

not being used for trimming, is used on various other municipal jobs. These include lighting maintenance, painting, and even hanging the city's Christmas decorations.

All told, Whittier municipal officials state that had they not taken the mechanized approach to keep abreast of their tree maintenance program, 3 times as many men would be required today.

Case No. 3

A new star has appeared in the Beverly Hills, Calif., Park Department. Starring in the Department's cast of sophisticated equipment for tree maintenance, the newcomer is breaking box office records in crew efficiency and productivity. Its noteworthy appearance has added mechanization to the non-specialized jobs of tree removal, replanting and material handling.

The new unit, which made its debut at the Park Department less than a year ago, consists of a 6-man crew cab chassis with a hydraulically-operated, telescoping crane, a utility body and a flatbed. All are incorporated into one integral package. This unit provides versatility which enables the machine to play the role of what otherwise would be 3 separate pieces. The combination truck crane and material carrier is a direct result of the Department's determination to retire its conventional "A" frame unit which was mounted on an antiquated army surplus chassis. The conventional unit was used to handle young trees weighing as much as 3000 pounds, and in replanting and rehabilitation programs. Although the older unit had ample capacity for these lifting assignments, its lack of bed space (the "A" frame required a majority of the truck deck) necessitated a second vehicle for hauling trees to the job site. On larger jobs requiring 5 or 6 men, a pickup truck had to be requisitioned in addition to the flat-

bed truck to transport the remainder of the crew to the job site. The crane unit would accommodate the crane driver and one man at the most. Due to its fixed, non-rotating boom, the truck always had to be positioned exactly when spotting trees into holes or loading logs onto the truck. Consequently, planting in congested areas often resulted in the truck being non-functional thus necessitating manpower in its place.

The limited versatility and age of the conventional unit dictated that it be retired in favor of a modern unit which could be employed in additional areas of the Department's work. In designing a replacement vehicle, the Department was determined to incorporate into one unit all of the functions that were provided by the 3 separate units. Their objective was to make tree planting and tree removal crews self-sufficient, with a minimum investment in mechanized equipment.

In doing so, standard crew cab chassis with a 157" wheel base and a GVW of 25,000 lbs. was purchased. Replacing the "A"

frame crane is a hydraulically-operated Pitman HYDRA-LIFT with a telescoping and rotating boom. Its mounted position, 26 inches directly behind the crew cab, does not sacrifice load space. A 10' deck, complete with a utility tool compartment, finalized the package.

The integrated unit has proven to be a time saver and its versatility enables it to do many jobs. On planting jobs, the unit is driven to the arboretum and positioned at the trees to be loaded. Its outriggers are extended for stability and the boom rotated to pick up and spot each tree onto the truckbed. At the job site, the procedure is reversed, as the trees are spotted into holes. The rotating and telescoping features of the boom permit the truck to be parked at curbside when parkway trees are being planted. This eliminates driving over curbs or interrupting the flow of traffic, a common occurrence when the older unit was employed.

All tools needed for the job are stored in a tool compartment built into the deck of the unit.

(Continued on page 32)

Tree Planting Tips

Poor tree planting practices can lead to heavy initial mortality and poor growth and form, reports Douglas Bryant, horticulturist with the Cooperative Extension Service of New Mexico State University.

Following are Bryant's suggestions for successful tree development:

- (1) Keep the roots moist until planted*
- (2) Guard against freezing injury to the roots*
- (3) Provide a space both deep and wide enough for the whole root system so that the roots aren't bent or folded*
- (4) Place the tree straight in the hole, never slanting it forward, backward, or to the side*
- (5) Plant the tree to a depth just slightly deeper than that at the nursery*
- (6) Water thoroughly to make sure the roots are in close contact with the soil and check often to see that soil is firmly compacted around the tree roots.*



Technician student, George Baker, mows tee at Cleveland Metropolitan Park golf course.



Students in technical school which is post-high school gain experience with equipment.



Technician student, John Healy, makes lab tissue tests for foliar nutrient analyses.



Technical school group gets practical as well as classroom experience such as sod installation.

