



Demonstrations included Amchem's Slinger, in this case TVA-owned, and, Amchem-designed granular applicator built by West Point Products.



New Hyacinth Society officers are, from the left: Gordon Mobley, director; Brandt Watson, director; Robert Gates, secretary-treasurer; Paul Cohee, vice-president; Stan Abramson, president; Robert Blackburn, editor; and William Dryden, director. The group hired Mrs. Blanch Farrow, Ft. Lauderdale, to assist Blackburn in publishing a newsletter and the Society Journal.



# RECORD AQUATIC MEETING

The field day was at the Tennessee Valley Authority Guntersville Lake water impoundment. A record 173 persons registered.

A GROUP which for the past 10 years has led the fight to control water weeds—the Hyacinth Control Society, dedicated to the control of all noxious aquatic weeds—has truly become a national organization.

Started in the Southeastern U.S. and pulling a membership largely from Florida, the Society has steadily grown. Membership is now

527 and comprised of custom applicators, commercial and educational researchers, public officials, and others responsible for keeping water clean and usable for whatever its intended purpose.

This year—a first for the Society—the annual convention and field demonstration — was held outside the state of Florida. A whopping 70

percent of the membership, 173, registered. Another 80 guests and family members attended. This 250 plus figure set a new attendance for this event. The group on hand represented four countries, 20 states, and Puerto Rico.

Tentatively, the 1971 annual event is to be held at Cocoa Beach, Fla. However, a Tampa, Fla., site is also being discussed following election of Stanley C. Abramson as president. Abramson is technical representative for Southern Mill Creek Products Co., with headquarters at Tampa. Dates for '71, also tentative, are July 11-14.

On the educational program, Paul R. Cohee, president of the Society for the past year, and a professional weed technologist with Hercules Inc., headquartered at Birmingham, Ala., discussed the goal of the Society in helping return waterways to a healthy and functional status. Cohee pointed out that freeing water of water weeds is a major step in restoration of lakes and streams. He emphasized that a public majority, motivated by emotion and sincere concern, but lacking patience, foresight or wisdom cannot always be aware of consequences of their action. In further alluding to restrictive legislation demanded by a majority public and rampant throughout the country right now, Cohee said there is good sound logic in recognizing that on some issues, the minority—made up of professionals (such as in this Society) can be better equipped to speak and act for the majority. "If you have doubts about this," Cohee said, "ask your doctor or dentist." He further pointed out that Society members are a minority group, and also a professional group; a group seeking a methodical, scientific approach and drawing on both experience and research to halt the takeover of waters by aquatic weeds.

Cohee, in one of his last duties as president, presided over the formal 1970 business session. A memorial section of the 1970 Hyacinth Journal will be dedicated to four members and the wife of another, all of whom died during the year. These are: Dr. Lyle W. Weldon, USDA, ARS, Fort Lauderdale, Fla.; John D. Rogers, Pahokee Drainage District, Canal Point, Fla.; Harold J. Elser, Maryland Fishery Biologist, Annapolis, Md.; William A. Galletta, Vero Beach, Fla.; and Mrs. Fred John, wife of member Fred John, Belle Glade, Fla., Drainage Dist., Belle Glade, Fla.

Some 35 technical papers were presented by participants at this

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 reinfested 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 har-

## 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, 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 inverts were used via helicopter applications. This work was mostly on industrial rights-of-way

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, right, talking about invert emulsions at the Hyacinth meeting.



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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 1½ to 1 pound conversion ratio, weeds can be a contributing factor to a 2 or 2½ 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, III, 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 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 CO<sub>2</sub> 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 16% 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

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