

Table 1. Effect of Wind Velocity on Sprinkler Spacing

Wind	Maximum Triangular Spacing
0 to 3 miles per hour.....	60% of the diameter
3 to 5 miles per hour.....	50% of the diameter
5 to 7 miles per hour.....	40% of the diameter
8 to 10 miles per hour.....	30% of the diameter

should keep in mind the amount of chemical to be injected; this should be in proportion to the flow rate of water through the system. Only in this way can he be sure of avoiding the danger of applying excessive amounts of chemicals. Chemicals should go only where the water goes. Thus, the need for uniform application of water is apparent. The sprinkler system should also apply water at a rate that precludes runoff and insures an adequate amount of water at each irrigation.

Wind Conditions

It takes very little wind to affect the performance of large sprinkler systems, but many do not realize how great this effect is. Since there is only a slight difference in the effect of wind on various pop-up sprinkler heads, Table 1. can be used as a guide to head spacing required for several different wind velocities.

The effect is greater than it seems at first glance, because the number of heads required increases in inverse proportion to the square of the spacing. Therefore, four times as many heads are required to operate successfully in an 8- to 10-mile-per-hour wind as are required in a zero to 3-mile-per-hour wind.

Whenever possible, most growers prefer to schedule watering times for periods of the day or night when wind velocity is low, rather than to pay the much greater cost involved in installing a system that will provide good water coverage in the wind. However, the prospective buyer must thoroughly understand the effect of local wind conditions before he sets out to purchase an irrigation system.

Precipitation rate is the average rate, in inches per hour, at which sprinklers deliver water.

A low rate is considered to be under .30" per hour; a medium rate is around .45" per hour; and a high rate is anything over .50" per hour.

Good soil conditions on flat ground can successfully use a high rate of application. Heavy soil, soil compaction, sloping areas, or any other condition that results in a low infiltration rate, indicate the need for a lower rate of water application. Sometimes it is difficult to tell in advance how high a precipitation rate can be used successfully on all parts of the sod area, so it is usually best to specify the lower rates of precipitation, which will give the least trouble with runoff in problem areas.

Uniformity of Precipitation

This is a measure of the efficiency of the system, and there is considerable difference between a good and a poor system in this respect. Sod farm irrigation requires a uniform application of water since most grass varieties are shallow-rooted. For this same reason, frequent irrigation is needed during periods of high moisture use. Thus, sprinklers selected should be from a quality manufacturer and should be designed for scientific uniformity of water application.

Service Life

There is also a considerable difference in the life expectancy of the various components used in sprinkler systems, even under ideal conditions. Adverse conditions can cause further shortening of life expectancy. For example, water hammer, or associated high pressure, can cause premature failure of pipe and fittings. Abrasive or corrosive water can shorten the life of rotor heads, especially where the mechanism is exposed to the water stream. On rotor heads, the total effect of these variables

can result in an operating life from as low as 50 hours to as high as 5,000 hours.

It thus becomes very important for the prospective buyer of irrigation equipment to specify durability of system components. It should be possible to obtain five-year usage of heads, controls, and valves, and 15-year usage of pipes and fittings.

The sod grower planning a new irrigation system should know and specify just what it is he expects of the system. Then, if he wishes, he can leave to responsible experts the job of designing the system that will meet his specifications. In this way, the grower can be more sure of getting a system that will meet his own needs and problems.

Fall Turf Care Important

Bluegrass should be mowed, fed, and watered as long as it continues to grow, Colorado State University extension horticulturist, C. M. Drage, says. He explains that fall conditions are favorable for the growth of cool-season grasses, which should be fertilized at this time, even though results will not be as obvious as in spring fertilization.

The grass responds by increasing its root system and storing extra plant food for new top growth in the spring. Fall fertilization also stimulates tillering, which takes place when new plants rise from rhizomes near the mother plant and contributes to a dense stand of grass. Nitrogen, generally the most important element in turf fertilizer, should be provided at 1 to 2 lbs. per 1,000 sq. ft., Drage recommends. For conditions of average fertility, lawns will require 3 to 4 lbs. of available nitrogen per 1,000 sq. ft. each year. This can be applied half in spring and half in fall; but if grass is fertilized only once a year, fall is probably the best time.

Recommending against over-fertilization as unnecessary and impractical, Drage adds that lawns should be mowed in fall at the regular height of 1½ to 2½ in. Grass will need less water in the fall, but soil should not be allowed to dry out.

Lausche Tells 42nd ISTC Convention: Man's Indifference Is Creating an Ugly America

"Man and man alone is primarily responsible for making a rich and lovely land, once covered with vegetation, into an ugly sight," Ohio Senator Frank J. Lausche, told the keynote luncheon of the 42nd International Shade Tree Conference Convention, held at the Cleveland-Sheraton Hotel, Aug. 28 to Sept. 2. Deploring the defoliation of America, the senator cited the destruction of trees by home construction, road building, and strip mining in particular.