Formal Training and Recruitment

A PROGRAM, set up and run at the local level, appears the best answer to date in supplying trained help for the horticultural industry.

Men in every phase of the industry—arborists, nurserymen, golf course superintendents, spraymen, landscapers, sod growers, park managers, and others—decry the fact that enough competent help is not available.

Today, one of the few local programs of any size which is attempting this job—recruiting students for formal training in this field is that of the Cleveland Public School System, Cleveland, O. This is a local school system program which trains students in horticulture during their final 3 years of high school. The program also includes a 2-year technician school for post-high school students, aimed at training foremen for the vegetation care industry. The program was started in 1962 with 17 high school students. Enrollment is now 349. The 1969 classes will involve 375 students, 25 of whom will be in the 2-year advanced technician program.

Vince Feck, a teacher with

can help meet the industry's labor needs

agricultural education training heads the Horticultural and Technical Vocational Division. Because of the scope of the program, and the important job of recruitment, he finds little time for teaching. Feck headquarters at the Cleveland Board of Education building in downtown Cleveland and administers the program which is carried at 9 of the city's high schools. The technician program, because of the need for field work, is handled at a number of the schools plus nurseries and various field sites in the area.

The overall program has the single purpose of training non-college students for industry jobs. Student guidance counselors agree that many students who do not succeed in academic subjects do much better if provided with vocational programs. The Cleveland program in the horticultural area is aimed at giving trade school or vocational training to the high schooler who is interested in the vegetation field. Such high school students naturally will start in industry as hourly employees. By contrast, the technical program

which offers 2 years of post-high school training plus required work in the industry during this

period, provides qualified employees with definite potential as foremen. Some of the techni-

Cleveland Board of Education Horticultural Technical School

Enrollment Details:

Eligibility: High school graduate or equivalent
Residence: None required (out-of-state students pay same fee as local enrollees).

Interest and Experience: Students accepted who are interested in non-crop horticultural training including training as arborists, spraymen, turf specialists, golf course superintendents, nurserymen, park management, municipal operations, and similar vegetation care positions.

Draft Status: Students enrolled full time receive the same draft status as regularly enrolled university students.

Schedule: A 2-year school beginning September and/or January.

Cost: \$145 per semester for tuition plus books and laboratory fees.

Information: Contact Vince Feck, Coordinator
Horticultural Technical School
Cleveland School Board
1380 E. Sixth St.
Cleveland, Ohio 44114



Technical school at Cleveland, O., gets young men ready for full-time careers in the broad range of jobs available in non-crop horticulture field. On the left is Bill Fry, manager at Forest City Tree Protection Company, Cleveland. Fry devotes time to teaching in technical school and at present has 2 students in the employ of his company. Next to Fry is Vince Feck, coordinator for the School. Student on the truck with spray gun is Angelo Cammarata and at right is Student Nick Costello.

cian students find and fill foreman jobs during their period of schooling.

School Credits Given

The Cleveland program should not be confused with work-study and similar Federal government programs which subsidize young, unemployed prospects. The Cleveland school program is a vocational type training for which formal school credits are given as is true with other types of vocational school programs.

For example, high school students from the sophomore through senior years can take a specified curriculum in the horticultural field. This major course of study is aimed at preparing students for both semi-skilled and skilled positions. Courses for the high school student include identification and culture of ornamentals and turf, seeding, sodding and renovation of lawns, control of weeds, insects and diseases, watering, fertilizing, mowing, spraying,

mixing soils for top-dressing, aerifying, and dethatching. Related skills are also taught in small engine maintenance, landscape planning and some soil science, botany, and physiology.

Students beyond the high school level in the 2-year technician program can specialize in either a turf management program or in ornamental horticulture. Their courses are more technical in nature and they are taught by instructors from the industry who teach only on a part-time basis. Courses are planned on an 18-week semester basis. Students are scheduled for 25 hours of class work weekly. Many work an equal number of hours as paid labor in metropolitan Cleveland companies specializing in the student's major subject matter area. Currently, the technical students are working for arborists, golf course superintendents, and landscapers. In the classroom and field laboratory sessions, they get practical

instruction direct from teachers who are in the vegetation care industry. Besides horticultural subject matter, technicians also receive training in business principles, communications, and mathematics.

