and is then dusted or sprayed.

"The granules, fine as face powder, are coated to resist deterioration for several weeks, depending on thickness," said Rapp. In this way, he explained—by thickness—the length of time you wanted DDT to work for you could be determined.

"In the laboratory, applying the material without a coating, we've broken down DDT in as little as four hours."

It would be possible, Rapp said, to spray DDT now in stock then spray the additive later to decompose it. "But our basic concept has been to use coated material and apply both at the same time to avoid the cost of two sprayings."

The discovery came to light with the awarding of a second government contract to Aerojet-General for continued research. The second study will be to collect data to substantiate Rapp's claim that the compounds formed after DDT is decomposed are less toxic than DDT itself.

The additives break down DDT into two principal materials, Rapp said. These are zinc dichlorodiphenylethane and aluminum tetra (chlorophenyl) tetrachlorobutane.

"These compounds predominate, but others are produced," he said. "Our next study will be to confirm the non-toxicity of all these materials to marine life."

Counting field testing that must be done, Rapp estimated that the product still wouldn't be commercially available for at least one to

two years.

Aerojet-General is not a DDT manufacturer, and Rapp expressed the opinion that the company probably would grant licenses to other firms to market the product.

Asked whether he felt the DDT ban would be lifted, Rapp refused to make a prediction except to say the matter probably would be decided in the political arena.

The same query to a Department of Interior spokesman brought this reply: "Provided the additive works and fulfills the objective of the study, I would say that (DDT reinstatement) would be the ultimate purpose."

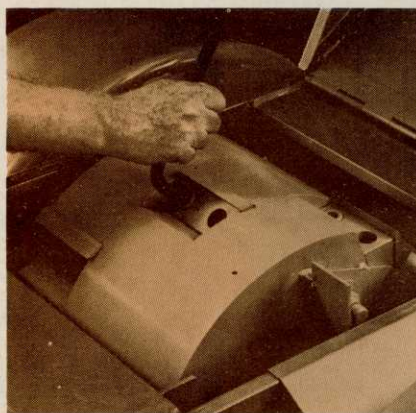
Secretary of Interior Walter J. Hickel, who announced the development of the additive and the second contract, has been quoted as saying that such a formula, giving a built-in self-degrading capability, "will allow the continued use of potent pesticides."

Mitts & Merrill Brush Chippers For...

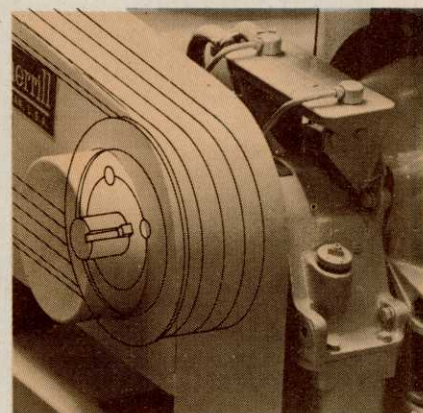


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Optional torque converter isolates engine and transmission from cutting shock to minimize maintenance. Makes operation virtually fully automatic; increases operator productive time. Available on all models.

Plus...

• **Positive safety-lock pin** for greater operator safety • **Swing-away, folding feed chute** protects cutting chamber; allows instant access and increases maneuverability • **Heavy duty construction** includes coil spring, torsion-type suspension, and box tubular steel frame.

For complete information, specifications and name of dealer nearest you, contact Mitts & Merrill, Inc., Dept. WTT-93, 109 McCoskey St., Saginaw, Michigan 48601.

mitts & merrill



USDA Imposes Restrictions To Stop Crane Fly Spread

Emergency plant quarantine regulations are being imposed to prevent the artificial spread of the European crane fly from recently discovered infestations in the State of Washington, the U.S. Department of Agriculture has announced.

