

meeting dates

S	M	T	W	T	F	S
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13	14	15	16	17	18	19
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27	28	29	30	31		

Arizona Turfgrass Conference, Stardust Motor Hotel, Yuma, Ariz., April 5-6.

Williamsburg Garden Symposium, Colonial Williamsburg Gardens, Va., Apr. 9-15.

Southeastern Turfgrass Conference, Coastal Plain Experiment Station, Tifton, Ga., April 10-12.

Canadian Chapter of the International Shade Tree Conference, Holiday Inn, Hamilton, Ont., Canada, Apr. 14-15.

National Golf Foundation, Inc., annual meeting, La Coquille Club, Palm Beach, Fla., Apr. 24.

Florida Floriculture Short Course and Open House, 18th industry short course, Bradenton, Fla., April 25-27.

Sub-Tropical Turfgrass Trade Show, Deauville Hotel, Miami Beach, Fla., May 7-10.

Florida Nurserymen & Growers Association, Walt Disneyworld, Orlando, Fla., May 25-27.

International Vehicle and Highway Safety Conference, in conjunction with the **United States International Transportation Exposition (TRANSPO 72)**, Sheraton Park Hotel, Washington, D.C., May 30-June 2.

Watersheds in Transition, a national symposium, Colorado State University, Ft. Collins, Colo., June 19-21.

National Golf Foundation Western Seminar, Sunriver Lodge, Sunriver, Oregon, June 26-30.

American Association of Nurserymen, Statler Hilton, Washington, D.C., July 16-19.

National Golf Foundation Eastern Seminar, Pine Needles Country Club, Southern Pines, N.C., Aug. 7-11.

American Association of Nurserymen Management Seminar, Syracuse University campus, Aug. 13-18.

Canadian Parks/Recreation Association, 1972 conference, Ottawa-Chateau Laurier Hotel, Aug. 14-17.

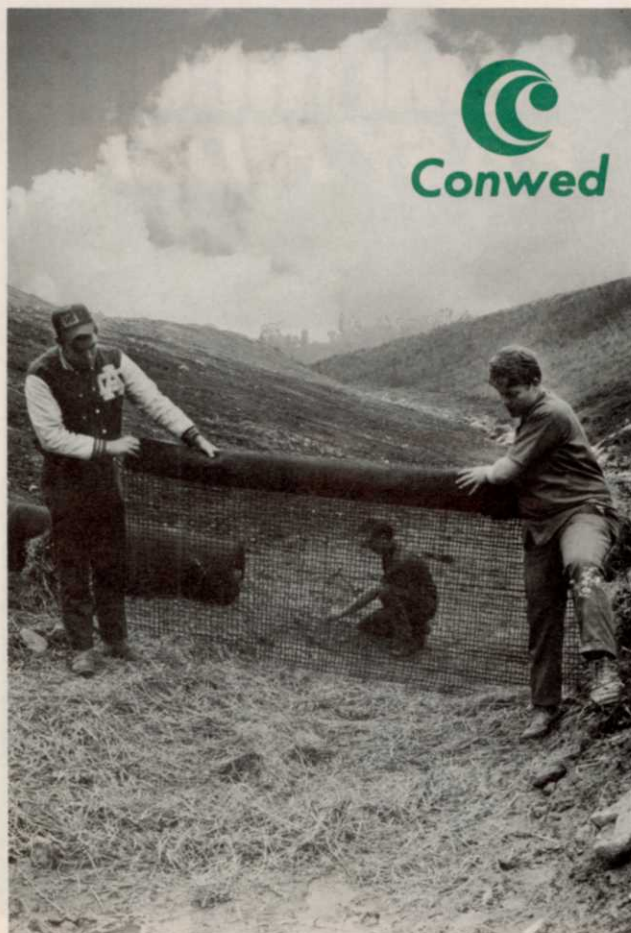
Eastern Kentucky Turfgrass Field Day and Conference, Powell Building, Eastern Kentucky University, Richmond, Ky., Oct. 10-11.

Turfgrass Equipment and Materials Educational Exposition, 12th annual, Southern California Turfgrass Council, Brookside Park, Pasadena, Calif., Oct. 11-12.

Golf Course Superintendents Association of America, 44th annual International Turfgrass Conference and Show, Boston, Mass., Jan. 7-12.

California Weed Conference, 25th annual, Disneyland Hotel, Anaheim, Calif., Jan. 15-17.

Southern Weed Science Society, 26th annual meeting, Jung Hotel, New Orleans, La., Jan. 16-18.