Program Is Needed

Need for a program such as this at Cleveland need not be argued. In Ohio, which is typical of many other states, only about 19% of all high school students are engaged in some type of vocational education. A whopping 81% are enrolled in a general or college prep course, yet less than 22% or only about one in five has some type of definite plan for either college or post-high school training.

For a school system contemplating a program of this type, funds for operating will be a big factor. Feck says the cost of the program is high, partly because of the low enrollment per teacher (about 30) and because of the facilities and equipment which are essential to provide adequate instruction.

Available funds include both federal and state monies. The Smith Hughes Act, the George Barden Act, and the Vocational Education Act, 1963, combined to provide some \$225 million nationally in federal funds for the year ending June 30, 1967. Ohio's share of these funds amounted to almost \$10 million. Such federal money may be and is used for vocational education for those attending school, for post high school instruction, and for training and retraining people already in the labor market. Among other things, money can also be used for construction of vocational facilities, and teacher training and supervision. States and local school systems also have provisions in most areas for some type support for such training. The 2-year technicians in the Cleveland program also pay a \$145 per semester fee. They

are recruited from areas throughout Ohio.

Facilities in the Cleveland school system for horticultural training are extensive. For example, at the West Tech school, facilities include 7000 square feet of greenhouse space plus a classroom, built at a cost of \$200,000. Other facilities are less extensive. Currently being built is a greenhouse along with teaching and outdoor planting facilities on top of the 2-story South High building. This is slated for use during the fall, 1968 season. Additional plans call for a new horticultural educational center facility with extensive acreage for work experience.

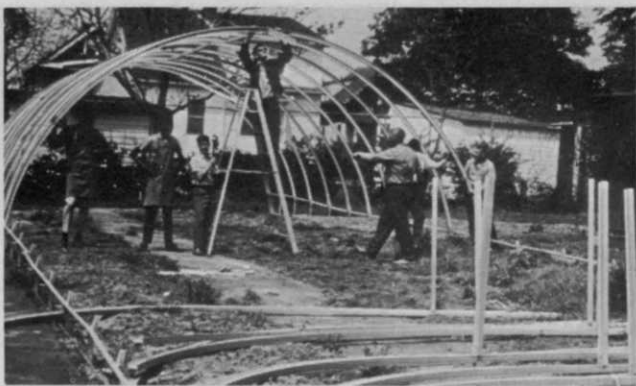
Problem Areas Exist

Naturally, a program as extensive as this must be questioned as to its effectiveness. It must deliver qualified employees for the industry, and it must attract students who have potential to become the type employee the industry demands.

Feck, who is directly responsible for the program, is the first to admit that many problems, both those on the surface and some which are deeply sociological, exist.

Cleveland, by the nature of its population make-up, has an inter-city youth problem, part of which hinges on poverty and part on race. The problem in many vocational training programs and in government sponsored work-study programs is that many of these young people are what are commonly referred to as unemployables. The question as it reverts back to the high school and technical horticultural training programs is the potential ability of the students being trained. Employers in the vegetation care industry, if they are to be competitive, have to have better educated help, employees capable of management, and more sophisticated equipment. They can not, and will not, trust their business and equipment to questionable em-

Plastic greenhouses such as this have been constructed by high school students at 3 schools.



West Tech High School has been beautified by borders planted by high school horticulture classes.



Golf green is constructed one year by high schoolers during their 3-year course.