Native to northwestern Europe, this crane fly is a pest of lawns, pastures, grains, and other crops. Since it was first reported in British Columbia, Canada, in 1965, ARS plant protection officials have maintained a watch for the flies in the State of Washington near the U.S.-Canadian border. Although flies have occasionally been trapped near the Canadian border in Washington since 1966, no established infestation was confirmed in this country until April, 1970, when larvae were found at and near Blaine in Whatcom County, Wash. The new emergency quarantine is being imposed as a result of these finds.

Emergency regulations provide for immediate control on the movement of articles that could spread the pest from the newly quarantined area in Whatcom County. Items subject to restrictions include:

soil, compost, humus, mulch, peat, and decomposed manure, plants with roots, grass sod, used mechanized cultivating and soil-moving equipment.

Such regulated items cannot move from the quarantined area unless they have been treated to destroy European crane fly infestation.

The European crane fly, *Tipula paludosa* Meig., has become a serious pest of lawn and pastures in the Fraser Valley of British Columbia since its discovery there. It has been estimated that growers in the Fraser Valley spent more than \$¼ million dollars to control the pest in 1969.

Merion Bluegrass Assn. Appraises Artificial Turf

Merion Bluegrass Association has published a report giving the advantages and disadvantages of artificial and natural grass. It was issued after months of survey and examining the pros and cons as given by experts. The text covers stadium use, golf use, and home use.

Samples of the 12-page booklet are available. For more information, circle (723) on the reply card.

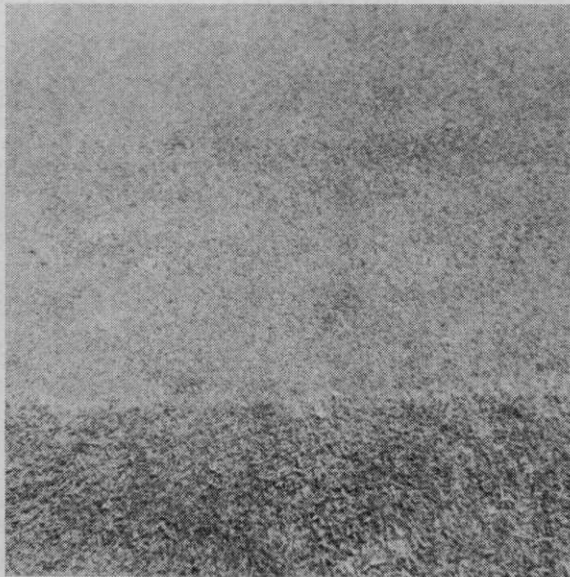
CIBA, Geigy Directors Announce Merger Proposal

Boards of directors of CIBA Limited and J. R. Geigy S.A. agreed today to recommend a merger of the two companies to their respective shareholders. A joint statement was issued in Basle, Switzerland, by CIBA and Geigy.

"Considerations of cost explain why a merger by way of absorption of one firm by the other had to be chosen instead of a combination of the two companies into a new company which both would otherwise have considered more appropriate and desirable. Accordingly, CIBA Limited will change its name to Ciba-Geigy Limited and J. R. Geigy S.A. will be merged into it.

"It is envisaged that extraordinary shareholders meetings of both CIBA Limited and J. R. Geigy S.A. will be held in Autumn 1970 to take a decision on the merger agreement."

Headquarters for Geigy in the United States is in Ardsley, N.Y. The American affiliate of CIBA is located in Summit, N.J. Both companies manufacture dyestuffs, pharmaceuticals, agro-chemicals and optical brightening agents.



LOTS!

The area of fringe and green shown above was treated with at least 100 times more CUTRINE than it would take for normal algae control in a body of water.

The picture, taken 5 days after spraying, shows Penncross Bentgrass was not affected in any way.

(By the way, a lake on the course was sprayed at normal levels at the same time. After 5 days the algae was GONE.)

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insect report



TURF INSECTS

GRASS MOTHS (*Crambus* spp.)