What can be done about this vast waste of natural beauty? Lausche's resounding reply: Plant Trees. Recalling his years as Ohio's governor, the white-haired statesman pointed with pride to Ohio's sesquicentennial year of 1953 and the "Plant a Tree" program he initiated. Twenty-five million trees were reported planted under the program. What has happened to this impetus? he asked. The senator seemed hopeful that an audience of over 800 arborists was prepared to implement its convention theme: "Beautify with Trees."

Following the keynote luncheon, delegates returned with a purpose to the educational sessions that had been in progress since Monday morning. Beautification does not result from digging a hole and throwing in a tree, but from well-planned planting programs, from knowing how to maintain the tree, and from knowing how to save the tree from its own environment if necessary, delegates were told.

Beginning with an investigation of the complex of interacting factors that cause decline of hardwood trees in urban conditions by Dr. Wayne Sinclair, plant pathologist from Cornell University, Ithaca, N. Y., delegates heard and discussed a wealth of techniques for planting and preserving trees. Soil fertilization and aeration, treatment for soil fills, and the use of soil wetting agents for saving trees and promoting growth were described; municipal and industrial planting programs were brought



Shovel wielders for tree planting ceremony on Cleveland's mall are (left to right): John Michalko, Shade Tree Commissioner of Cleveland and general chairman for the convention; Dr. Richard Campana, ISTC's '66-'67 president from Orono, Maine; O. J. Andersen, '65-'66 ISTC president from Houston, Tex.; and Ohio Senator Frank J. Lausche, who delivered the keynote luncheon speech. William P. Lanphear, III (far left) was meet co-chairman.

into focus; special areas, such as tree evaluation, growth retardation, and personnel problems and management were discussed. All with an eye to helping the arbor industry do a better job.

Wetter Water Slakes Soil

To make water wetter, to make it penetrate soil faster and wet more uniformly, Robert A. Moore, of Aquatrols Corp. of America, Camden, N. J., recommends adding soil wetting agents to water. Explaining that the tension forces of plain water inhibit penetration of small (capillary) pores in soil, he counseled that "only a few thousandths of one percent of wetting agent is needed to reduce tension forces by 60% or more."

"A soil treated with wetting agent also holds water at lower tensions," he continued, "thereby increasing the availability of water and nutrients, and enabling plants to go up to twice as long between waterings." Moore recommended use of soil wetting agents in street tree plantings and in shopping mall plantings where treatment allows water to penetrate dense balls to the plant

root zones. Wetting agents can be added to mulches to help keep them in place, drain more readily and uniformly, and to increase plant response from improved water supply.

When balled nursery stock is treated before shipment, watering is more effective and stock arrives and keeps fresher, Moore stated. He also emphasized the benefits of "puddling-in" with wetter water. "The complete wetting and rapid penetration of soil and tree ball eliminates air pockets and allows the tree to be set at final grade. No settling occurs." How much do wetting agents increase soil penetration? According to the man from Aquatrols, wetter water moves through the soil profile in about 2 hours as opposed to 24 to 48 hours for untreated soils. "Wetter water assures the most desirable type of soil moisture condition: good penetration into dry areas, rapid drainage of excess moisture in wet areas."

How To Treat Soil Fills

"Roots buried under soil fills by contractors cannot receive the normal supply of oxygen and



The gavel is passed as ISTC officers look to the year ahead. Officers (left to right) are Dr. Lewis C. Chadwick, executive secretary, from Columbus, Ohio; Freeman L. Parr, vice president, Hicksville, L. I., N. Y.; Dr. Richard Campana, '66-'67 president, University of Maine, Orono; C. Elmer Lee, president-elect, of Los Angeles, Calif.; O. J. Andersen, '65-'66 president, from Houston, Tex., and Dr. Paul Tilford, ISTC editor, from Wooster, Ohio.



Tree dedicated to the late veteran treeman Charles Irish is planted at Holden Arboretum, where commercial equipment demonstrations were held. At the shovels (left to right) are Dr. Richard Campana, Dr. L. C. Chadwick, Dr. Paul Tilford, and O. J. Andersen.



National Arborist Assn. officers confer. From left to right, '65-'66 president Edwin E. Irish, of Warren, Mich.; '66-'67 president, Harry A. Morrison, of Wilmette, Ill.; and NAA executive secretary, Clarke W. Davis, of Washington, D. C.

Candid's Snapped
at this year's
ISTC
Convention



Delegates sign in for the six-day long Shade Tree Convention.



Municipal arborists Albert Ayling (left) and Brian Fewer (center) get set for their talks as chairman Carl Schiff looks on.



Above: Conventioneers pass through lunch line at Holden Arboretum barbeque. Below: Overall view of commercial exhibit area in convention headquarters hotel.



Monday afternoon speakers, John Z. Duling (right) and Ralph G. Carmichael (center) pause to discuss their talks with session chairman, Dr. Richard Campana.