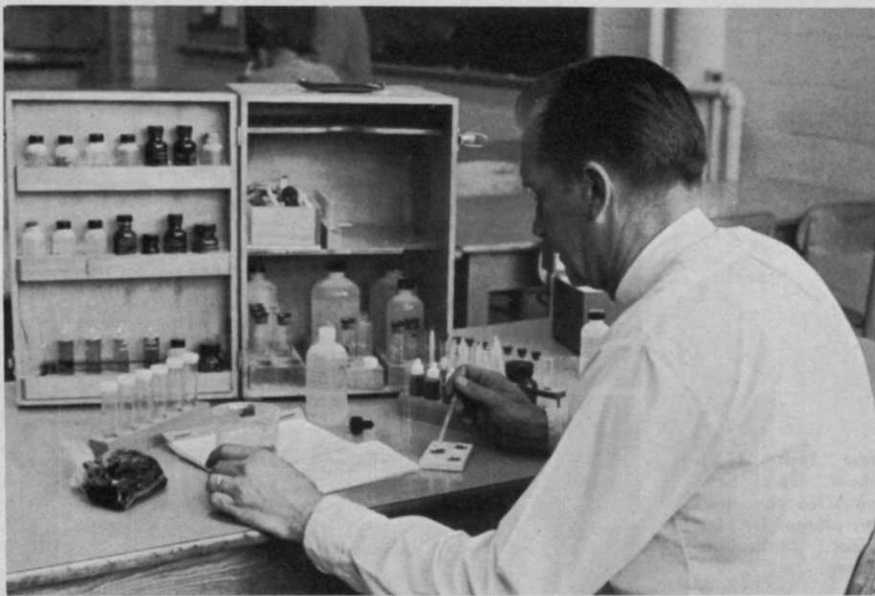


Annual garden at West Tech is planted seasonally by high school classes at that location.



High school students at Thomas A. Edison school operate soil shredder and other equipment.





Technician student, William Kilmer, in his second year of the technician course, uses a soil test kit for soil nutrient analysis.

ployees, however knowledgeable they may be in the subject.

The Cleveland experience is a matter of public record. There have been some failures but many have found a vocation in which they can and are succeeding. Frederic L. Witt, landscape architect for 50 Catholic cemeteries in the area, regularly hires trainee students. He reports finding a number of young men who have found a vocation and way of life and are working at it. Witt has high hopes for the program.

Top Students Attracted

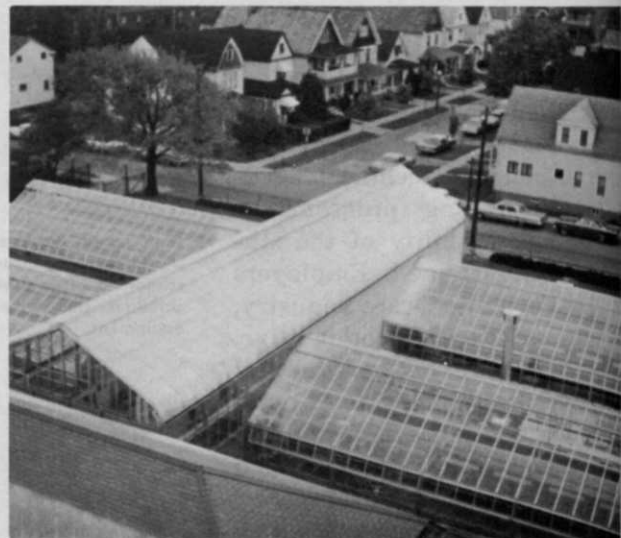
Because the horticultural training curriculum has been planned, as is typical for vocational training, for the student who does not plan for college, does not mean that only academically poor students are attracted. Feck says the opposite is more likely to be true. Many top students who do well academically, are taking the high school courses. A number, as a result of their high school experience, are majoring in related fields in college. Each semester, a number of the post-high school class of technicians are lost because they find that they want to pursue the training on a full-time college basis. This is not a pro-

gram loss, Feck states, but an overall gain for the industry.

Feck's belief is that more people in the vegetation care industry need to help in actively recruiting young people for training, both at the high school and post-high school levels. Feck emphasizes that the program is an industry conceived program. It operates with an advisory committee of industry, university, vocational, and educational leaders. Industry leaders are mostly those in the metropolitan Cleveland area who are hiring students on a regular basis.