CALIFORNIA: *C. bonifatellus* heavy and damaging lawns in Fremont, Alameda County.

INSECTS OF ORNAMENTALS

BAGWORM

(*Thyridopteryx ephemeraeformis*)

KANSAS: Still hatching in Riley County. Damage heavy to evergreens throughout Sedgwick County. OKLAHOMA: Damage moderate to heavy on evergreens in several areas. Also damaging cypress, oaks, and raintree in Payne County. TENNESSEE: Heavy; damage severe to several cedars and arborvitae in Davidson County.

TREE INSECTS

ELM LEAF BEETLE

(*Pyrrhalta luteola*)

CALIFORNIA: Severely damaged elms in parts of Sacramento, Sacramento County. NEVADA: Larvae and damage light to date at Orovada and Winnemucca, Humboldt County. Damage noticeable in southern Washoe County. UTAH: Adults becoming more common on central area elms. Damage conspicuous at St. George, Washington County. NEW MEXICO: Heavy and damaging Siberian elm foliage at Farmington and Aztec, San Juan County. OKLAHOMA: Small second-generation larvae feeding in Payne County. Heavy in Mayes County. Light to moderate in Marshall County. WEST VIRGINIA: Heavy on several Kanawha County elms. Heavily damaged a Siberian elm in Marion County.

SPRUCE BUDWORM

(*Choristoneura fumiferana*)

MINNESOTA: Defoliation moderate to heavy on 12-15 thousand acres of balsam fir and white spruce on Kabetogama Peninsula east of International Falls, Koochiching County.

A CICADA

(*Okanagana rimosa*)

NEW HAMPSHIRE: Adults emerging and numerous on scrub oak and pitch pine at Ossipee, Carroll County.

PERIODICAL CICADAS

(*Magicicada* spp.)

MARYLAND: *M. septendecula* still active in Prince Georges, Anne Arundel, Baltimore, Harford, and Cecil Counties. Singing and egg laying confined to small heavily wooded areas. *M. septendecim* still active in Frederick and Washington Counties in mountain timberlands. Damage due to *M. septendecim* becoming more evident in counties east of Frederick County, although this species died out 2 weeks ago.

AN OLETHREUTID MOTH

(*Zeiraphera vancouverana*)

CALIFORNIA: Larvae collected at Big Lagoon, Humboldt County. Reared to adults. This is a new state record. The 0.25-inch larvae feed externally on growing tips of Sitka spruce (*Picea sitchensis*).

PINE TUSSOCK MOTH

(*Dasychira plagiata*)

WISCONSIN: Stripped foliage in 2,000-acre area of Jack pines 25-30 feet tall in northwest section by June 20 in Polk and Burnett Counties.



stump eater!

The new WAYNE STUMP KING® is here . . . it's a hungry machine! STUMP KING® chews up more stumps faster than any other method of stump removal. HIGH PRODUCTIVITY is achieved by quick set-up on the job and unmatched cutting range. Choice of 2 models — 37 HP and 65 HP.

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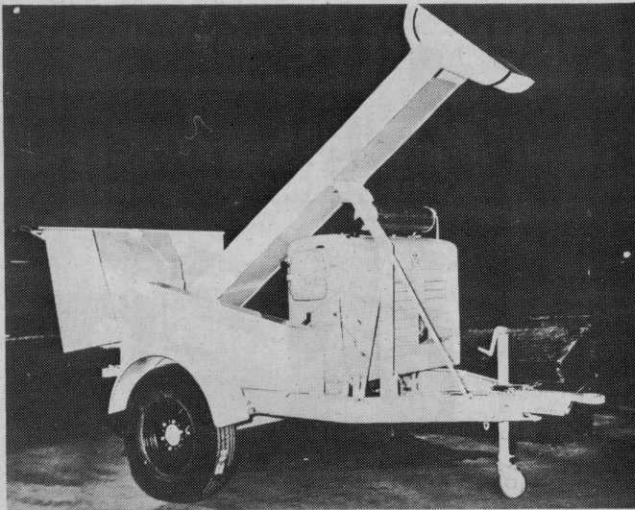
Team up with WAYNE BRUSH CHIPPERS . . . They can solve your brush disposal problems with high speed and economy . . . economy provided by exclusive 6 sided bed knife adding 50% more life than a conventional 4 sided knife. Multiple safety features assure maximum protection for your operating personnel.