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insect report



INSECTS OF ORNAMENTALS

AN ADELGID

(*Adelges tsugae*)

VIRGINIA: Adults collected on hemlock at Rocky Mount, Franklin County on March 2. This is a new county record. Also, adults and eggs taken from hemlock in Northumberland County for a new county record.

BAGWORM

(*Thyridopteryx ephemeraeformis*)

ALABAMA: Eggs over-wintering in bags on shrubs in 3 sites in Lee County in excellent condition. Surveys show 99 to 100 percent survival.

BROWN GARDEN SNAIL

(*Helix aspersa*)

OREGON: Single live specimen found in survey of 10 greenhouses and garden centers in Multnomah, Washington, Clackamas County.

A PHYTOSEIID MITE

(*Ricoseius lococheles*)

FLORIDA: Nymphs and adults collected on seagrape, *Coccoloba unifera*, at nursery in Miami, Dade County, January 18, 1972. This is a new U.S. record. Previous records from Brazil and Puerto Rico.

TREE INSECTS

ELM LEAF BEETLE

(*Pyrrhalta luteola*)

NEVADA: Numerous adults emerged from hibernation in Reno and Sparks area of Washoe County.

MOUNTAIN PINE BEETLE

(*Dendroctonus ponderosae*)

CALIFORNIA: Causing damage to lodgepole pine in Silver Lake, El Dorado National Forest. Many old trees dead. Silvicultural control encouraged.

SPRING CANKERWORM

(*Paleacrita vernata*)

KANSAS: Expected to be serious on elms in eastern areas in 1972. During late February males noted in Shawnee and Riley Counties, and 2 gravid females noted in Riley County. Indiana: Moths observed in wooded areas in Owen, Putnam, and Montgomery Counties.

TENT CATERpillARS

(*Malacosoma spp.*)

OKLAHOMA: *M. americanum* (eastern tent caterpillar) hatched on wild plum in southeast and south-central areas. Larvae about 0.50 inch long in Choctaw and Bryan Counties and about 0.25 inch long in Marshall and Johnston Counties. FLORIDA: Larvae appearing at Gainesville, Alachua County, on wild plum. ARIZONA: *Malacosoma* spp. tents noted in several areas in Salt River Valley cottonwoods in Maricopa County.

NANTUCKET PINE TIP MOTH

(*Rhyacionia frustrana*)

ARKANSAS: Pine twigs examined for overwintering forms indicated moth emergence will be sufficient for heavy first generation in southern area.

EUROPEAN ELM SCALE

(*Gossyparia spuria*)

ARIZONA: Crawler stage noted on elm trees at Prescott, Yavapai County.

WEEDS TREES and TURF

DUTCH ELM (from page 13)

ability to solublize benomyl and finding a method of injection application, the problem becomes less complex.

WEEDS TREES and TURF asked Dr. Winand K. Hock, plant pathologist at the Shade Tree and Ornamental Plants Laboratory if this breakthrough means the end to the Dutch Elm Disease plague.

"We're still too premature to make a recommendation. We don't have all the data yet," he said. "I believe we are on the right track as far as benomyl is concerned. Certainly the material has the ability to prevent Dutch Elm Disease if we can get the fungicide into the vascular system of the tree.

"The use of benomyl and other systemic fungicides have increased the prospects of DED control. However, as with any new material there will be problems and benomyl is no exception. I believe our biggest problem is the development of a suitable and economical application technique. We must also take into account the possibility of adverse effects on the tree by the chemical," he said.

Dr. Hock's conservatism on this breakthrough is not to discredit the scientific work already accomplished. Rather, it shows that scientific success is still "in the embryonic stage." While the technique that has been developed holds promise, much testing both in the laboratory and in the field still remains.

Some of the initial studies of pressure injection were accomplished by Canadian scientists. Their data, along with information collected by the Shade Tree and Ornamental Plants Laboratory, has been carefully analyzed and forms the basis for Secretary Butz's announcement.

Plans for this year call for testing a number of application techniques in diseased trees in cities across the country. Some of these methods include Medicaps "cartridges manufactured by Creative Sales, Inc. of Fremont, Neb. and the Mauguet Injector sold by CLM National, Sedalia, Mo. When this data is thoroughly analyzed, plant pathologists such as Dr. Hock and others will be better able to recommend proper application techniques.

