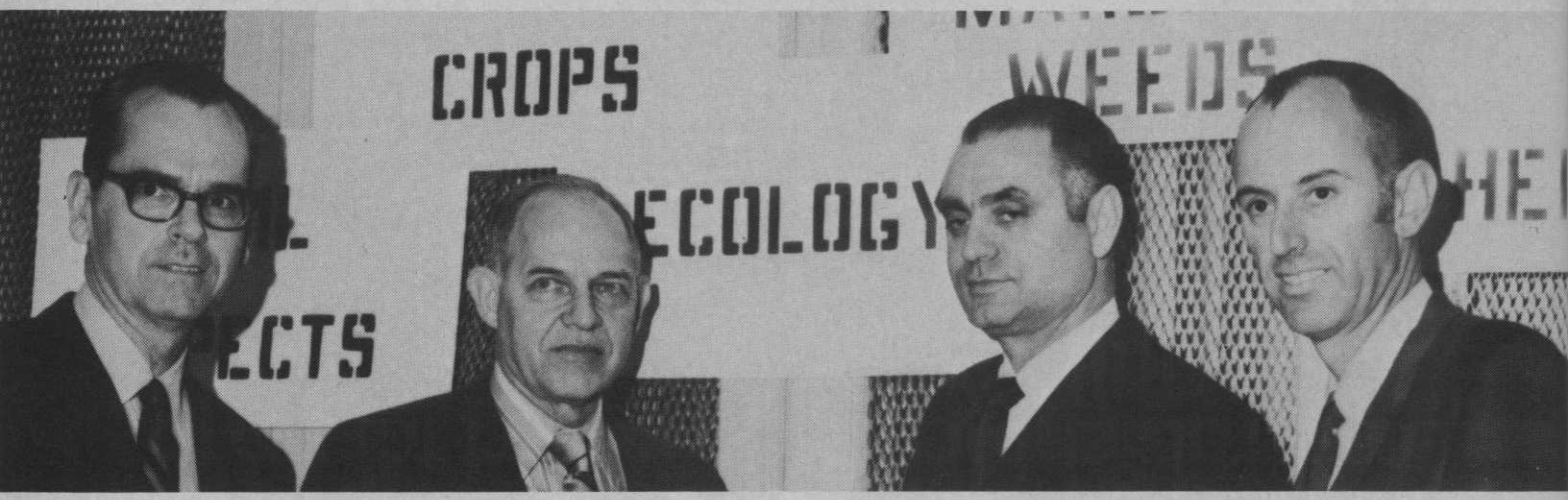

Background signs spell out the emphasis of the 11th meeting of the Weed Science Society recently in Dallas. Some 700 weed scientists attended. The men will provide the leadership for the coming year. From the left, they are Earl G. Rodgers, vice-president; Dayton L. Klingman, president; Phillip Upchurch, president-elect; and Paul W. Santelman, secretary.

WEED SCIENCE SOCIETY REPORTS

WHILE EXPRESSING "1,000% support" for improving the environment, the president of the National Agricultural Chemicals Association, called for a "switch from rhetoric to reason" in the regulation of environmental factors.

Parke C. Brinkley, addressing the 11th Weed Science Society of America meeting recently in Dallas, warned that without reason going into regulation of chemicals, "we could be trading one disaster for another."

Each issue should be decided as though "our entire existence and way of life depended on the right decision," he said, because each will have long lasting effects.

"Much of the rhetoric and emotion of recent months has tended to discredit the scientific community and the technology that has made this nation the envy of the rest of the world," he continued. This same expertise, he observed, offers the major hope for development and application of techniques for environmental improvement.

Several speakers expressed concern that the restrictive atmosphere at present regarding pesticides could bring on disaster. Dr. Dayton L. Klingman, incoming president of WSSA, predicted that without chemicals and other technology, another 300 million acres — an area equal to the key states of Missouri, Kansas, Arkansas, Tennessee, Louisiana Mississippi, and Alabama — would be needed to feed the U.S.

Dr. L. L. Danielson, outgoing WSSA president, said agricultural science is in trouble as the result of poor communications. "The public does not clearly understand its importance."

"We are living in a period when the public is exposed to a continual barrage of communications that creates a subconscious fear of almost everything," Dr. Danielson continued. "We are learning to fear food, water, air, transportation — even our fellow man."

To make matters even worse, he said, "communication between scientists is also poor. We find some segments of science attacking others in the public and scientific press without first attempting to reconcile their differences."