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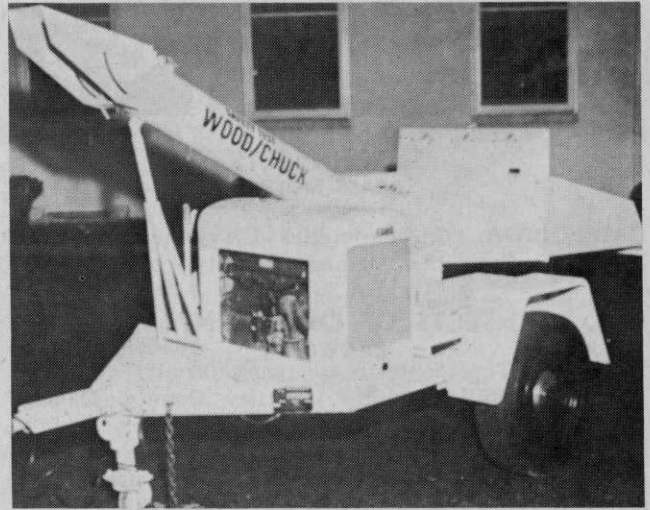


WAYNE MANUFACTURING CO.

1201 E. Lexington St., Pomona, Calif. 91766
SALES, PARTS AND SERVICE WORLDWIDE



M-B Company now owns the Fitchburg chipper.



Safety Test & Equipment Co., buys Wood/Chuck.

Two Wood Chippers Sold To New Manufacturers

Two wood and brush chippers are operating under new manufacturers.

Safety Test & Equipment Company, Inc., Shelby, N.C., has purchased the WOOD/CHUCK line from Pitman Manufacturing Company.

The M-B Company, New Holstein, Wis., has acquired the Fitchburg

Engineering Corporation's line of wood chipping equipment from the E. W. Bliss Company.

"We've redesigned and considerably improved the old WOOD/CHUCK," said Dennis A. Beam, Jr., STECO president. "For example, we've increased the weight of the flywheel to 350 lbs., and the line has been expanded.

"But we particularly want owners of the Pitman unit to know that

we can service their machines. We purchased all inventories—old and new, tools, jigs, dies, patents, copyrights, and paid-up manufacturing rights."

Total operations have been moved to Shelby, N. C. Correspondence should be directed to Safety Test & Equipment Company, Inc., Drawer 400, Shelby, N.C. 28150.

The transaction became effective in April. New models have been in

TWO GREAT PRODUCTS

TREATMENT #2

Pruning and Wound Sealer—Aids fast healing of tree wounds caused by pruning, mower scrapes and boring insects. Makes an effective seal that retains the insecticidal vapors of BOREKIL after this product is used to treat borers. Treatment #2 is available for over-the-counter sales or on-job use. Brushable formulations in quart and gallon cans will also be made available.



