1970 Society event. Most will subsequently appear in Journal form and are available at $5 for each Journal copy from the Society.

Gordon E. Smith, chief of the Environmental Biology Branch for TVA, Muscle Shoals, Ala., and host for the meeting, presented a resume of TVA control programs regarding Eurasian watermilfoil. First found in TVA waters in the Watts Bar Reservoir, this water weed had infested 25,000 acres by 1969 in eight TVA reservoirs. Damage, Smith said, depressed real estate values, stopped recreational activities such as boating, fishing, skiing, and swimming, clogged municipal and industrial water supply intakes, and provided extensive new breeding areas for mosquitoes in surface mats from July until midwinter.

Most efficient method of reproduction has been the spread by fragmentation. Either large, mature plant parts break off and float to new areas, or small 2- to 6-inch plant tips are abscised, float for a time, and then settle to the lake bottom often to develop roots and start new colonies. A single, 2-inch fragment, Smith reported, may take root and grow 4 feet or more in one season. During the second year, multiple stems arise from the rooted base and may achieve lengths of 8- to 15 feet.

Smith reported that more than $1.5 million had been spent in the '62-'69 period in treating an accumulative 35,636 acres. Treatment varied but mostly consisted of a granular preparation containing 20% 2,4-D acid equivalent (butoxyethanol ester) dispersed by helicopter at a rate of 100 pounds of granules per acre, a 20% granular formulation of butoxyethanol ester of 2,4-D on attaclay granules, a liquid dimethylamine salt of 2,4-D, both applied at rates of 20 and 40 pounds of 2,4-D acid equivalent per acre. Diquat was also used at the rate of 1 gallon (2 lb. cation Diquat) per acre. Such chemical control, Smith said, brought control but areas he said are normally infested by new fragments either from other areas or from a few surviving plants. In brief, he stated that even 99% control was insufficient to keep this weed permanently in check.

Experience with keeping raceways and ponds used by commercial trout producers free of weeds and algae was related by Dennis L. Vedder, director of fishery ecology, Marine Biochemists, Waukesha, Wis.

Vedder related that water weeds in raceways slow the flow of water and cause temperatures to rise. In the case of trout, a 3 or 4 degree rise during the summer can be lethal. Also, when water slows down, fecal deposits and waste food accumulates in the bottom and further adds to the problem of fertilizing weed growth. Weeds in turn make hard vegetation control programs. He has also been active in plant design and production, and in advertising and sales promotion along with market planning and development. His military service was partly concerned with armed services anti-crop and defoliation programs.

The KDM Company formally began operations July 20.

Dave Petersen Forms KDM Company

David P. (Dave) Petersen, formerly with Stull Chemical Company of San Antonio, Tex., has organized a new company to make and sell water-in-oil emulsifier systems. Petersen, who has 20 years experience in the herbicide industry—ranging from agricultural through industrial and military—will develop custom systems for use in both agricultural and industrial chemical formulations. The new company, operating as the KDM Company, P.O. Box 6814, San Antonio, Tex. Tel. 512-826-4040 will include chemical development and manufacturing services. Market planning and development services will be available.

Among Petersen's experience has been research and development of the original water-in-oil "invert" emulsion technology for pesticide applications. He worked closely with the first field applications in which inverters were used via helicopter applications. This work was mostly on industrial rights-of-way

"A Pair For All Seasons"

In spring, summer and fall, CUTRINE eliminates ALL forms of algae with safety to other living things... including turf grasses.

But algae can rob water of oxygen during the winter months, too... and when spring arrives, the algae growth gets the jump on you.

Winterize your water

Be safe for all seasons with

CUTRINE

Applied Biochemists, Inc. (414) 271-5870
1748 N. Farwell Ave., Milwaukee, Wis. 53202

Gentlemen: Please send complete information on CUTRINE to:

Name

Address

City

State Zip

Firm Telephone

For More Details Circle (120) on Reply Card
vesting of fish difficult and among other problems results in food waste since trout are sight feeders. Weeds also retard the growth rate of trout by diverting metabolism from growth to locomotion. Algae may even taint the flavor of fish flesh, Vedder related.

