ten minutes from downtown Philadelphia.

Approximately 1000 tree men, many with their families, will be coming to Philadelphia for the convention.

Another convention highlight will be the commercial equipment demonstrations to be held all day Wednesday, Aug. 30, very near Marriott Motel, in a section of Philadelphia's famous and beautiful Fairmount Park, one of Philadelphia's most valuable assets; the largest Municipal Park in the world, which is celebrating its 100th Anniversary this year.

Manufacturers To Be Well Represented

Virtually every major manufacturer of equipment used in any phase of tree work will be there to demonstrate the very newest tools of the tree industry, from lightweight chain saws, to wood chippers, to giant aerial lift platforms, and tree movers.

The first time the 43-year-old convention was in Philadelphia was 1926, and the last time was 1957. Since 1957, however, there have been basic changes in the tree care industry, and manpower shortages have resulted in more sophisticated power equipment.

Experts from all parts of the world are scheduled to speak to the gathering of tree men, while an extensive tourist program has been set up for the other members of the family. The ladies program includes a walking tour of the Independence Hall area, a guided tour of the Philadelphia Art Museum, and lunch at the top of the Barclay Hotel.

The youth program includes a trip to the Philadelphia Zoo, the Franklin Institute, and the Museum of Natural History.

"Municipal Arboriculture" will demand a special session for interested people. Among the several topics in this special session will be the use of plant containers in downtown areas by Dr. Yves Desmarais, deputy director of the Montreal, Canada, Botanic Garden.

There also will be a discussion session about the best trees for downtown planting. The moderator for this discussion will be Brian Fewer, supervisor of street tree planting, Department of Public Works, San Francisco, Calif.

Utility arboriculture is a field that is steadily growing in public interest, and because of this increased interest and concern, is getting more and more attention from all utility companies. Mr. R. L. Harper, the arborist for Philadelphia Electric Company and co-chairman of this year's convention, will talk about this public concern and how the Philadelphia Electric Company stays ahead of the problem in his presentation, "Kilowatts and Beautification."

Also, in the same vein, there will be several experts to talk about the rapidly growing field of Chemical Vegetation Growth Control. J. H. Kirch, marketing manager for Amchem Products, Inc., one of the major suppliers of chemicals for growth control, will discuss "Prescription Vegetation Control-Realistic and Necessary."

"Line Design and Tree Com-

patibility" will be discussed by R. B. Beck, general superintendent, Southern California Edison Company, Los Angeles, Calif.

The executive director of the ISTC, Dr. L. C. Chadwick, will moderate a discussion on "Shade Tree Supplies—Quantities Available In The Years Ahead." An innovation at this year's convention is called "Slide Parade—Gripes and Brags." Any member may show up to six slides on any subject.

Dr. L. C. Chadwick Retires From University Post In '67

Dr. L. C. Chadwick, head of the Division of Floriculture and Ornamental Horticulture at The Ohio State University, Columbus, O., retires beginning next month. WTT is happy to honor him with his appearance on the special ISTC issue cover. He serves as executive director of the ISTC.

Dr. Chadwick, or "Chad" as he is known, is a native of Vermont with a B.S. from the University of Vermont. He served as an instructor at Cornell until 1929 when he became a staff member at The Ohio State University. His doctorate was granted by Cornell in 1931.

During his tenure at The Ohio State University, he served in a dual capacity with O.S.U. and with the Ohio Agricultural Research and Development Center at Wooster, O. The Center, formerly the Ohio Agricultural Experiment Station, operates as the research arm in agriculture for Ohio, and is an independent entity.

Through the years Dr. Chadwick has become well known for his ornamental tree and other research including selection and use of wood plant materials, arboriculture, plant propagation and nursery management. He is a member of numerous societies in his field and is active in civic groups as well. He has co-authored two books with Professor Alex Laurie, also of O.S.U., and has published numerous bulletins and papers in his field. Among his many honors is the ISTC award of merit, given in 1963. This award was based on his service and leadership in the organization and his interest in the field. The same year, the American Horticultural Society presented him its citation award for more than 30 years' service as teacher and researcher in ornamental horticulture, and for service to arborists of the nation and assistance in the affairs of their organizations. In his adopted home state, the Ohio Nurserymen's Association early this year established the L. C. Chadwick Memorial Research Fund at O.S.U. in his honor.