Opening session speakers, Dr. Wayne Sinclair (right) and Robert A. Moore (left) compare notes with ISTC president Andersen.



BLUE VERVAIN

(*Verbena hastata*)



Blue vervain, also called wild hyssop and purvain, is a perennial plant that reproduces by seed and short rootstocks (rhizomes).

Native to the United States, blue vervain is found throughout the Mississippi Valley and eastern states. The plant grows in pastures and meadows, along roadsides and fence rows, and in waste places. It is most commonly found on low, moist ground with gravelly or heavy loam soils.

Leaves (1) are opposite, 3 to 6 inches long. They are pointed, saw-toothed, rough textured, and prominently veined. Dark green above, leaves are a grayish-green below.

Blue vervain grows 2 to 4 feet tall. Upright stems are 4-sided and slightly hairy. Branches occur near the top of the plant (2).

Small, blue flowers appear in compact spikes that are 2 to 6 inches long. Flowers begin to bloom and mature from the base of the spike. They are less than $\frac{1}{4}$ inch across.

Reddish-brown seeds (3) are borne four in a pod. Seeds are about $\frac{3}{32}$ in. long. They are oblong with an oval side and two flat sides, and have a white scar at the base. Oval seed surface is ridged.

Blue vervain is a shallow-rooted plant that becomes hard and coarse as it matures. Annual mowing will help to control the plant. Application of 2,4-D at 1 pound per acre will usually provide good control.

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water to maintain a healthy tree condition," John Z. Duling, Muncie, Ind., tree expert indicated. "When we find a fill or grade exceeding 6 in. over most of the root area of established trees, we recommend that plans be made to allow air and water to reach the roots in the original grade."

Where 6 in. to 18 in. of fill is in place, holes are drilled through the fill, which is then loosened with air pressure before blowing in fertilizer and sand and filling with pea gravel. "In places where the fill will be of greater depth, we recommend that an aeration system be installed," the Indiana arborist said. If the fill is already in place, it must be removed in the tree area to the original grade. "A system of field tile is laid on the grade in the pattern of a wheel with the spokes running into the base of the tree, where a tapered base of stone is laid around the tree trunk." The area is vented to the surface, filled with 6 in. to 12 in. of stones, covered with burlap or straw, and then soil fill installed. After installation, fertilizer can be applied through the vent pipes.

Duling added that there may be a lesson to be learned from trees that have survived soil fills by developing a second root system for the new conditions. Charles Schmaltz of Rochester, N. Y., has successfully induced new root growth "by wounding the trunk or major roots just prior to applying the fill. Exposing the cambium by a notch or cut and then covering the wound with a moist medium, such as sand or moss, results in root growth from the wound." The treeman described this as an interesting new possibility for arborists.

How To Plant Curbside Trees

"The trend toward planting in curbside excavations in business areas is obviously on the increase," Edward J. Brarmann, Jr., Supervisor of Forestry for the Jersey Central Power & Light Co., Morristown, N. J., commented. "I believe the underlying motive is a desire for added color afforded by fruit, green foliage, and attractive blooms, rather than shade."

Underlying the new concept of street tree planting, he termed creation of the typical old tree-shaded thoroughfare "neither desirable nor practical." Business area conditions are not suitable



Dr. Paul Tilford (left), former NAA executive secretary congratulates commercial arboriculture panelists on their presentations. Others shown (left to right) are Ed Irish, panel moderator; Wayne C. Morgan; Dr. Eugene B. Himelick; and Jack Wikle.

for large trees. "A tree must grow naturally to fit the space available or be contained within the space limitations by frequent pruning."

Recounting his own experience with the business area planting project in Englewood, N. J., Brarmann stressed the importance of advance planning. "The desire for early results shouldn't prompt premature planting activity," he warned. Site locations, intervals (a minimum of 60 ft. to 70 ft. was recommended), and careful tree selection to assure diversified plantings should be determined well in advance for an entire project area. Use a minimum of 4 ft. by 4 ft. for sidewalk cutout size. This increases cutting and repaving costs, but reduces root interference by sidewalks. Brick was found unsatisfactory for surfacing the excavated areas; concrete blocks are relatively satisfactory; the use of Belgian block seems to work well.

"Any business area planting project is, by its very nature, a 'show place' and must be so maintained," Brarmann stressed. "Municipalities unaware or unwilling to accept the maintenance aspects of the business planting project, should not undertake such a program in the first place."

Industrial Landscaping Push

Working seven days a week,

through sub-zero winter weather, against an "impossible-to-meet" deadline, Davey Tree of Bettendorf, Iowa, landscaped the better part of 300 acres in nine months, Ralph G. Carmichael, Davey treeman, told an afternoon general session. Mobilizing all its resources, Davey finished on schedule, though sod was laid and a tree planting ceremony held on frozen ground.