Vedder said that from a 1 1/2 to 1 pound conversion ratio, weeds can be a contributing factor to a 2 or 2 1/2 to 1 pond food to flesh conversion ratio. This obviously would raise the cost per pond of marketable fish flesh. Vedder related that for the past 18 months, Marine Biochemists of Waukesha, Wis., has been assisting trout growers in that state with chemical control of both weeds and algae. Marine is doing research involving toxicity and residual effects of various combinations of herbicides and their own product, Cutrine. Marine has also perfected a portable drip system for applying chemicals to flowing water. The US departments of agriculture and the interior have also done research in this area. Applied Biochemists of Milwaukee, Wis., has been working along like lines with trout and catfish growers throughout the country.

Harold R. Nickel, right, Greenleaf Nursery Co., Muskogee, Okla., assumes the presidency of the American Association of Nurserymen. He succeeds William Flemer, Ill, who was elected a director at large. L. J. Hilscher, Hilscher Nursery and Garden Center, Fort Worth, Tex., succeeds Nickel as director from Region V.

**Nurserymen Hear Progress Of Government Research**

Planet Earth is like a spacecraft tied to a dying supply ship. There is no source of fresh supplies, no untapped frontier, and we’re taking poor care of our life support systems.

Keynoter Dr. Henry M. Cathey of USDA’s Agricultural Research Service, conjured this cosmic view of our environment at the 95th convention of the American Association of Nurserymen recently in San Francisco.

We must get down to earth, however, to attack the multitude of problems, he said.

“We need to fragment the environment crisis into many small goals which are within the grasp of a part of society. We, the horticulturists, must apply our expertise in solving these problems through the use of living plants.”

Plants have the life-giving function on Spaceship Earth, Cathey reminded, of recirculating carbon dioxide and oxygen. To maintain the present level of photosynthesis on earth, we must recycle all of the CO₂ every 250 years, he said.

Man-made pollution is steadily reducing the efficiency of plants to accomplish this task, he added.

Chemicals in the air, he illustrated, such as ozone, sulfur dioxide, carbon monoxide, ethylene, and so on, affect the life support systems of plants. We use an excess amount of water to grow things, and in the process leach materials that contaminate our fresh water supplies.

Man has brought almost “constant moonlight” to the plants that live where the Spaceship Earth crew lives—the urban environment. Urban lighting often has attracted insects that damage plants, and the types of lighting also have upset the onset of dormancy of some plants, resulting in damage.

While there may be too much of the wrong kind of light at night, Dr. Cathey reported that, as the result of air pollution, plants in our urban environment are receiving 10% less light than they did a generation ago.

The goal of nurserymen, he said, cannot be just to grow more plants at less cost, assuming that the needs for plants will increase and that man and his life styles will remain unchanged.

“Methods we will use to propagate, grow, and protect our plants must change to battle the constantly modifying closed system of our spacecraft,” he said.

“We will be too impatient to wait years to determine if a seedling possesses desired color, form, resistance, sound baffling, fragrance, or tolerance of polluted air, soil and water. We will learn to relate the early stages of growth with the desired performance of mature plants. We will resort to encouraging plants to utilize their own innate characteristics to ward off pests and diseases.”

R. D. Lane of the U.S. Forest Service, reported that federal research effort is now focused on insect control, management of forested municipal watersheds, and air pollution.

Two major projects at Lane’s station in Upper Darby, Pa., concern the discovery and development of biological agents for insect control. Some have been found, Lane said, and that details are now being worked out on production and safety.

Research new this year, Lane continued, concerns a project with Health Education and Welfare with the objective of finding hardwood
Recipient of the 1970 AAN Retail Advertising Awards and Honorable Men- 
tions are, from the left: Itsuo Uenaka, Cupertino Nursery & Florist, Cupertino, 
Calif.; Henry H. Chase, Sr., Chase Nur-
sery Co., Chase Ala.; William Harlow, 
John Harlow’s Nursery, Tucson, Ariz.; 
Angella Musso, Pine Knoll Nurseries, 
Suffern, N.Y.; Donald Kamban, Schoen-
brunn Evergreen Gardens, New Phila-
delphia, Ohio. Recipients not able to 
attend are Klonsky Landscape Associ-
ates, Inc., Cedarhurst, N.Y.; Gibbs 
Home & Garden Center, Jamesburg, 
N.Y.; and Holsinger Nursery Co., Kan-
sas City, Kan.