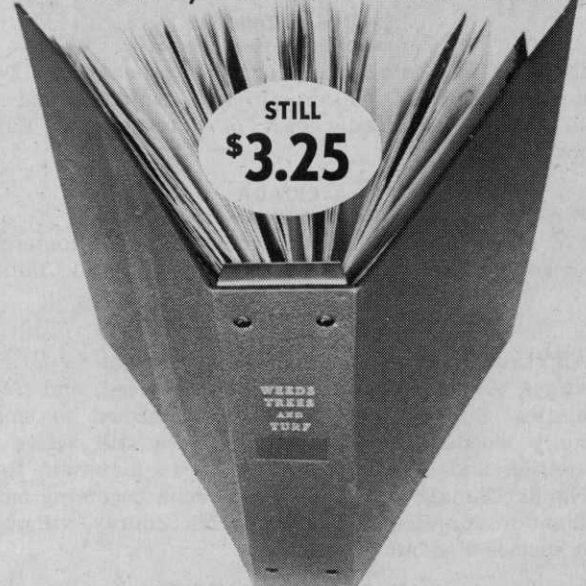
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Effective Borer Control—A single application with special injector gets to the heart of the borer problem right away. Boring is plugged and borers are killed with insecticidal vapor. Effective on trees, shrubs and flowers. Over-the-counter or on-the-job.

LETHELIN PRODUCTS CO., Inc.

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Mt. Vernon, New York 10550

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WEEDS TREES and TURF
9800 Detroit Ave., Cleveland, Ohio 44102

production for several weeks, with orders filled as far away as Canada and Alaska, Beam said.

The Fitchburg chipper line presently consists of four models, the largest of which will reduce 14½"-wide wood slabs. Units are available as stationary or trailer-mounted.

Sales, engineering, and manufacturing functions have been transferred to the New Holstein plant, according to Les Blumberg, M-B vice-president.

"This famous line of chippers will fit perfectly into our distribution system and other municipal product lines," said Schmidtman, M-B sales manager, "and we look forward to increased sales and top quality service through our large network of dealers throughout the country."

The M-B Company is one of the companies owned by Robert B. Evans, Detroit financier and industrialist.

desirous of locating Long Island's South Shore. Good salary, good benefits and good opportunity for right man. Reply, stating experience and schooling, marital status and salary required to Prudent Controls Corp., 1200 Merrick Road, Copiague, New York 11726.

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SPRAYERS, chippers, log splitters and other equipment at large savings. Let us know your needs. Equipment Sales Company, 4744 Sunrise Highway, Massapequa Park, N. Y. 11762.

RYAN sod cutter 18" with automatic cut off, like new, only cut 4 acres. Phone 653-4042 Davison, Michigan.

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LAWN GRASS SEED — Full line including sod-quality Merion, Fylking, bluegrasses, fescues, bentgrasses, ryegrasses, etc.

We specialize in custom mixing.

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SOD QUALITY Merion Seed for discriminating growers. Also Fylking, Delta Park, Newport and Prato bluegrasses as well as fine fescues. We will custom mix to your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837.

SOD

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and Tifdwarf. 100 acres of clean sod. Hybrid Bermuda 419 — 328 No-Mow, Tif Dwarf and other varieties. 7¢ per Sq. ft. F.O.B. We will arrange for truck. Bayou Pierre Turf Grass Farms, Inc., Carpenter, Mississippi 39050. Phone AC 601 922-3213.

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AUSTRALIAN BUSINESS — Agricultural Chemicals — Custom Applicators. This firm specializes in Agricultural and Industrial Weed Control. It is firmly established in three eastern States and there is potential for expansion to the remaining States and New Zealand. Opportunities in allied fields are excellent. An ideal proposition for a chemical or pest control company seeking a comprehensive introduction to the Australian Market. Any reasonable proposition will be confidentially considered by the Founder-Manager who is anxious to ensure the future of this unique organization before retiring. Address all inquiries to: "Chemicals," P.O. Box 767 G, G.P.O. Melbourne, 3001, Vic., Australia.

SMALL Tree Business for sale in Santa Barbara, California. Well established . . . excellent equipment. For details write David Gosnell, P.O. Box 4396, Santa Barbara, Calif. 93103, or call 805 963-2450.

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LONG ESTABLISHED, medium sized, general pest control firm expanding its tree care department needs General Working Foreman. Requires mechanically inclined person familiar with both fields and

CONTROL without EUTROPHICATION



Aqua-Trio controls aquatic weeds without promoting cultural eutrophication . . . by physically removing them.