Haste did not create a lack of care, Carmichael emphasized. For example, though more than 2,700 trees were removed from the land (new home of the Deere & Co. administrative center), he related that "trees outside the construction area were removed only after a complete review was made of each situation and unanimous agreement was reached." Extensive measures were taken to protect desirable trees. "All construction contracts contained tree-protection clauses and provided for penalties in the event of tree damage," a procedure that Carmichael notes has paid off handsomely.

During construction, trees were pruned, braced, cabled, and sprayed for insects and diseases. Land was treated with equal care, as 75,000 cu. yds. of topsoil were added and 50 acres of damaged land surface recontoured. Of these acres, 35 were machine graded, fertilized, and planted with 22 different seed mixtures, depending on sun, shade, soil,

Meeting Dates



Mountain Lake Right-of-Way Maintenance Conference, Annual Meeting, Tinker Mountain Motor Lodge, Roanoke, Va., Sept. 12-15.

Mississippi Turfgrass Assn., Annual Fall Meeting, Jackson Country Club, Jackson, Sept. 13.

Northern Michigan Turfgrass Conference, Traverse City Country Club, Traverse City, Sept. 13.

Northwest Nurserymen's Indian Summer Session, Salishan Lodge, Gleneden Beach, Ore., Sept. 16-18.

California Assn. of Nurserymen, 56th Annual Convention, Yosemite National Park, Calif., Sept. 20-22.

Rocky Mountain Regional Turfgrass Assn., 12th Annual Equipment Exposition, City Park, 23rd Ave., Denver, Colo., Sept. 21.

University of Minnesota Annual Shade Tree Maintenance Short Course, St. Paul campus, Sept. 21.

Pacific Northwest Spraymen's Assn. Spray-O-Rama, Thunderbird Motel, Portland, Oregon, Sept. 23-24.

Oklahoma Nurserymen's Assn., Annual Convention, Western Hills Lodge, Wagoner, Sept. 26-27.

Arizona Nurserymen's Assn., Annual Convention, Nogales, Sept. 26-27.

Missouri Lawn and Turf Conference; Missouri Valley Turfgrass Assn. Annual Meeting, University of Missouri, Columbia, Sept. 28-29.

Montana-Wyoming Turf and Nursery Assn., Convention, Montana State University, Bozeman, Oct. 3-4.

Ohio 25th Short Course on Roadside Development, Departments of State Bldg., Columbus, Oct. 3-7.

University of Florida 14th Annual Turfgrass Management Conference, Ramada Inn, Gainesville, Oct. 4-6.

National Recreation and Park Assn. Congress, Washington-Hilton Hotel, Washington, D.C., Oct. 9-13.

Florida Nurserymen and Growers Assn. Trade Meet and Short Course, George Washington Hotel, Jacksonville, Oct. 14-16.

National Conference on State Parks, 46th Annual Meeting, Kentucky Dam Village State Park, Ky., Oct. 16-21.

and other factors. More than 15 acres of bluegrass sod was laid after hand finishing and fertilizing the land. Carmichael commented wistfully that he didn't think this landscaping achievement would be surpassed in his career.

Westward Wind Woes

Biggest problem facing tree growers in San Francisco, sometimes known as the "treeless city," are the strong westerly winds up to 25 miles per hour during all seasons of the year. Frisco's supervisor of landscaping and street tree planting, Brian Fewer, came to the Cleveland shade tree meet to report his planting program for the peninsular city.

His two-pronged attack to erase the tree-bare reputation includes a municipally run landscaping effort on boulevards, traffic islands, freeway interchanges, hospital grounds, and planting of street trees with city funds. The second phase encourages property owners and merchants to plant and maintain their own street trees.

A pilot tree program during the last 10 years is revealing species which will withstand the rigors of Frisco's shifting fogs, cool weather, and the Pacific's air-conditioning winds, Fewer explained. And, thanks to an active public relations campaign, the initial disinterested public attitude towards a planting program has been reversed. More than 50,000 trees have been planted in the last six years by this "do it yourself" program, Brian Fewer boasted.

A Tree for Every House

A tree ordinance in Warren, Mich., requires each builder to pay the city to plant a tree in front of each new house he builds. Enactment of this law was one of the first tasks Albert T. Ayling, Warren's city forester, accomplished when he was hired six years ago to set up the town's forestry department. Money a builder pays is extracted when he takes out the building permit and then is deposited in a fund which helps finance an annual planting of over 4,000 trees.

A stumbling block to be surmounted by forester Ayling was where to locate the trees to supply this voluminous demand. "Trees are in great demand and short supply. In order to insure



Tree evaluation was the discussion topic for municipal arborists (left to right): Wilbur Garmhausen, Jr., Harold Groth, and George Creed.

a steady supply of desirable species, something unusual had to be done," Ayling recounted. Answer? City Council was asked to approve the bidding of a five-year contract for 4,000 trees per year. Cottage Gardens Nursery, in Warren, was the original successful bidder in 1962 and another contract has just been let to run for five years more.