The Cleveland program, though still relatively new, of-

Greenhouse complex, right, comprises more than 7000 square feet of facilities at West Tech High School.



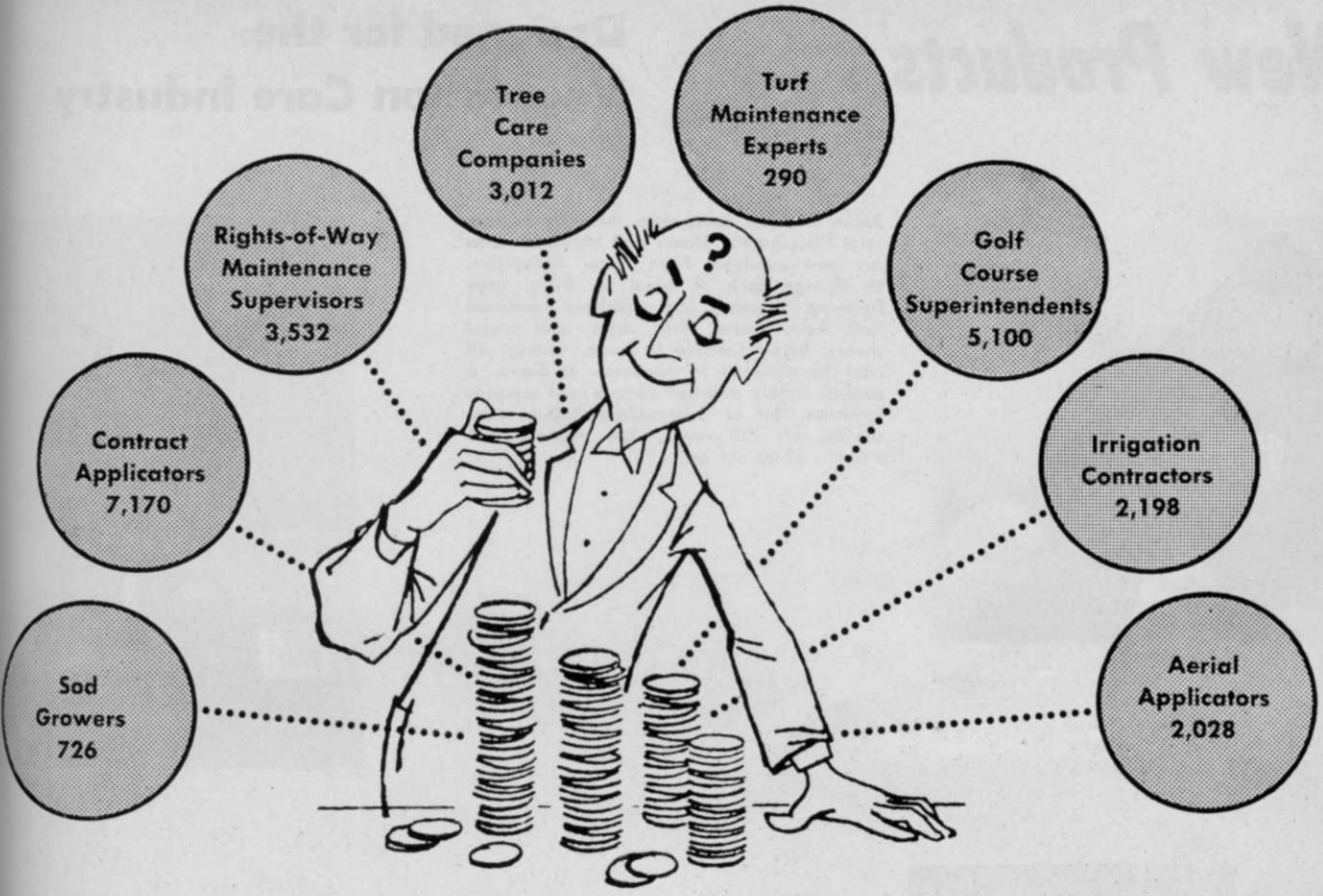
fers an example of a major effort to attract and supply qualified employees for the non-crop horticultural industry. It has attracted national attention, with numerous visitors from other areas of the nation. Toledo, O., and Los Angeles, Calif., representatives have visited the program and are developing similar training programs. If the system is sound, many more of the same type are needed.