BECK’S BIG ROLL SYSTEM...
HARVESTER, LOADER, LAYER

Use your 3-point hitch equipment

This is the fastest system on the market. Cut and roll up to 1200 
yards per hour without manual handling of sod, and lay it mechanically 
as fast as it’s harvested. Inexpensive tubular reels take less space 
than pallets, are lighter, last longer, and permit easy loading and un-
loading with a fork-lift mounted on a 3-point hitch. All lifting and 
handling is done by machine. Because it slashes labor costs for the 
landscaper, it is a sales machine for the grower. Stretches sod 3% 
to 5%. Leaves lawns smoother with fewer seams and joints.

For more Information, write:
BECK MANUFACTURING COMPANY
P. O. Box 752 • Auburn, Alabama 36830

September, 1970
MAKE LAWN RAKING A BREEZE

ANALYTICAL PHOTOGRAPHS

Converts your rotary mower in minutes into a Power Rake and Thatcher

To loosen & remove dead grass

To Mulch leaves

Help prevent lawn fungus

Aerates lawns, allowing new seeds to grow

RAKE-THATCHER ATTACHMENT, Rake-O-Matic, Lindenwood, Ill.

This attachment is for rotary lawn mowers. It thatches, loosens and removes dead grass, helps prevent lawn fungus, allows lawn to breathe for better growth. The Rake-O-Matic is quickly installed and comes in a 10-pack/weight of 17 lb. Comes complete with mounting hardware and installation instructions. For more details, circle (704) on the reply card.


New features have been added to the 1970 line of power rakes and aerating units. The features include a front-mounted lifting bar and an out-of-the-way kickstand, which combine to make transporting and starting easier and more convenient. The 1970 Powerslice is powered by a 5 hp Briggs & Stratton 4-cycle engine. It’s available with 6, 8, or 15 straight or offset blades. It covers 20-inch swath and has two-inch deep slicing range. The semi-self-propelled 1970 Power rake is equipped with rubber tires and zirk-fitted bearings for easy, complete lubrication. It rakes a 20-inch swath. For details, circle (705) on the reply card.

SICKLE BAR MOWER, Year-A-Round Cab, Corp., Mankato, Minn.

The Jari line of sickle bar mowers is now being produced by Year-A-Round Cab. A full line of parts is available. Highways, parks, institutions and resorts are among the biggest users of Jari Mowers. They are especially useful under fences and in uneven terrain such as ditches alongside roads. For more details, circle (706) on the reply card.

LAWN SWEEPERS, Deere & Company, Moline, Ill.

One sweeper is designed for towing behind a lawn and garden tractor or riding mower and has a 31-inch sweeping width. The second is a push-type with 26-inch sweeping width. The 31-inch pull-type has heavy-duty plastic hamper with easy emptying direct from the tractor seat. The 26-inch push-type has a reinforced plastic hamper with easy lift-out emptying, and can be converted to a pull-type with the addition of an optional hitch. Both have three replaceable, polypropylene brushes. For more details, circle (701) on the reply card.
POWER SWEEPER, Lindell Pattern Works, Fresno, Calif.

New changes have been announced for some of the power sweepers and blowers. All hose models are now equipped with heavy-duty 2-ply plastic hoses. Model 722-30 shown offers a power vacuum sweep and an optional hose sweep. Four of the eight multi-purpose sweepers and blowers are hose models. The optional vacuum hose makes it possible to clean the lawn or ground area with the sweeper and clean out flower boxes, corners, and other hard-to-get-to areas. Dealerships available. For more details, circle (702) on the reply card.

POWER SWEEPER, York Modern Corp., Una-dilla, N.Y.