Warren's forestry chief sees these advantages of such a long-term arrangement: assured dependable supply of specified species and sizes, scheduled and coordinated delivery, and lower unit cost.

Panel Airs Tree Needs

"Trees are no different from other plants in their basic nutritional requirements," Dr. Eugene B. Himelick, of the Illinois Natural History Survey, Urbana, instructed. Opening speaker on the fertilization and aeration panel arranged by the National Arborist Assn., the tree expert went on to describe results of fertilization studies in progress for four years at the Morton Arboretum, Lisle, Ill.

In tests conducted with Dr. Dan Neely, five types of fertilizers were applied to pin oak, white ash, and honeylocust by four different methods: surface application, dry in holes, solution injection, and foliar spray. Trees responded equally well to all methods but foliar application, where little benefit resulted. Trees were measured for circumference growth and also rated for deepness of color, found to correlate closely with growth response.

Fertilizers used were ammonium nitrate, urea, P-K combination, N-P-K balanced fertilizer, and N-P-K with minor elements

added. "Where nitrogen was included in the fertilizer," the plant pathologist summarized, "similar benefits in growth were obtained, while phosphorus and potassium alone gave no significant increase over the check."

In other tests conducted at Oregon, Ill., 6 lbs. of urea per 1,000 sq. ft. have been applied to four species. First year results show treatment increased growth 190% in walnut, 95% in sycamore, 51% in green ash, and 5% in red pine. Six pounds of N per 1,000 sq. ft. is about the optimum amount for good growth response, Dr. Himelick said.

The arborist offered these suggestions for fertilizing trees: measure accurately the area in sq. ft. to be covered, using a square or rectangular grid for ease of computation; apply N at 6 lbs. per 1,000 sq. ft. by surface, hole, or injection methods; apply P and K in a balanced mix every three to five years or when tests indicate a need; when applying dry in holes, drill 12 in. to 15 in. deep at 2 ft. intervals, and beware of using too much fertilizer; for soluble injections, apply 18 in. deep at 2½ ft. intervals.

Vertical Mulching Airs Soil

Wayne C. Morgan, of the Agricultural Extension Service, University of California, second speaker on this symposium, advised that poor irrigation practices, too-rapid water runoff, and grass competition often work to the detriment of trees planted in turfgrass areas. What will help correct this problem? Vertical mulching, the extensioner answered, enthusiastically.

Drill 18 in. deep holes with a 2 in. or 3 in. auger, one per sq. ft. within the drip line, and fill with sawdust, shavings, and fertilizer. Results have been apparent within two weeks, Morgan reported. Vertical mulching provides channels for water and nutrients to enter the soil, allows for a more favorable rooting medium, and adds moisture holding capacity.

The practice benefits not only established trees but also newly planted balled trees. For these, he recommends slanting the hole across existing soil into the ball of the transplanted tree. The Californian added this caution: unless there is a real need for water, air, and nutrients, there is no need for vertical mulching. Not much, if any, improvement



Progress reports on a new growth retardant were presented by members of this utility arborist panel. Panelists (left to right) included moderator Fred A. Ashbaugh, Gill K. Brown, Ralph C. Ratcliff, R. R. Bruns, and B. W. Bergstrom.

will result when trees are normally healthy.

Anchor man on the panel, Jack Wikle, horticulturist with the Davey Tree Co., Kent, Ohio, traced the evolution of Davey practices from complete cultivating of soil around trees, through the trenching technique, to the current widely-employed practice of "perforation feeding" Davey's term for vertical mulching.

How Much Is a Tree Worth?

The value of a tree depends upon a number of factors, not the least of which is whether it's a park tree or an individual shade tree. It depends on the tree, on who is evaluating it, on what evaluation system (or combination of systems) is used, and on the feelings of the evaluator. Whatever can be said about tree values, the three Ohioans who addressed the question in a municipal arborist panel, moderated by New Yorker Carl Schiff, agree that tree value guides are much needed and that there is currently considerable difference of opinion on the subject.

Harold Groth, Director of Cleveland Metropolitan Parks, examined the question from the position of the park expert faced with increasing encroachment from highways, utilities, and other public and private agencies. How much is a tree worth? Where parks are concerned, Groth lamented, a tree is too

often considered merely a fixture of the land with no special value at all.

Wilbur Garmhausen, Chief Landscape Architect for the Ohio Department of Highways, directed his talk to the roadside tree program. How much is a tree worth? To Garmhausen, a tree is worth its contribution to roadside beauty, to highway safety, and to maintenance reduction (he cited reduced snow removal costs where woodlands are adjacent to highways.)

George Creed, landscape architect from Cleveland, offered several factors that determine the value of a shade tree, including size, form, ornamental qualities, condition, longevity, adaptability, disease susceptibility, condition, location, and species. How much is a tree worth? A complex question, which depends on numerous factors that Creed feels cannot be reduced to a hard and fast formula. Yet a formula would be a good starting point for appraisers, he adds. If it can be determined, the best basis for valuing a tree is its replacement cost. When he evaluates trees, he has used several different guidelines, and much personal judgment.