Doesn't it make sense?

H-650 — HARVESTER — cuts and stores weeds in live bed hold.

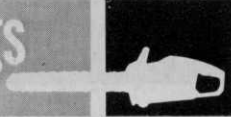
T-650 — TRANSPORT — mates automatically with Harvester . . . transfers load automatically for trip to shore.

S-650 — SHORE CONVEYOR — automatically transfers load to waiting truck.

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trimmings



MANUFACTURERS have considered nearly every obstacle that could be encountered while mowing. Yet a new one cropped up early one morning this summer at the Holiday Inn in Culpeper, Va. The mower was stopped cold in its tracks by a 300 lb. black bear.

The mower operator couldn't be reached for comment.

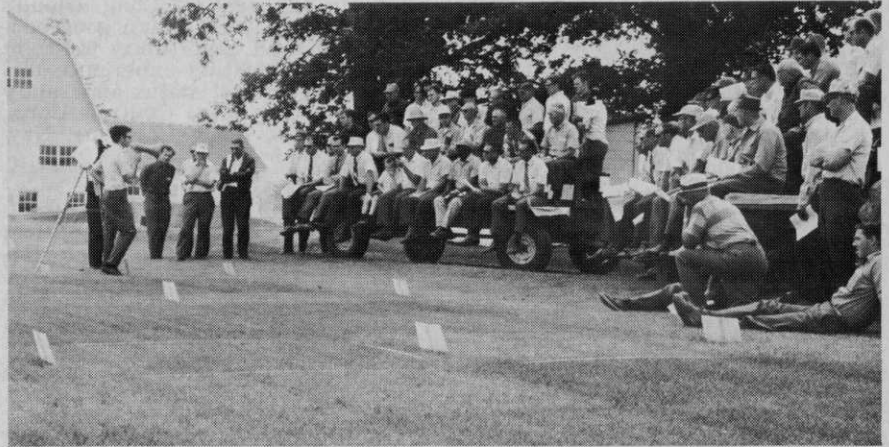
* * *

"A TROPICAL BEAST could Solve Our Lake Worry," reads a headline in the Auckland, New Zealand Star. Auckland botanist V. J. Chapman suggests bringing in the tropical manatee to eat the weeds.

The headline probably did solve the lake worry for many—who are now going somewhere else to have fun.

* * *

IN FRANCE, where folks have almost forgotten what water tastes like, there is concern over how much roaming the automobiles have been doing, and, in the process, killing off the citizenry. All too often the auto and its occupants have come out second best trying to escape from the French hallmark, tree-lined roads. To reduce the slaughter, the worst in Europe, the government has ordered the cutting of trees along hundreds of miles of



Turf response to different fertilizer application rates was discussed by Michigan State turf specialist P. E. Rieke during the University's Crop and Soil Sciences Field Day recently. Phosphorus tends to accumulate in the surface layer of soil, he said, and considerable leaching of potassium may occur when fertilizers are applied to the surface of sandy soils. The rate and distance of phosphorus movement in soils is small and normally not important because of its low solubility in soil water," he said. In test plots on sandy soil, some potassium leached beyond the 10-inch depth. Irrigation increases leaching. Such extreme leaching would not likely occur in soils with higher clay content because they would have sufficient capacity to hold the potassium.

national routes and the removal of hundreds of trees within cities.

As the New York Times concludes: "The assumption that when an automobile hits a tree it's the tree's fault is quintessentially French."

* * *

JOE McDERMOTT, president of the Midwest Turfgrass Growers Association, has issued a call for an improved sod cutter blade. "Surely there is someone in our industry somewhere who has a better blade made of better steel—or hard-sur-

facing process—or something that can help us," he said. The blades are expensive and wear out rapidly in soil with gravel and rocks in it.

For the benefit of Michigan's muck or peat sod farmers, a rock comes in various sizes and shapes and is hard like concrete.