Thrips Foiled By New Chemicals

Thrip damage which has attacked the popular Cuban laurel, or laurel fig, ornamental tree for the past 7 years can now be alleviated.

Cygon, federally approved as a drench on ornamental trees, has proved almost 100% effective in killing the insects. A solution is applied by drenching soil around the base of the tree trunk. Chemical soaks into the ground and is taken up by roots to become a part of the sap system of the tree. Thrips feeding on leaves are killed. Treatment, according to University of California researchers at Riverside, Calif., will last 160 days. Children and pets must be protected from treated areas until the surface is dry.

Equally effective chemicals are Meta-Systox-R and Ambush; however, these have not as yet received federal approval.

Cuban laurel is a southland ornamental which resists smog and dust and which has been very popular in California. Prior to 1959, it suffered little or no damage from pests. Then thrips began attacking the trees as far north as San Mateo County in California.

A research team of Andrew S. Deal, extension entomologist, and William R. Bowen, research technician, aided by Wesley A. Humphrey, Orange County, and Jack L. Bivins, Santa Barbara County, tested the new systemic compounds throughout the area.

SOD INDUSTRY SECTION

Mechanical Wheel-Move Irrigation System Saves Field Time For McGovern Sod Farms

As any sod grower knows, "You are out of business if you don't irrigate." And on the larger sod operations, getting an adequate amount of water applied during the time grass needs it most may be a frustrating task. This is especially true during the dry months of summer, when sprinklers must be kept in constant operation to fulfill the demands of rapidly developing root systems.

The reason for such frustration lies primarily with the time lost in moving standard irrigation piping. Naturally, pipe cannot be moved while the sprinklers are in operation. The system must be shut down and restarted after the pipe-moving operation has been completed. Such time lost generally requires 20% of the total time allowed for sprinkling. For example: A given field may be irrigated for 2 hours before movement is necessary, and such movement may take three men ½ hour. This large amount of time lost has prompted many growers to invest in mechanical wheel-move irrigation systems.

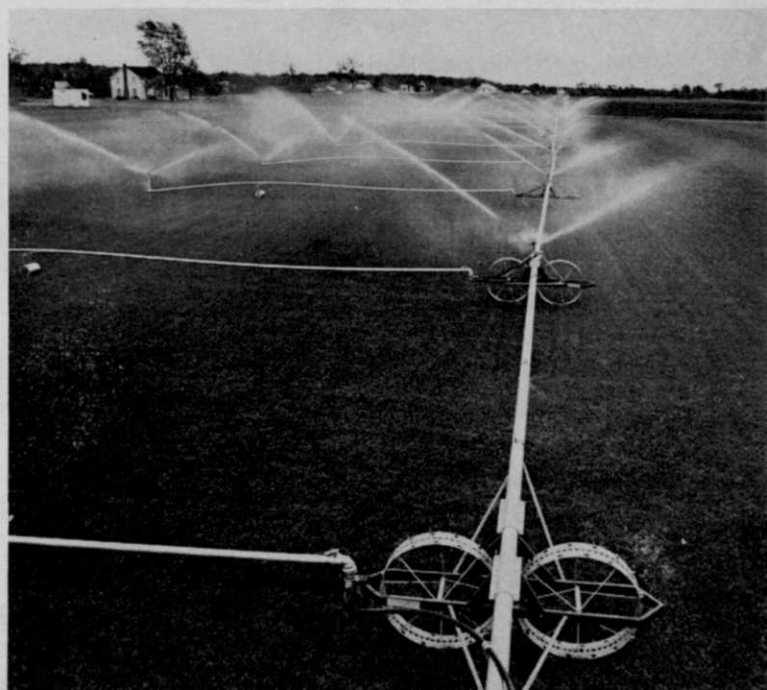
McGovern Sod Farms of Melville, N.Y., is one of these innovation-minded growers. To date, McGovern has invested in two of these systems, each able to keep a ¼-mile length of 4"-diameter pipe in constant sprinkling operation. McGovern's new mechanical irrigation systems have the aluminum pipe sitting on an "A" frame, mounted on a set of steel wheels, neither pipe nor sprinklers ever turning. This new system features an exclusive hydraulic drive with a self-starter and utilizes forward, neutral, and reverse by means of an easily controlled hand valve.