Municipal Labor Source

"How can we maintain crew strength, and where can we get new men?" This was the perplexing question a panel of four municipal arborists attempted to

answer. Each agreed the market for capable young men is "tight", that salary levels must be raised to compete with those being offered by unions and the federal government; and that there should be a standardized selection method for hiring treemen.

Exchanging opinions on the arid labor pool were James T. Oakes, city arborist for Richmond, Va.; Robert R. Metz, assistant director of the Toledo (Ohio) Metropolitan Park System; Jack A. Kimmel, director of parks for the city of Toronto, Canada; and George S. Stadler, Denver, Colo. city forester. Wrap-up panel opinion was that the industry must do more to improve its public image to attract young men to it. This long-haul objective is not an easy, inexpensive one.

Trees and Proximics

B. W. Bergstrom, arborist for the New England Power Service Co., Lynn, Mass., opened his report to the utility arborist panel on tree growth retardants with a definition of proximics: the scientific study of space and how people react to it. He suggested a similarity between the unfavorable reaction of people to close spaces and the reaction of trees to utility lines, which are often uncomfortably close for both line and tree. Among the newest of tools for circumventing the tree-line relationship is the growth retardant B-164, an ethyl ester of Naphthaleneacetic acid developed by the Battelle Memorial Institute. B-164 is applied after pruning in an asphalt wound dressing carrier.

Favorable results in field tests were reported by panelists Bergstrom; Gill K. Brown, Right-of-Way Specialist for the Georgia Power Co.; R. R. Bruns, forester for the Union Electric Co., St. Louis, Mo.; and Ralph Ratcliff, forester for the Consumers Power Co., Jackson, Mich. Capsulizing panel reports, moderator Fred Ashbaugh called the chemical extremely promising, perhaps not the "ultimate" growth retardant, but a good beginning toward a much-needed item.

As for proximics, it was much in evidence in Cleveland, as the more than 800 arborists jostled for post position in the parade of convention activities. Next year's convention has been set for August 27 to 31 at the Marriott Motor Hotel, in Philadelphia, Pa.

Nurserymen at AAN Convention Told To Modernize Business Practices, Continue Beautification Work

Suggestions and pleas for sophisticated business management practices surrounded 1500 registrants who gathered for the American Association of Nurserymen's 91st annual convention in mid-July at Chicago's Palmer House. Bolstered by news of improved Association budgets and a revitalized executive staff, AAN delegates heard half a dozen top management experts and later completed a full roster of Association business during their three-day operations-oriented conclave.

Congratulations and inspiration greeted nurserymen at the first general session, a luncheon keyed by Mrs. Henry H. Fowler, wife of the Secretary of the Treasury and Chairman of the White House Beautification Speakers Bureau. Bearing thanks from Lady Bird Johnson for the AAN's "Plant America" campaign, Mrs. Fowler urged nurserymen to continue work to educate the public and to enhance America's natural splendor.

"We need horticulturists to change our urban image from honky-tonk to beauty," she implored. The longtime proponent of natural beautification suggested industry members tap the Job Corps for a potential labor source as nurserymen continue their important work in a manpower-short market.

Mrs. Fowler's talk followed the reading of a personal telegram from President Lyndon B. Johnson who also thanked AAN members for their "Plant America" efforts.

Formalities of past successes were set aside, though, as nurserymen settled down to a day-and-a-half "Management Opportunities Program" which included six speakers who explored various facets of business operations.

Insurance drew concerned attention from Warren G. Brockmeier, manager, client services,



New AAN Board of Directors (left to right from front): Martin W. Usrey, director at large, Monrovia Nursery Co., Azusa, Calif.; J. E. "Ted" Korves, vice president and regional director, Plumfield Nurseries, Inc., Fremont, Nebr.; Thomas B. Kyle, Sr., president, Spring Hill Nurseries Co., Tipp City, Ohio; Hoskins A. Shadow, regional director, Tennessee Valley Nursery, Winchester, Tenn.; Joseph H. Klupenger, regional director, Klupengers Nursery & Greenhouses, Inc., Portland, Ore.; Harold R. Nickel, regional director, Greenleaf Nursery Co., Muskogee, Okla.; William Flemer, III, regional director, Princeton Nurseries, Princeton, N.J.; John H. Powell, allied associate, Economy Label Sales Co., Daytona Beach, Fla.; and Kenneth J. Altorfer, regional director, McKay Nursery Co., Waterloo, Wis.

insurance department of E. B. S. Management Consultants, Inc. His admonition, "It's Your Business, Protect It Now," reminded growers of the insurability of products cultivated indoors and outdoors. "It may behoove owners to carry windstorm insurance on what they can, at reasonable expense, realizing that greatest losses may be to stock grown outside buildings. At least loss will be mitigated by having insurance on part of it, should a major windstorm hit growers' properties."