Some 700 weed scientists heard more than 225 technical papers covering virtually every aspect of weed control. While most papers were related to food production, several dozen pertained to control of vegetation in urban, industrial and aquatic areas.

Among resolutions, the Weed Science Society asked that weeds be "recognized as potential environmental hazards detrimental to the public health, welfare, and recreation, and that state, provincial, and federal funding of weed research be expanded."

Manufacturer Responsibility

Herbicide manufacturers have certain responsibilities to their customers, reminded F. A. Holmes of du Pont Company, in that herbicide users may overuse a new chemical or may have "idealistic expectations" on results. It is the responsibility of the manufacturer and his representative, Holmes said, to:

1. Have an adequate label on the uses for the product.

2. Know the strengths and weaknesses of the product so that result expectations are not oversold to the customer.

3. Provide sufficient information on the above in sales literature so the customer can make a sound decision whether to use the product. Many times this is the only guideline by which the customer can make a decision.

4. Only through proper information can a prospective user have the knowledge whether to use the chemical, what results can be expected, the possible negative results that may occur, and the overall effect of the use of the product on the crop, the user, and the environment.

5. A better environment is everybody's business and it depends in large part on adequate knowledge flowing from manufacturers and investigators to users.

Positive Pesticide Campaign

Walter Weber, technical director of pesticides for Indiana Farm Bureau Cooperative Association,

Inc., reported on a program to promote the idea that there is a "Safety Side in Every Pesticide." Four channels are being used.

A static set of about two dozen signs stressing affirmative viewpoints was furnished to county cooperative stores, vocational agriculture teachers and agricultural extension agents. These are to be used in county fairs, the state fair, and in similar situations.

A second project is the sponsorship of a statewide essay contest, "Protecting Our Environment Through Sensible Pesticide Use." There are five classes: (1) students up to and including the eighth grade; (2) high school students; (3) college students; (4) adult farmers; and (5) adult non-farmers.

A third project has been to prepare articles on the benefits of pesticides, and to answer the critics. This included letters to editors, radio and TV interviews, information for employees, and news articles.

A set of slides on the safety theme is the fourth project. These are used by farm chemical fieldmen at every available opportunity, showing them to church groups, youth groups, students, Farm Bureau meetings, garden club meetings, and service clubs such as Rotary, Lions, Kiwanis, Optimists, and so on.

Following are capsule summaries of some of the papers given on control of vegetation in the urban and non-crop areas.

Aquatic Weed Control

Irrigation water treated with acrolein controlled aquatic weeds and did not reduce yields of sugarbeets, soybeans or corn. In experiments at Prosser, Wash., acrolein was applied to crops at 0. 0.1, 0.6, and 15.0 parts per million in two-acre-inches of water by furrow and sprinkler irrigation. Furrow-irrigation treatments lasted one hour and 15 minutes, and the sprinkler treatments eight hours. — Victor F. Burns, USDA Agricultural Research Service, Beltsville, Md.

Diquat, endothall and 2,4-D do not translocate basipetally in Eurasian watermilfoil or hydrilla verticillata. The lack of basipetal translocation to reproductive structures buried in the hydrosoils may explain why regrowth occurs so readily after herbicide treatment. — Kerry K. Steward. USDA Agricultural Research Service, Fort Lauderdale, Fla.

Combinations of copper sulfate pentahydrate at 1.0 ppmw of copper plus diquat; paraquat; ametryne, atrazine; 2-tert-butylamine-4-(ethylamino)-6-(methylthio)-3-triazine; or 2,4-D increased the copper content of hydrilla when compared with plants which were treated with copper sulfate pentahydrate alone. The concentration of organic herbicide and contact time affected this increased uptake of copper. The addition of fenac, dichlobenil, diuron, the mono (N,N-dimethylalkylamino) salt of endothall, or dinitrophenol to this copper compound had no effect on copper uptake. Ametryne at 1.0 ppmw plus copper sulfate pentahydrate at 1.0 ppmw of copper exhibited a synergistic response on hydrilla as determined by dry weight and was associated with a high con-

centration of copper. Phosphorous levels of hydrilla were reduced by 0.1 and 1.0 ppmw of diquat and paraquat. Hydrilla treated with a combination of 0.1 ppmw of paraquat and copper sulfate pentahydrate at 1.0 ppmw of copper contained 0.34% less phosphorus than plants treated with paraquat alone. The phytotoxic effect of the herbicide combination on hydrilla may be due principally to an increased accumulation of copper and a reduction in phosphorous content.—David L. Sutton, R. D. Blackburn, K. K. Steward, University of Florida and USDA, Fort Lauderdale.