Then it becomes industry's responsibility to this and similar programs to offer the competitive wages necessary to secure and maintain such qualified personnel.



Student in technical post-high school curriculum repairs divots on Cleveland Metropolitan Park golf green.

Puzzled ?



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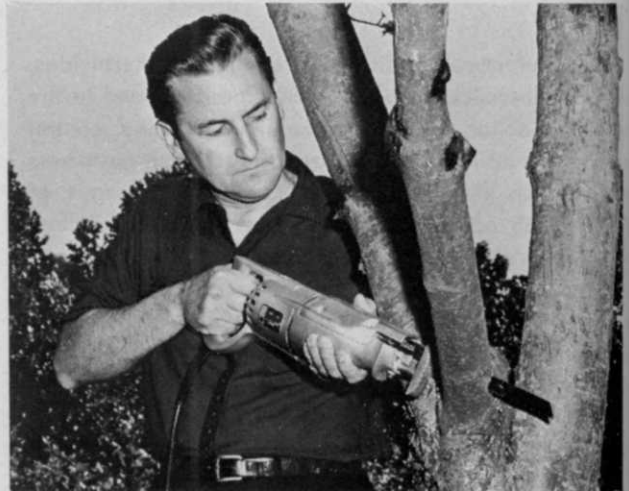


Boron Carbide Sharpeners that can replace steel files, honing stones and abrasive cloths are now available from Foster Enterprises, La Grange Park, Ill. Ideal for filing, edge finishing, dressing and polishing hardened tool steel, knives, bits, drills, and metal shears. Boron Carbide is tough, testing out next to diamond in hardness. It leaves a smooth, highly polished surface and removes scratches. Set of 3 (standard 1x8-in. size) consists of: 120 rough, 220 medium, 320 smooth. \$3.00 per set.

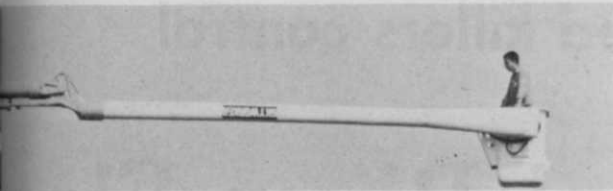


Spreadability is yours with the new Larson Broad-Caster, Model 400, according to the L. L. Larson Machine Co., Inc., Princeville, Ill. The single-belt drive unit spreads $4\frac{1}{2}$ times more area in 1 trip than ordinary spreaders, says Larson. Covering up to 20 acres per hour, it gives you an even flow of material (milorganite, fertilizer or seed) with uniform spreading—on curves, too! Ideal for close work around greens, tees, parkways and clubhouses, the spreader offers easy finger-tip control with no need to change application rates.

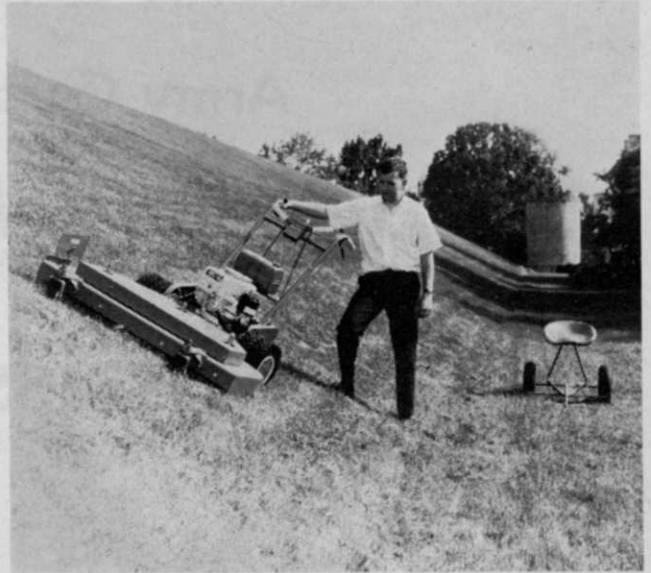
Martin Tire & Supply, Inc. has introduced a new flotation tire—the Martin Ultra-Flo 19.75-20. With an all-nylon, 18-ply construction, the tire has an extra wide tread for greater contact with sand and soft ground conditions and over-the-road use with a capacity of 11,750 lbs. Standard truck wheel and rim dimensions. Write the company, 154 N. Emporia, Wichita, Kansas 67202.