Pesticiders Need Insurance

Brockmeier outlined insurance programs beneficial to growers or handlers who apply insecticides. He recommended product liability coverage which "protects you against claims for injury to someone or for property damage to somebody's property caused by a defect in products you sold."

Turning to liability insurance for application of pesticides, the

insurance consultant suggested, "If you ever charter a plane or use a flying crop dusting service, buy nonownership aircraft insurance." Brockmeier also pointed out the need for employe bonding, insurance on nursery and growing equipment and facilities, and complete auto protection. He noted, too, the pitfall of overinsuring, observing, "Risks which can reasonably be borne by the business enterprise without danger to financial stability or to the general profit picture should not be the subject of insurance coverage."

"Consumer Satisfaction Depends on Good Management," horticulturist Hiram J. Johnson, vice president and sales manager of Conard-Pyle Co., West Grove, Pa., told delegates. Functions of management consist of five areas: planning, organizing, controlling, coordinating, and motivating, he said. Nurserymen must effectively handle these five tools, Johnson insisted, for their industry rests on accept-

ance by a public which "shares with us two of its most prized possessions, leisure time and luxury dollar."

Jack McLay, McLay Florist and Garden Center, North Andover, Mass., called for heightened industry standards. "A garden center should try to maintain a full yard of 'plantable material,'" he idealized. "End of season sales are harmful to the industry unless it is truly the end of a planting season for a particular collection of plant."

Credit Selling: "Ideal Terms"

Factors of "Credit Selling" were explored by Dr. John J. Brosky, associate professor of finance at the University of Washington. To develop a concept of the "ideal terms of sale," Brosky described ways to protect the intended profitability margin of the seller firm and to neutralize the effects of changes in the pattern of customer payment habits. His complex evolution of accounting procedure concluded with the advice that since accounts receivable rank first or second as major assets of most firms, investment in accounting improvement is essential to safeguard and control its economies.

Other AAN speakers included Ira M. Hayes, director of retail sales training for National Cash Register Co., and Donald Drane, Advanced Consultant, John Hancock Mutual Life Insurance Co. Hayes urged nurserymen to endorse enthusiastically "conformity, repetition, and identity" in their drive to "Get Out and Sell." These sales methods make people buy nursery products because others in their neighborhood have them (conformity), because the firm is a well-known one (repetitive advertising), and because it has a good public image (identity), Hayes capsulized.

Drane delved into the unpleasantness of business dissolution upon death of an owner or partner. In "It's Your Business, Let's Measure and Preserve Its Value," he listed steps to help nurserymen protect business interests for their families in case of death: determine disposition of

goods, make sure family has access to funds, evaluate business assets. The problems involved in estate clearance demand attention and planning, he summarized.

New Direction For AAN

Attention was not limited to promoting business efficiency, though, as delegates spent considerable time reviewing the organizational setup of their Association and honoring outstanding industry members.

At the first general business session on Monday, July 18, conventioners heard members of the AAN's Washington executive staff recount significant steps made by the Association during the previous year. 1965-66 saw the AAN come under complete management change, an "umbrella concept" by which the Association can better serve its members, as Executive Vice President Robert F. Lederer put it. Two other associations, the Horticultural Research Institute and the Wholesale Nursery Growers of America, Inc., will be managed by AAN executive personnel while maintaining strict autonomy in governing procedures.

Outgoing AAN President Martin W. Usrey, Monrovia Nursery Co., Azusa, Calif., announced the Association had recouped financial setbacks of previous years. Thomas B. Kyle, Sr., AAN vice

president and treasurer, Spring Hill Nurseries Co., Tipp City, Ohio, unveiled a new budget. Included in this lengthy proposal was an allowance which permits AAN staff and members to call in a firm of traffic consultants who will study transportation problems of the industry. "In my estimation, this AAN service will save everyone of us many times our annual dues each year," Kyle opined. Indirectly, this move is an outgrowth of what executive staffers considered one of the Association's most important efforts during the past year. AAN protests prompted an Interstate Commerce Commission hearing to investigate proposed REA Express rate increases on horticultural shipments. "This investment of slightly over \$1,000 (for the hearing) has already resulted in savings of tens of thousands of dollars in transportation charges to us all," Kyle added.

"Associate Members" Begun

Born at this 91st annual conclave was an Associate Members Division of the AAN. The new group is composed of AAN members who are not in the nursery business; it will act as spokesman of all associate members dealing with the AAN and other nurserymen organizations. John H. Powell, Economy Label Sales Co., was elected president of the Associate Members Division; Donald J. Murray, Stoffel Seals



Mrs. Henry H. Fowler, wife of the Secretary of the Treasury and keynote speaker for the 91st annual AAN convention, pauses to chat with Robert F. Lederer, AAN executive vice president.

Corp., became treasurer; and Donald S. Mayer, Premier Peat Moss Corp., took the secretary post.