Moving at the rate of 15 feet per minute, all wheels drive at the same time from the center source of power, a gasoline engine. In the event one wheel bogs down or meets some obstruction, a safety design feature shuts off the power to prevent twisting the line. As the power goes off, the wheels are automatically locked so that the movement due to wind, incline, etc., is precluded. Another noteworthy feature is the fact that the self-draining sprinklers stay upright at all times.

First East Coast System With Drag Line On Wheels

The East Coast distributor of these systems, National Irrigation, Inc., of Roosevelt, New Jersey, informs McGovern that, "This is the first mechanical irrigation system in the east that has a drag line following the wheels with a sprinkler at the end of each pipe."

Both Dick and Ed McGovern,



McGovern's wheel-move irrigation system travels at the rate of 15 feet per minute, all wheels being driven by a gasoline engine. Should one wheel lag, power is shut off automatically. Wheels lock in place when power is shut off. Big advantage of system, according to owners, is labor and time saved.

you'll be rolling in green stuff

PATENT APPLIED FOR

if you roll with a NUnes sod harvester

With a NU nes Sod Harvester and three men, you can lift, roll, and palletize up to 1,200 square yards of sod per hour. NU nes, developed at Cal-Turf Farms, is designed to handle any length of rolled or slabbed sod. Field grading of sod is done by the tractor operator, who has clear visibility at all times. Hydraulic controls permit quick and easy adjustment for all conditions. The Sod Harvester travels alongside, never on the turf, during harvesting, and can pick up and roll sod under any moisture condition. Loaded pallets can be spotted for later field removal and be clear of the next harvesting run. If direct truck loading is desired, a conveyor extension is available. The basic power train is a Ford LCG-2110 wheel tractor. The sod harvester can travel at speeds up to 17 MPH for quick transportation between plots. The efficiency of this all-mechanical operation has been proven on the Cal-Turf Farms, and can solve the problem of harvesting sod quickly and economically for all turf farmers. No more waiting for weather or labor.

For more information please contact:
THE JOHN NUNES MECHANICAL HARVESTING CO.
2518 Loquot Ave., Patterson, California, Phone (209) 892-6311

NU nes
SOD HARVESTER

the owner-operators of McGovern Sod Farms, Inc., were impressed with the laborsaving benefits of these irrigation systems. Not only can more water be applied in a given period of time, but also less manpower is needed to operate the systems during this same time period. With a standard system, crews of three men each are needed to work at pipe moving, tending generally two or three sod fields per crew. Under the new mechanical wheel-move system, any worker can move a sprinkler line (up to ¼ mile wide) in five minutes.

It is estimated that cost of the basic wheel-move components; i.e., power unit and wheel units, is approximately four times the cost of standard system components, i.e., pipe and sprinklers. However, it is felt that the advantages in laborsaving and timesaving will more than justify this extra cost. Furthermore, says Ed McGovern, "This system will enable us to continue growing top-quality turf in greater quantity."

Sod Producers Form National Group

Sod growers formally organized into a national group on July 11 at East Lansing, Mich. Considered a key move for the nation's growers, the formal action followed naming of a committee for the purpose earlier this year at the International Turfgrass Conference.

The new group organized as the American Sod Producers Association with a charter membership of 40 growers. Membership fees for the new organization will be $50.

Elected president of the group was Ben O. Warren, Warren's Turf Nursery, Palos Park, Ill. Vice-president is Robert Daymon, president of Emerald Valley Turf Nurseries, Howell, Mich. Elected treasurer was Louis DeLea, Louis DeLea & Sons, East Northport, Long Island, N.Y.; and secretary, Richard Horner, Horner Sod Farms, Wind Lake, Wis. Other members elected to the 7-man board besides the officers were: Tobias Grether, Cal-Turf, Inc., Camarillo, Calif.; J. E. Ousley, Sr., Ousley Sod Company, Pompano Beach, Fla.; and Wiley Miner, Princeton Turf Farms, Inc., Cranbury, N. J. Acting for the secretary and treasurer is George B. Hammond, Paint Valley Bluegrass Farm, 71 E. State St., Columbus, O. Hammond is coordinating requests for membership in the new organization and is answering queries directed to the group.

Final Applications For M.S.U. Turf Training

Michigan's 18-month-long technical training program in turfgrass management will begin next month. The program which starts September 21 includes 1 year of campus study and 6 months of industry employment.