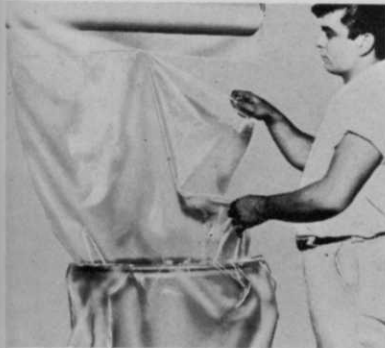
Black & Decker Mfg. Co., Towson, Md., has made available its versatile #982 Sabre Saw. While trimming branches, the saw makes a smooth, clean cut flush with the tree and can easily handle 6" to 9" limbs. Its light, compact construction enables you to get at those higher limbs: as you steady yourself with one hand, you can reach up and cut with the other—up, down or sideways. Available with 17 blades for every kind of material, the Sabre Saw can be used in a great number of ways on wood, metal, plastic, etc., says the company.



Transairco, Inc. has made available a new hydraulic aerial lift offering a work height of 55 ft. yet utilizing only 2 booms and stowing into a compact unit. The SKYWORKER ALPINE 55 can be positioned at any point between clear up and clear down and still provide absolute lift stability, says the company. A special safety valve locks the platform into position in case of power failure. Operated from an elevated or a ground position, the unit does not require mounting on a heavy truck. For details, write: Skyworker Div., Transairco, Inc., P.O. Box 360, Delaware, Ohio.



Bunton Co.'s new 52-in., heavy-duty "Lawn Lark" rotary power mower handles like a lightweight unit with finger-tip power steering, according to the company. Powered with an 8 h.p. engine, the unit features a 6-qt. fuel tank, 7 forward speeds, independent blade control, dual traction wheels and brakes, adjustable front guard, and a hinged discharge chute guard. An optional rider attachment allows the operator to ride open areas and medium grades, detaches easily for use on steep grades and uneven terrain. For further information, contact the Bunton Co., Inc., 4303 Poplar Level Rd., Louisville, Ky. 40213.



Heavy-duty polyethylene drum liners for the packaging and storing of bulk fertilizers are available from Polaris Plastics, Inc., 364 North Ave. East, Cranford, N. J. 07016. Available in rolls that can be used in automated filling of drums, the moisture-proof liners won't contaminate active ingredients.



A complete line of Teflon-S[®] coated shears has been introduced by the O. Ames Co., Parkersburg, W. Va. Hedge, grass and pruning shears with this harder-than-ever Teflon coating resist rusting, peeling, scratching and corroding. Even tree saps and grass juices won't stick, says Ames. The branch at left was cut with Teflon-S coated pruning shears that stay sharper longer and give crisp, clean cutting action—even on heavy branches.



Smithco, Inc. has introduced its "Red Ranger" carrier vehicle, designed specifically for "stop and go" service. Its separate driver's compartment enables the driver to get into and out of the vehicle easily. Capable of providing years of trouble-free service, it is ideal for the most rugged work, says Smithco. Of particular interest to golf course superintendents is its simplicity of operation and maintenance. Having neither transmission nor differential, it can be easily adjusted with a screwdriver or a wrench, according to the company. The "Red Ranger" can carry up to 7 men or 1000 lbs. For more information, write Smithco, Inc., Wayne, Pa. 19087.

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Mississippi River Flood



Spraying of vegetation along the Yazoo keeps fast-growing willows in check. Barge can spray 6 miles of riverbank daily.