Elections for officers of the 1400-member AAN saw Thomas B. Kyle, Sr., move into the presidency after 4 years on the AAN Board of Directors. J. E. "Ted" Korves, Plumfield Nurseries, Inc., Fremont, Nebr., was elected to the vice presidency. Walter M. Ritchie, Ritchie's Garden Center, Colonia, N. J., was returned as an AAN trustee.

Directors for new two-year terms are William Flemer, III, Princeton Nurseries, Princeton, N. J.; Kenneth Altorfer, McKay Nursery Co., Waterloo, Wis.; and Martin W. Usrey, Monrovia Nursery Co., Azusa, Calif.

Howard P. Quadland, retiring AAN director of public relations, was honored for his long service to the Association. Hugh Stevenson, Forest Keeling Nurseries, Ellsberry, Mo., represented the Association during a ceremonial presentation to the pioneering publicist. Wayne H. Dickson has been named as Quadland's successor and assumed duties in July as AAN's public relations director, moving the PR office from New York to Association headquarters in Washington, D. C.

AAN Garden Writer's Award went to Victor H. Ries, garden editor of the Columbus, Ohio, *Citizen Journal* and author of numerous horticultural books and articles.

Dr. Paul Betjer, research plant physiologist at the U. S. Department of Agriculture's regional laboratory at Wenatchee, Wash., won the Norman Jay Colman Award. The plaque, presented annually to an individual who has made an outstanding contribution to horticultural progress through research, is named for the first U. S. Secretary of Agriculture, Norman Jay Colman, often called "The Father of the Experiment Stations."

Dr. Richard P. White, who has directed the Horticultural Research Institute since its inception in 1962, was honored upon his retirement for outstanding contributions to HRI.

Elmer Palmgren, Palmgren Nursery Supply, Chicago, served as General Chairman for this year's AAN meeting.

Vice Chairman was Alfred L. Fiore, Charles Fiore Nurseries, Inc., Prairie View, Ill. Besides the business and educational sessions, the convention featured a trade show which included 110 exhibitors and active ladies and "junior nurserymen" programs. Supplementing official sessions were tours to outstanding horticultural establishments and fine residential plantings in the Chicago area.

Northwest Turfmen Meet at Oregon Coast, Oct. 26-28

Oregon's seacoast and sand dunes serve as the background for the 20th Annual Northwest Turfgrass Conference to be held Oct. 26-28, at the Salishan Lodge in Gleneden Beach, Ore.

Program arrangements are nearly complete and will include talks on "Frost Protection for Turfgrasses," by Dr. Jim Watson, Turf and Toro Co., Milwaukee, Wis.; "Public Relations for Turf Managers," by Warren Nunn, assistant to Oregon's governor; "Winter Injury to Turfgrasses Caused by Low Temperature," by Dr. V. C. Brink and associates, of the University of British Columbia, Vancouver, B. C., Canada; "Weed Control in Turfgrasses," by Dr. A. J. Renney, University of British Columbia; "The Action of Herbicides in the Control of Weeds," by Dr. Appleby of Oregon State University, Corvallis, Ore.; "The Effects of Salts on Turfgrasses," by Charles G. Wilson, Milwaukee Sewerage Commission; "Ornamental Weed Control," by Arthur Myhre, Western Washington Research Center, Puyallup, Wash.; and "Research Progress Reports," from staff researchers of Washington State University.

Panel discussions will include "The Control of Turfgrass Diseases," and "Establishing New Turfgrass Areas." Dr. Roy Goss, executive secretary of the Northwest Turfgrass Foundation, at Washington State University, Western Washington Research

and Extension Center, Puyallup, Wash. 98371, has further registration details.

Mich. State University Begins New Turf Course

A special 18-month course in turf management, beginning Sept. 29 at Michigan State University in East Lansing, will study the identification, establishment, and maintenance of turfgrasses for various uses. Other topics include soils and fertilizers, landscape construction, drainage and irrigation, operation and maintenance of mowers and power tools, and insects and diseases of turfgrasses. Courses in written and spoken communications, business records, and personnel management are also on the program.

Including two quarters of on-the-job training in the spring and summer of 1967, the course will run from Sept. 29, 1966 to March 22, 1968, with four quarters of on-campus study. Additional information and application forms are available from the Short Course Department, Michigan State University, East Lansing, Mich. 48823.

Right-of-Way Group Sees Spray Gear, Sept. 12-15

All types of right-of-way spray equipment will be demonstrated when members of the Mountain Lake Right-of-Way Maintenance Conference gather at the Tinker Mountain Motor Lodge in Roanoke, Va., for their Sept. 12-15 annual meeting.

Included in the Sept. 13 equipment show will be hydraulic rigs, mist blowers, and other ground items, as well as representative helicopter-mounted spray gear. Results of commercial applications for brush control, tree inhibition, and soil sterilization will also be shown. Formal presentations on some problems of right-of-way maintenance, and a tour of experimental brush control plots at the Virginia Polytechnic Institute will close the technical portion of the meeting.