Model LFT is designed for a garden tractor. Removes thatch, leaves, grass clippings, apples, acorns, twigs, pine needles and cones, and all other kind of debris. Raking is achieved by three rotating tine bars, which contain a total of 117 spring teeth, closely spaced and mounted in synthetic rubber. Rake clears a three-foot wide swath with discharge to the right. Two six-inch wheels are adjustable for height. Variety of hitches permits easy attachment to all makes of lawn and garden tractors. For more details, circle (708) on the reply card.

SELF-PROPELLED VACUUM, Giant Vac Manufacturing, Inc., South Windham, Conn.

Self-propelled units are powered by either 7 or 8 hp engines and are propelled by means of a heavy-duty gear box, full floating differential and chain drive. Model 1800 (8 hp unit) has sufficient power to pull a sulky, which is supplied as an extra. All models have welded and balanced steel impellers with four blades ¾-inch thick. The 12.5-cu. ft. debris bags are made from specially woven fleece-lined material and will hold 85 pounds. For more details, circle (703) on the reply card.

SELF-PROPELLED VACUUM, Giant Vac Manufacturing, Inc., South Windham, Conn.

Self-propelled units are powered by either 7 or 8 hp engines and are propelled by means of a heavy-duty gear box, full floating differential and chain drive. Model 1800 (8 hp unit) has sufficient power to pull a sulky, which is supplied as an extra. All models have welded and balanced steel impellers with four blades ¾-inch thick. The 12.5-cu. ft. debris bags are made from specially woven fleece-lined material and will hold 85 pounds. For more details, circle (703) on the reply card.

BLOWER ATTACHMENT, Turf-Vac Corporation, Long Beach, Calif.

This new Turf-Vac blower provides a 150 mph blast to win-drow leaves and blow debris from gutter and curb areas. It mounts on the Toro unit in place of the mower attachment. It is easily installed without modification. The Turf-Vac attachment blows to the right or left and is controlled by levers from the driver's seat. Adjustable deflectors are provided to direct the blast in the desired path. For more de-tails, circle (702) on the reply card.


The 1970 Air Rake has been called the “Everything Machine” because it is five machines in one: Air Rake, Shrub-Vacuum, Lawn Vacuum plus Air Rake, Vac’n Bag It, and Outdoor Vacuum. The basic 2½ hp Air Rake can rake swath up to 5’ across. Converts to Shrub Vacuum in less than one minute by attaching 10-ft. hose to the front snout. Rake and Vac consists of vac-uum head attached to basic unit. For Vac’n Bag It, a disposal plastic bag replaces the dust-proof canvas bag. For more details, circle (709) on the reply card.
SKID-MOUNTED MULCHER, Reinco, Inc., Plainfield, N.J.

This portable unit incorporates the principles of the large, high-production, tow-type highway power mulchers. Model TM7-30 is ideally suited for highway or park maintenance work, and also satisfies the ever increasing demands of the commercial landscaper. One man can operate the unit. 30 hp air-cooled engine propels material up to 60 feet in calm air with a 4-ton/hr. capacity of dry mulch material. Over-all skid length is 5½ feet and width 2½ feet. Can be used with 10-ft. rack body. For more details, circle (710) on the reply card.

LEVLER, DriALL Driers, Inc., Attica, Ind.

DriALL introduces the LevLer, a patented low-cost leveling tool that eliminates ridges and depressions as well as headlands and dead furrows, giving a smooth seed bed. The LevLer is equipped with a disc hitch to use behind a disc or a three-point hitch for field leveling or road maintenance. Four models—11, 13, 15 and 17-foot sizes. Also available is a six-foot model for the compact tractor and a highway LevLer that has removable and replaceable scraper blades. For more details, circle (711) on the reply card.

SOIL MOISTER TESTER, Howard S. Crane, Inc., Oneida, N.Y.

The Aquaprobe is being introduced in the U.S. and Canada. The lightweight, self-contained unit gives fast, reliable moisture readings at soil depths ranging from two inches to 26 inches. Moisture determined by the amount of electricity soil will conduct. Moisture content easy to read. Powered by six penlight batteries. These is no digging, no fixed point of measurement, and guesswork by the operator is eliminated. For more details, circle (714) on the reply card.

HOME SPRINKLER SYSTEM, Rain Jet Corporation, Burbank, Calif.