Presence of established sod-like growth of slender spikerush facilitated the non-use of herbicides for aquatic weed control in two canals and one reservoir in central California. Slender spikerush, a short growing rhizomous perennial, competes with certain rooted aquatic weeds, including sago pondweed, curlyleaf pondweed, American elodea, small pondweed, and horned pondweed. — R. R. Yeo, USDA-ARS an University of California, Davis.

Diquat and paraquat evaluated over a three-year period in 0.5 and .75 acre ponds had no effect on fish population. Ponds were treated with 1 ppmw once in a single year. — Robert D. Blackburn and Thomas M. Taylor, USDA-ARS, Fort Lauderdale, Fla.

Two methods of handling aquatic vegetation harvested mechanically have been studied at the University of Wisconsin. One is to fluidize by intensive chopping and grinding, reducing the vegetation to a slurry that can then be handled as a fluid. The other method is to mechanically dewater the vegetation by chopping and pressing. The fluid fraction is returned to the body of water while press residue is reduced to 12% to 16% of the original volume and 23% to 32% of its original weight. About 90% of the original solids, 85% of protein, 60% of the potassium, and 80% of the phosphorus present in the vegetation at harvest is removed in the press residue. — H. D. Bruhn and D. F. Livermore, University of Wisconsin.

Four to five beetles, Agasicles n. sp., per sq. ft. are needed to produce a noticeable effect on alligatorweed. The beetle will not completely eradicate the weed, but reduce it to a point where competitive plants can come in. It is highly unlikely the beetle will be effective for every area where alligatorweed grows. — Neal B. Spencer, USDA-ARS, Gainesville, Fla.

Herbicides on Turf

Kentucky bluegrass exhibited greater tolerance to bromacil than tall fescue or orchardgrass in Virginia tests. Plots were sprayed postemergence at ⅛, ¼ and ½ lb./acre Chlorosis and leaf tip die back of the three grasses appeared about 1½ weeks after application. At the ½-lb. rate, compared with control, clipping weights of bluegrass, tall fescue and orchardgrass were reduced 20%, 65% and 75%, respectively. Carbohydrates were reduced 15% in bluegrass, 48% in tall fescue and 51% in orchardgrass. Photosynthesis rate was reduced 33% in bluegrass, 57% in tall fescue and 71% in orchardgrass. — J. W. Shriver and S. W. Bingham, Virginia Polytechnic Institute.

Preemergence crabgrass herbicides have different effects on the vegetative development of bermudagrasses. Two-inch plugs of Tifton 328, Tifton 419, Tifdwarf and No Mow were treated in the field with granular applications of benefin (3 lb/a.), bensulide (12.5 lb./a), DCPA (12 lb./a), siduron (10 lb./a), nitralin (2 lb./a) and terbutol 12 lb./a). Plugs were removed from the soil about six and 12 weeks after application. One experiment was conducted each of three years, 1968-70. Significant differences from the check occurred only for normal and abnormal rooting at the nodes and stolon weight. Siduron most adversely affected top growth (stolon weight) of all four grasses. All herbicides greatly affected normal rooting of all grasses at the sixth week observation. Differences from the check were significant for No Mow, Tifdwarf, and Tifton 328. Normal rooting had increased at the 12th week observation. However, rooting was considerably less than the check. There was greater increase in rooting in the benefin treatment. — W. M. Lewis, North Carolina State University.

Brush Control

A new herbicide incorporation technique promises more effective control of woody plants that are known to be highly resistant to foliar-applied herbicides. USDA agronomist Everett B. Hollingsworth modified a standard root plow for subsurface placement of liquid chemicals. Called a Chem-Plow, the machine can place herbicides precisely where they'll be the most effective—in the soil at the roots, said Hollingsworth.

The Chem-Plow was developed jointly with Paul C. Quimby and

Daniel C. Jaramillo, both USDA-ARS, at the New Mexico Agricultural Experiment Station. The machine was designed to apply herbicides to the root zone of saltcedar in the arid, low rainfall areas of the Southwest.