* * *

LESTER ASPLUNDH, board chairman of Asplundh Tree Expert Company, is given credit for kicking a football 100 yards. He also admits that on another occasion, he caught his own punt.

industry people
on the move



NATIONAL GOLF COURSE DESIGN AND CONSTRUCTION COMPANY, a Pompano Beach based firm, has appointed Julius Boros, two-time U.S. Open Champion as its exclusive consultant on golf course architecture. Boros teams with Frank Batto, widely known designer. Officers of the year-old company are John R. Doran, president; Frank Batto, vice-president and general manager; Santo Madrazo, secretary-treasurer; and Jack Culbertson, sales representative.

* * *

LOFT'S PEDIGREED SEED COMPANY has appointed C. M. "Brownie" Brownell as head of production and development for special proprietary seed products in the Pacific Northwest states. In addition to his new duties, he will continue to serve Great Western Seed Company as vice-president and assistant general manager.

* * *

RICHARD J. PAHL has been named manager of special products for Great Western Seed Company. He will handle the research, production and distribution of spe-

cial ornamental products for ultimate sale through retail outlets in the U.S.

* * *

DAVID T. McLAUGHLIN has been named president and chief operating officer of Toro Manufacturing Corporation, Minneapolis. McLaughlin, 38, resigned the presidency of Champion Packages Company, subsidiary of U.S. Plywood-Champion Papers, Inc., business group to accept the Toro post.

* * *

ROBERT E. SCOBEE of Fort Wayne, Ind., has been honored by the Upjohn Company for outstanding sales achievement in 1969. One of four to be honored in the agricultural chemicals division, Scobee is a member and former secretary of the Indiana Golf Course Superintendent's Association and a director of the Midwest Turf Association.

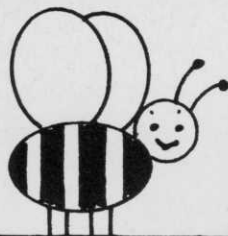
* * *

EUGENE A. SNYDER is the new president of Amchem Products, Inc. He succeeds Gerald Romig, who continues as chairman.

* * *

FREDERICK R. MICHA, newly appointed vice-president of sales for Monroe Tree Surgeons, Inc., Rochester, N.Y. has announced these appointments: **STEPHEN A. FRIEDMAN**, supervisor of the landscape department; **GLEN F. HOFFMAN**, arboriculturist; **ALBERT T. AY-LING**, arborist; **WILLIAM A. DYKSTRA** and **ERIC W. GILLETTE**, spray supervisors.