Using these Rain Jet adjustable sprinklers, full-flow fittings and flexible pipe, this system is easy enough for the homeowner to install. Four patented Rain Jets outperform 24 ordinary sprinklers. Only four are needed to cover 25-ft. deep by 50-ft. wide lawn area. Photograph shows a Rain Jet square-pattern sprinkler head, together with a Rain Jet Tee assembly and Rain Jet flexible polypropylene pipe. A detailed, easy to follow "How to Install" brochure is available free. For more details, circle (715) on the reply card.

BELT CONVEYOR, Thrifty-Lifty, Inc., Honeoye, N. Y.

This portable belt conveyor moves material up inclines to 40 degrees. Standard lengths start at 7-ft., and increase in 6-ft. increments to 55-ft. and up. 12" wide 3-ply belt has 1½" hardwood cleats spaced on 2-ft. centers. Belt speeds of 60, 90, or 120-ft./min. available. Electric or gas engines available. Road-type undercarriage is a hand-winch operated telescoping type and has 400x8 pneumatic tires. Tow hitch standard on all except 13-ft. model. For more details, circle (716) on the reply card.
UTILITY SPREADER, Highway Equipment Co., Cedar Rapids, la.

Improvements have been made in the HI-WAY Model "P" utility spreader. This self-contained, self-powered material spreader comes in sizes and capacities suitable for use on all light-duty and small four-wheel drive trucks. They're used to maintain ice-free areas. Protective shield over conveyor and tarpaulin hooks are included to facilitate spreading sand, salt, cinders, lime, and other pelleted or granular materials. For more details, (712) on the reply card.

3½-TON SPREADER, Willmar Manufacturing, Willmar, Minn.

A new addition to the dry fertilizer line, the unit is dubbed the "Trophy Model," a heavy-duty machine having the same features as the Willmar W-4 but selling for less than $1,200. The W-35 has nearly the same capacity as most standard four-ton models. Accurate spread pattern, rustproof phenolic plastic floors, catalytic epoxy paint, and 12.5x15 high flotation tires are among features. For more details, circle (713) on the reply card.

GREENS MOWER, Hahn-West Point Div., Kearney National, Inc., Evansville, Ind.

A new Tri-Plex greens mower will be in production by early 1971. Features include variable control of reel and ground speeds to permit precision greens cutting under all conditions. Speedometer and tachometer minimize operator error in setting and maintaining independent speeds. Patent is pending on unique steering geometry that will eliminate scuffing. Electric hydraulic circuit for each reel gives stop motion the moment the reel leaves ground contact. For more details, circle (717) on the reply card.

LOW-VOLUME SPRAYER, Smithco, Inc., Wayne, Pa.

An all-new, low-volume sprayer for greens, tees, and trees has been introduced by Smithco. Called Red Rider's Spraymate, it is a self-contained, four-wheel piggy-back sprayer that needs only one man to load and operate. It's equipped with a 65-gal. fiberglass tank; a pump that generates 400 psi; and a 16-ft. boom. Power is supplied by a Briggs & Stratton 4 hp. engine with gear reduction. For more details, circle (718) on the reply card.
ON A 90-DEGREE DAY, baseball and football players can expect to play in temperatures up to 123 degrees if artificial turf is under foot. That's the finding of testing in Busch Stadium, St. Louis, and corroborated by similar data from the Orange Bowl, Miami.

Bill Simmons of the St. Louis football Cardinals said that on one day when the official temperature was 90 degrees, the field surface temperature was 123 degrees. It was 116 degrees at one foot and 114 degrees at six feet.

Testing by the Miami News produced similar conclusions. Artificial grass gets about 20 degrees hotter than natural turf, the News said. At an air temperature of 93 degrees, natural turf remaining in the stadium pushed the mercury to 96 degrees. Where the artificial grass had been installed, the temperature was 116 degrees.

MORE LEGISLATION is wanted by Oregon Associated Landscape Contractors. The group has proposed a law that would require landscape contractors to meet certain qualifications and apply for a license through the Oregon State Agriculture Department. Ronald Vandehey of Portland, original president of the group, said the move was to protect the public from "fly-by-night" operators.