The blade of the plow is 8 feet long and two inches thick at the rear edge. A ½-inch pipe, fitted with five equally spaced spray nozzles, is welded to the rear edge of the blade. On the upper blade surface, protruding six inches to the rear and above the spray nozzles, is a sheet of ¼-inch metal. This "shield" supports and deflects soil, preventing interference with the spray pattern. A ½-inch supply pipe extends from the spray pipe up the rear of a vertical shank to the top of the plow frame where it connects to a power sprayer by a flexible hose. Herbicides may be applied at any depth to a maximum of 24 inches.

Creosotebush control with 2,4,5-T can be significantly improved by the inclusion of 50% dimethyl sulfoxide (DMSO) in the carrier. — USDA-ARS, Tucson, Arizona.

Response of creosotebush to aerially applied herbicide treatments — Applications were carried out the first week of September of 1964-67. Treatments included picloram at ½, 1, 1½ lb./a; dicamba at ½, 1 and 2 lb./a; 2,3,6-TBA at 1 and 2 lb./a; 2,4-D, dichlorprop and silvex at 2 lb./a; 2,4,5-T at 2 lb./a; and combinations of the above chemicals. Except for the treatment with 2,3,6-TBA at 2 lb./a, poor control resulted in 1964. In 1965, best control came with picloram at 1 and 1½ lb./a and with dicamba at 1 and 2 lb./a, the low and high rates of each herbicide killing 25% and 34%, respectively. In 1966, results with picloram were comparable to the 1965 results; picloram was not applied in 1967. In the dicamba plots, the kill at the ½, 1 and 2 lb./a rates was 4%, 25%, and 51% in 1966 and 9%, 35% and 61% in 1967, respectively. Average defoliation two years after treatment with dicamba at 2 lb./a was 80%. The 2,3,6-TBA at 2 lb./a was less effective than dicamba, giving 10-19% kill in the various years. Combination treatments of dicamba and 2,4,5-T at ½ lb./a each and 2,3,6-TBA plus 2,4,5-T at 1 lb./a each were slightly more effective than dicamba or 2,3,6-TBA alone at the same rates. — Walter L. Gould and C. H. Herbel, New Mexico State University and USDA-ARS.

In aerial brush control operations in western Texas, ½ lb. of 2,4,5-T ester/a in 4 gals. of a 1:3 oil-water emulsion gave an average kill of 22% on mesquite. Combinations of 2,4,5-T and picloram at ¼+¼ lb./a killed 42% of mesquite, 76% of Tasajillo and 41% of prickly pear. Equivalent rates of 2,4,5-T and dicamba killed 27% of mesquite, 65% of Tasajillo and 5% of prickly pear. In southern Texas, ½ lb./a of 2,4,5-T killed 24% of mesquite and 40% of guajillo, but did not give effective control of other species at rates up to 2 lbs./a. Picloram alone gave effective control of mesquite, prickly pear, blackbrush, granjeno, twisted acacia, whitebrush and guajillo at 1 lb./a. Highly effective control was obtained on all species except Texas persimmon at 2 lbs./a. Combinations of 2,4,5-T and picloram at ½+½ lb./a gave more effective control of most brush species than lower rates and were almost equally as effective control as higher rates, with the exception of whitebrush, lotebush and lime prickly ash. — Texas A & M University.

A year after treatment, silvex at 0.5 lb./a proved more effective in reducing the number of live sand shinnery oak stems than did dicamba, 2,4-D, 2,4,5-T or picloram at the same rate. Combinations of 2,4,5-T plus picloram or 2,4,5-T plus dicamba at 0.25 plus 0.25 lb./a were more effective than 0.5 lb./a of the herbicides applied singly. Silvex plus picloram at 0.25 plus 0.25 lb./a was more effective than 0.5 lb./a Silvex alone. — Texas A&M University.

Outgoing president L. L. Danielson, left, confers with incoming president Dayton L. Klingman concerning program agenda. The next WSSA meeting will be in February, 1962, in St. Louis, Mo. Local arrangements will be handled by Dr. Delbert D. Hemphill, professor of horticulture and project leader of the environmental health center, University of Missouri, Columbia.

Herbicide Application, Container Ornamentals

In one study, dichlobenil, nitralin, simazine, trifluraline and DCPA were compared in a 50% sand and 50% peat mix. Diochlobenil leached the greatest, simazine was intermediate, and nitralin, DCPA and trifluralin leached very little. DCPA, trifluralin and nitralin caused the least injury to a wide range of species whereas dichlobenil and simazine injured some species. Low rates of simazine in combination with trifluralin, nitralin or DCPA controlled a broad spectrum of weeds with very little or no injury to many ornamental species.