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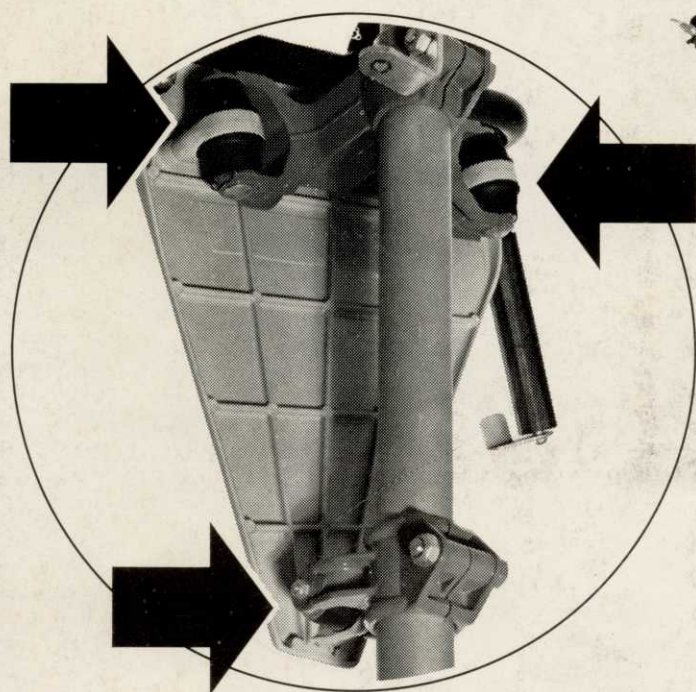
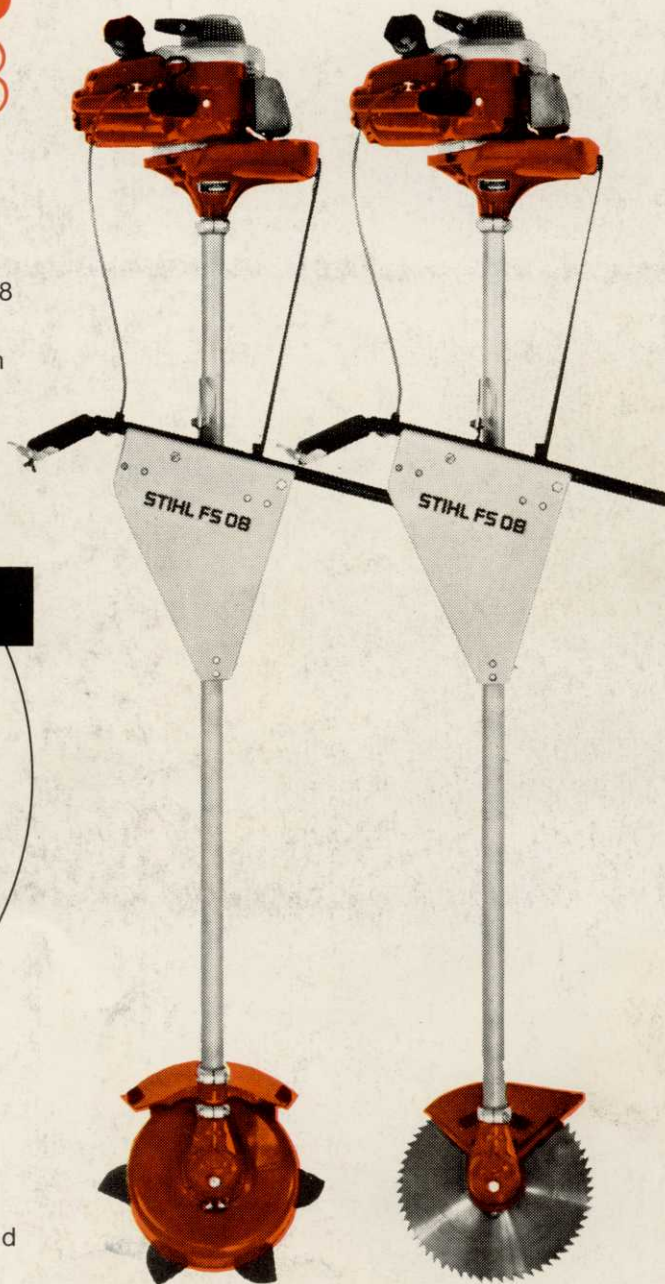
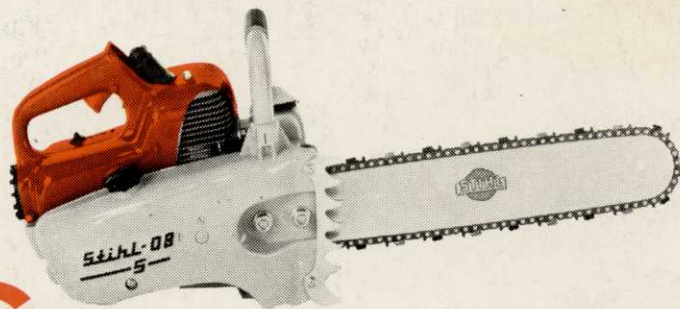


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circular saw. **This brush cutter features STIHL's famous AV anti-vibration system that absorbs fatiguing engine vibrations.** Lets you cut longer and easier with less effort.



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