The concern to save the American elm from destruction has been foremost in the mind of John P. Hansel, executive director of the Elm Research Institute, a non-profit organization located in Waldwick, N. J. Hansel has explored virtually

every avenue in the Elm Research Institute's crusade to save the American elm. Through donations by individuals, organizations and municipalities the Institute has made grants to many major universities to conduct research on the ultimate control of the disease.

"We've been thinking monetarily when we should have been thinking sentimentally," Hansel told WEEDS TREES and TURF when asked about saving American elms. "What we have achieved in the past few months is just one more good step—not a breakthrough. The breakthrough comes when the private owner opens his pocket."

Hansel recognizes that the dark gloom that has shrouded elms for many years is now changing to dawn. "This is the first daylight," he says. "There's more work to be done. Spraying in the past has been hampered. People lacked the appreciation of the value of the elm and the cost of care. Too few arborists were confident enough to be elm experts.

"Then along comes Benlate (benomyl). Now we have a foolproof chemical." There's other steps that must be accomplished, however. "I think we've made the tools more foolproof," adds this crusader.

Hansel's concept of tools is detailed in what he calls "Specialized Elm Care." It includes prevention and therapy and as he points out "represents the collective experience of leading arborists, combined with the latest developments in the control of this dread disease."

Prevention or how to protect a healthy tree includes such items as dormant sprays, leaf sprays, feeding and pruning.

Scientists and others have known for some time that DED is often spread by the smaller European Elm Bark Beetle which feeds on healthy elms. As adult bark beetles leave diseased elm trees, fungus spores of DED (*Ceratocystis ulmi*) are likely to cling to their bodies. These spores enter healthy trees through the feeding wounds made by the beetles.

Insecticides, namely chlorinated hydrocarbons, have been used to combat the problem. However, while they were effective in controlling the beetle, residues were found to be harmful to other wildlife. Within the past three to four years scientists at universities and the U.S. Forest Service have been testing methoxychlor for beetle control. Although this compound is still a chlorinated hydrocarbon, its action

(continued on page 66)

The great dwarf Bluegrass that stands below the rest.

NUGGET BLUEGRASS

Nugget Kentucky Bluegrass was discovered in Alaska near the old mining town of Hope on Cook Inlet.

In tests by leading turf research workers, characteristics of Nugget have proven to be outstanding, with exceptionally uniform performance over a broad area.

DWARF CHARACTERISTICS

Nugget is a decumbent, dwarf type cultivar of Kentucky Bluegrass. Its leaves grow close to the ground and at cuts as low as 3/4 inch Nugget still displays excellent turf quality in both appearance and strength. Nugget has exceptionally uniform regrowth, remaining neat and even if left uncut for longer than usual lengths of time.

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Nugget's tolerance to powdery mildew contributes to its superior performance in shade as compared to other bluegrass varieties.

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In broad tests, Nugget has consistently ranked outstanding in resistance to *Helminthosporium* Leafspot. Nugget also shows good tolerance to Stripe Smut. It has also shown resistance to leaf rust, powdery mildew, and snow mold.

APPEARANCE AND COLOR

Along with its uniform growth, Nugget's appearance is enhanced by its fine leaf texture and unusually deep, dark green color.

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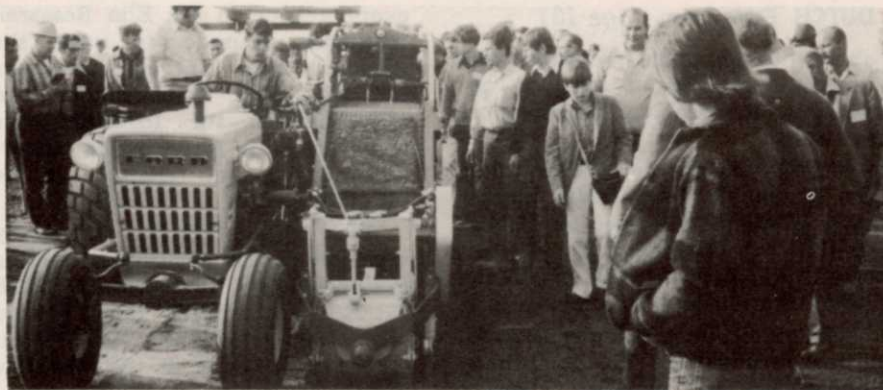
ASPA (from page 58)

400% volume of sod be sold to gain the same gross income.