DENVER, COLO., has had more than one fight on its hands over Dutch Elm Disease. The scourge has invaded the city's estimated 200,000 elms, or 60% of the total tree population. Some 3,000 have been determined by infrared aerial photography to be diseased. Tree experts believe the total could skyrocket to 20,000 to 30,000 in the next few years. Sanitation is essential to reducing the spread of the disease, including tree removal and destruction. But pollution proponents managed to ban open burning last January. The problem had been on how to dispose of the trees, for mere stockpiling of dead trees wouldn't eliminate the brooding places for the elm bark beetle. Verbal fighting has been torrid, but as of the first week in August the state health department issued special burning permits for destroying the dead and dying trees.

TORDON IS A SAFE HERBICIDE, said Dr. Gordon Shrum, chairman of British Columbia Hydro and Power Authority, Vancouver. And to prove his point to reporters, he picked up a six-ounce glass of Tordon mixed with water at twice the concentration of spray formulas and drank it to the last drop.

Use this convenient card if you wish to receive further information on products and services advertised or described in this issue.

BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

postage will be paid by

WEEDS TREES AND TURF
BOX 1100
DULUTH, MINNESOTA 55802
reconditioned and ready to work. $7,500.00 each. Equipment Sales Co., 5620 Old Sunrise Highway, Amity-ville, N.Y. 11701.

FOR SALE—67 GMC V6 truck with stake body and hoist, 11000 G.W. 67 C600 Ford truck with personnel cab and forestry body. 16" Asplundh chipper-V6 engine. 770 Oliver-tractor with 1½ yard front end loader. Slightly used lawn maintenance equipment and tree pruning tools. Phone Cleona, Pa. 717-272-5412.

BEAN 35 GPM SPRAYERS. 400 gallon steel tanks, Continental engines, skid mount. Completely reconditioned and ready to work. $1,250.00 each. Equipment Sales Co., 5620 Old Sunrise Highway, Amity-ville, N.Y. 11701.

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.

SOD
GRASS SOD and Sprigs, Tifway 419 and Tifdwarf. 100 acres of clean sod.

Hybrid Bermuda 419 — 228 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.

HELP WANTED
WORKING superintendent, married, over 30, full charge 75 acres Memorial Park Cemetery in Suburban Philadelphia. Must have 3 years ground maintenance experience, 2 years as foreman. Able to handle men, coordinate work, familiar with equipment. Comfortable apartment, utilities, $7,800 year, plus benefits. Those resumes giving full details of education, experience and equipment knowledge considered. Strict confidence. Write Box 59, Weeds, Trees, and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.


SALESMEN WANTED
EXPANDING Tree Service Company in Northeast—looking for aggressive and experienced salesmen to develop new territories and build up existing ones. Starting pay of $10-15,000 commensurate with education, experience, and ability. Commission also paid on profits earned. Company car furnished; pension plan; paid hospitalization; excellent future. Send resume (with current annual sales and earnings) to: (Box 50, Weeds, Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

REAL ESTATE
FLORIDA Sod Farm. 115 acres near booming Orlando, Disney World and Cape Kennedy. Established 13 years. Will sell land and equipment at market value. 1969 net profit approx. one third of investment. Owners health requires sale. Central Fla. Sod Farms, P.O. Box 434, Oviedo, Fla. 32765.

MISCELLANEOUS
AUTOMATIC IRRIGATION CORRESPONDENCE COURSE — A ten lesson course written for Superintendents and foremen working with automatic turf irrigation systems. Straightforward text and diagrams showing the selection, operation and maintenance of vacuum breakers, valves, pipe, spray and rotary heads, controllers, etc. Streamlined step by step system trouble shooting methods on pressure and voltages. Special lessons on corrosion, water quality, moisture measurement and sensing, fertilizer injection, salinity and soils. For free course outline and information write to Larson Company, P.O. Box 4453, Santa Barbara, Calif. 93103.

SITUATIONS WANTED
GREENS superintendent. Country Club experience. Desires to make change. Resume sent on request. Box 62, c/o Weeds, Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.