Besides an intensive educational program, growers toured University of California research plots and one ranch of host Tobias Grether. Tours included a look at test plots of U. S. Borax, Elanco, Tuco Upjohn and others. A major exhibit and field day was also held on the Grether ranch where in addition to late models of more or less standard equipment, several new items were introduced. Toro displayed a hydro-mulcher, Grether demonstrated his custom-built, 12-foot flail mower for clipping sod, John Nunes demonstrated his new model harvester which includes a sod cutter and sod folding mechanism, and Ransomme demonstrated a new sod slitter attachment for their mower.

Headquarters for the session was Disneyland Hotel, adjacent to Disneyland, and this attraction proved worthy in that more families accompanied growers than at any previous meeting.

Next major event will be a summer meeting hosted by the Ontario, Canada, Nursery Sod Growers July 10-12.



New sod harvester model manufactured by John Nunes features sod cutter.



Raised gangs on the new slitter units demonstrated by Ransomme.

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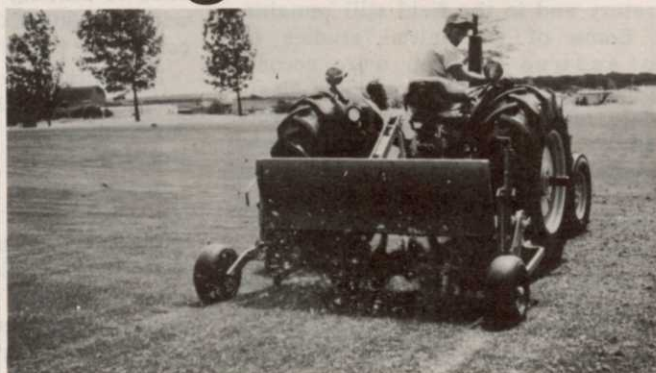
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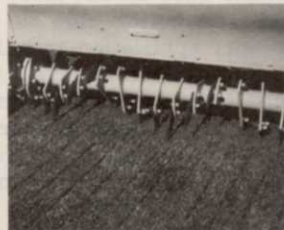
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Aquatic Weed Group To Meet July 9-12

Technical papers on aquatic weed control are being called for by Robert J. Gates, president of the Hyacinth Control Society, a national organization dedicated to control of all noxious aquatic weeds.

The annual meeting is scheduled July 9-12, 1972, at Miami, Fla. Gates has announced that headquarters will be at the Miami Springs Villas—Kings Inn, Miami. Reservations can be made directly with the hotel and convention rates are \$14.50, either double or single.

Program plans are tentative and will shortly be announced. Normally, 100 or more technical papers are presented by industry leaders and researchers in aquatic weed control. In addition, the Society normally sponsors a field day demonstration program. A special program for wives and children is likewise scheduled, and Gates reports plans are being formulated for a number of special activities for both.

Traditionally, the Society has extended an invitation to anyone interested in aquatic weed control. Besides members, attendance includes non-members from many states and usually several foreign representatives.

Details are available from Gates at Box 508, Floral City, Fla. 32636.

Scientists Seek Biological Control of Forest Pests

A new project aimed at biological control of forest insects is getting under way at the University of California, Riverside.

The project represents the first major effort to investigate "natural" methods of insect control, as opposed to conventional chemical methods, in southern California watersheds, according to entomologist E. F. Legner, who heads a five-man research team.

Biological controls are needed for two reasons, he said:

"There are increasing objections to the use of chemicals in forest, wildland, and watershed areas; and the control of pests with chemicals is extremely costly, as well as temporary in effect.

"Despite the importance of forest lands in California, there has been little effort to date toward biological control of insect pests by the importation of their natural enemies."

Specific objectives of the new project will be: to find and test natural enemies of needle miners,

the California oakworm, the California flatheaded borer, the pinyon pine sawfly pine scale, and a recently invading pine tip moth.

Parasites, predators, and pathogens (disease-causing agents) that attack pest insects will be found and studied carefully to make sure they are effective and safe—that is, unable to become pests themselves.

Dr. Legner said the first step will be to survey Southland forests to learn what natural enemies of pest insects already exist and how effective they are.

Second step will be to explore areas such as the forests of North America to find natural enemies in areas where some of California's pest insects are believed to have originated.

Third step will be to make periodic mass releases of beneficial organisms. This will be done cooperatively with U.S. and California forestry agencies.

Each release will be evaluated with the aid of computers, Dr. Legner said.

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DUTCH ELM (from page 63)

on wildlife is considerably less severe than other members of this chemical family.

Hansel's prevention program calls for a dormant spray of two percent concentration of methoxychlor prior to leaf emergence. This would be followed with a leaf spray of methoxychlor and Benlate benomyl fungicide applied as a foliar spray one week after leaves reach full size. He believes that "should the fungus be introduced by bark beetle feeding, the absorption of the fungicide through the leaves and young bark will help prevent growth of the fungus and restrict its spread into the system of the tree."

As another part of the prevention program, Hansel recommends feeding the elm tree to maintain a healthy state and pruning as needed, but not during the period when beetles are active.

Treating a diseased tree is what Hansel terms therapy. The first step involves surveillance — a visual sighting of the tree daily during June, July and August for signs of wilt or leaf chlorosis. Injecting a fungicide into the tree's vascular system comprises step two. Pruning of limbs that show flagging (wilt) follows next. Lastly, laboratory identification of DED should be accomplished.

Hansel's record of success looks good. Over a 13 year period, one elm specialist who practiced "Specialized Elm Care" averaged less than 1 tree in 100 lost to DED.

What does "Specialized Elm Care" cost? Hansel says it varies from community to community, but costs range from \$50 to \$100 per year for an average 2-foot diameter elm. Contrast this to as much as \$400 to \$500 to remove a diseased elm in some cities and the cost of "Care" is quickly justified. "This cost is no more than a 'service contract' charge for many appliances with a life expectancy of only 10 to 15 years," notes Hansel.

What other avenues are available in Dutch Elm Disease control?

Plant breeders continue their search in hybridizing the American elm with a more disease-resistant elm species. Their goal is an elm that retains the beauty of the American elm yet exhibits resistance to DED.

Scientists have also discovered that some American elms appear to be naturally resistant to DED. Why? No one knows at this time, but re-

searchers are working on this mystery.

Another glimmer of hope lies in the introduction of a non-stinging wasp, *Dendrosoter Protuberans*, imported from Europe to act as a parasite of the smaller European Elm Bark Beetle. The wasp would lay eggs in the larvae of the beetle. When the eggs hatch, the larvae of the wasp feed on the beetle larvae and kill them. If the wasp spreads throughout the country, it eventually could be an important factor in stopping the spread of DED.

Dr. James Butcher, Michigan State University entomologist says, "As yet we don't know the extent of



This small, non-stinging wasp pushes through elm bark to lay its eggs in the larvae of the elm bark beetle. The wasp larvae become parasites of the beetle larvae, eventually killing them.

its spread, how high its populations are or the significance it will have in the future. We are working closely with the U. S. Forest Service to determine the significance of these developments.

The work that the Shade Tree and Ornamental Plants Laboratory, the Elm Research Institute, the U.S. Forest Service and others has stirred the fire of hope into a raging inferno. Interest is at an all time high and individuals, organizations and municipalities are anxious to try the new discoveries and techniques that scientists have developed.

Optimistically, John Hansel sums it up this way. "I believe we are going to save many thousands of trees this year."

classifieds



When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

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MISCELLANEOUS

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PROFITABLE TREE — Spray & Landscape Service. Modern plant and equipment. Good management and sales force. Signed orders for '72 booked to capacity. Owners would like to retire but will stay with operation during transition. Write Box 82, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

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SOD QUALITY MERION SEED for discriminating growers. Also Fylking, Delta, Park, Newport, Nugget and Pennstar bluegrasses as well as fine fescues. We will custom mix to your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837.

CROWN VETCH SEED Penngift and Chemung varieties in good supply. Direct all inquiries to: Walter C. Mehlenbacher, Castile, New York 14427. Phone 716 493-2553.

REAL ESTATE

FARMS FOR SALE—78 acre north-ern Indiana muck sod farm with modern residence and outbuildings. Complete with all equipment. Established business. 140 acres growing sod with lease. Favorable contract sale. Schrader Real Estate, Inc., 209 W. VanBuren, Columbia City, Indiana 46725. Phone 219 244-7606.

EDUCATION-BOOKS

LEARN AUTOMATIC IRRIGATION. Easy to follow text and diagrams on latest valves, heads, controllers. System design, operation and trouble shooting. Write for free outline on this ten lesson low cost course. Larson Company, P.O. Box 4453, Santa Barbara, Calif. 93103.



NATURAL TURF MAINTENANCE costs are less than artificial turf, according to Melvin J. Robey, superintendent of Purdue's athletic facilities. For Ross-Ade Stadium, the university's football field, he said resodding cost \$2,600 including labor and materials. Artificial turf manufacturers claim the same area would cost from \$25,000 to \$30,000.

Cost of maintenance and resodding for a year was \$4,475, with artificial turf producers claiming a cost almost five times as much. Yearly maintenance of an artificial turf football field would amount to \$5,000 according to its manufacturers, Robey said.

TALL FESCUE AND KENTUCKY bluegrass have cut growing time for sod in Harford county, Maryland, from the normal two to two-and-a-half years down to 18-20 months. Producers were using creeping fescue and Kentucky bluegrass, but shorter time to harvest plus a slight price advantage has convinced growers to switch. One producer increased his experimental three acres to 50. Two other sod producers have seeded 110 acres.

A CONTROLLED CHECK by Federal inspectors of commercial interstate trucks and busses in highway use has shown that 17 percent of the vehicles were in unsafe operating condition. They were ordered out of service until the mechanical deficiencies were corrected. Percentage of vehicles ordered out of service as a result of safety checks during random inspection activity was 24 percent.

PUTTING GREEN SOIL should have a percolation rate of about five inches per hour. The same soil should have a total pore space of about 35 percent by volume. Capillary pore space should account for about 25 percent of this. The rest should be non-capillary pore space. University of Florida research has demonstrated that adding colloidal phosphate, vermiculite and/or peat to sand in the proper proportions can result in a mixture with those desired physical properties.

FOUR MILLION private individuals own almost 303 million acres of forests, or nearly 66 percent of America's forested land.

JAMES CIPRA of Burr Ridge, Ill. takes his job home with him at night. A tree trimmer by trade, he whittles and carves things out of wood in his spare time. Owner of Riverside Tree Service, Cipra started whittling about two years ago. He turns out everything from toothpicks to totem poles.

PULLING WEEDS WON'T HELP says South Dakota State University. Their research shows that the root system of a single plant of field bindweed will penetrate the soil to a depth of 4 feet in one season and spread 2½ feet laterally. After three growing seasons the roots have extended downward 18 to 20 feet and covered a circle 17 to 18 feet in diameter.

Prentiss Drug & Chemical Co., Inc., is relocating its Chicago branch office to new and larger quarters at 15 S. Prospect Avenue, P.O. Box 701, Park Ridge (Chicago), Ill. 60068. The firm is a producer of insecticides, rodenticides, chemicals and drugs.

Sodding Specifications Developed by ASPA

Guideline specifications for sodding have been developed by the American Sod Producers Association.

Purpose is to provide architects, owners, builders, developers and others with information to guide their efforts in using sod. Many plans today merely list "this area to be sodded." The Association has long believed that some specific guidelines would be helpful for the industry.

Information in the new publication includes that on soil preparation, sodding and turfgrass management with details on practically every area of management.

Major sections include specifications on subsoil preparation, topsoil material and application, fertilizer and pH corrections materials and final soil preparation, specifications for sod materials and transplanting, and for maintenance of transplanted sod.

Dr. Henry Indyk, executive-secretary of the ASPA, has announced that single copies are available via his office on request, at P. O. Box 231, New Brunswick, N. J. 08903.

The Grounds For Grass

Presented as part of a paper, "Grass and The Tamed Landscape" by Walter Bruning, A.S.L.A., landscape architect consultant for Jacobsen Manufacturing Company.

- 1. Grass Freshens the Air** — Like the leaves of trees, grass — through the process of photosynthesis — absorbs the pollutant carbon dioxide and gives off the oxygen atom.
- 2. Grass Filters Out Dust and Dirt** — Dust particles (from leaves of trees) either drop or are washed from the leaves to the grass below. The grass blades trap the particles and eventually are absorbed into the soil.
- 3. Grass Controls Erosion** — A healthy stand of grass prevents wind erosion, water erosion and retains precious water.
- 4. Grass Reduces Glare** — Just picture yourself at mid-day driving a four-lane ribbon of concrete in mid-July as opposed to resting your eyes on the green of Central Park.
- 5. Grass Reduces Radiation** — Of the total amount of solar heat striking the surface of a lawn, 5 percent is reflected, 5 percent is absorbed and 50 percent is eliminated through the transpiration or cooling process.
- 6. Grass Helps Deaden Sound** — The Riverbank Acoustical Laboratory of the ITT Research in Geneva, Ill., compared the acoustical qualities of turf with a heavy carpet on a felt pad. Surprisingly, the grass proved to have superior sound absorption qualities in the low and high frequencies which are the most annoying to man's ears.
- 7. Grass is Essential to Wildlife** — Grass is a source of food to many forms of wildlife and provides a haven for song birds, game birds and small animals.



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