Dr. James Beard, of the department of Crop Science, reports that 28 of a full complement of 35 students are now enrolled. Final registration date is September 18.

Ryan Equipment Company's new tractor-mounted sod roller is demonstrated by Jerry Ogren, of the company's St. Paul, Minn., office, to American Sod Association Field Day crowd.

American Sod Association Stages First Field Day

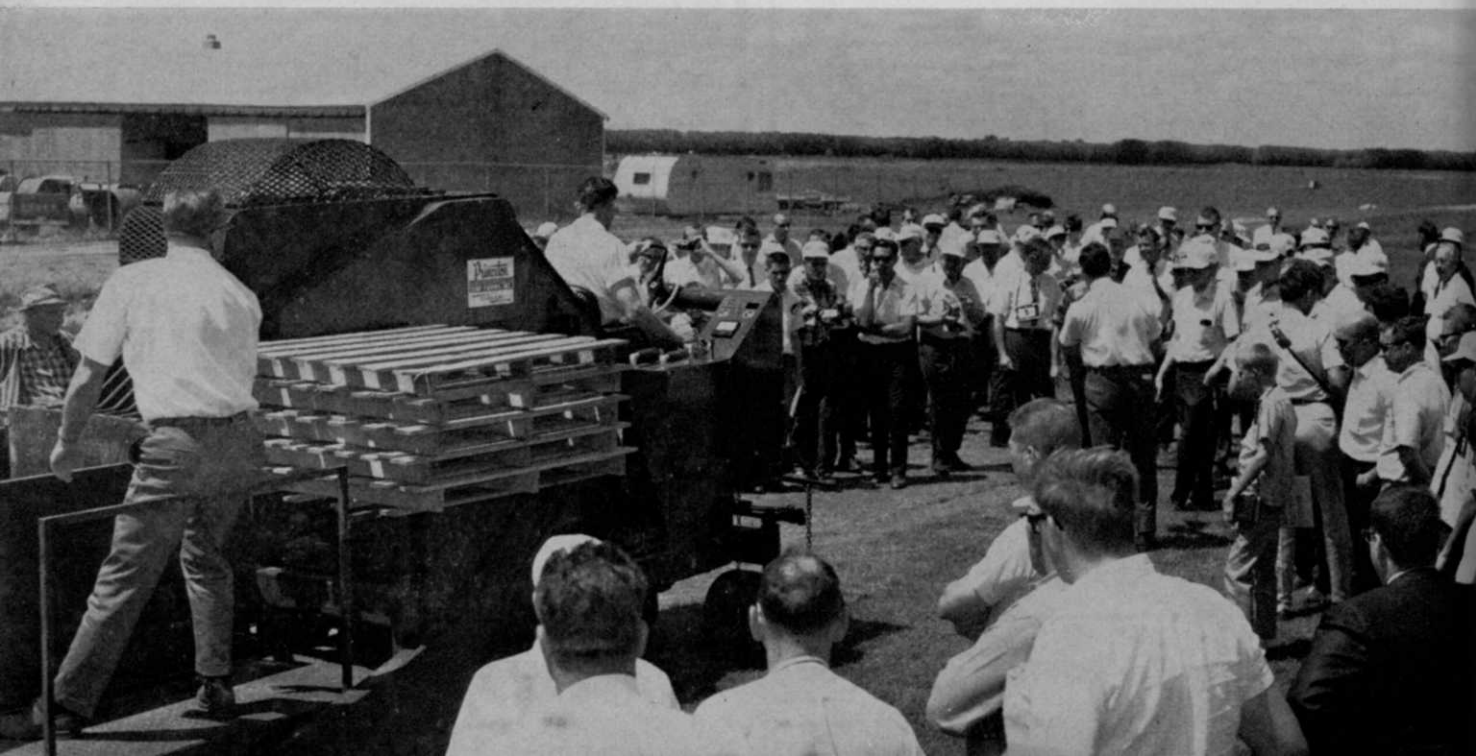
demonstration tour held in conjunction with Michigan State University Turfgrass Field Day

A NEW national group, the American Sod Producers Association, staged their first major event July 12 with a demonstration tour of sod production and equipment. The new group, officially organized the night of July 11, received a big assist from the staff of Michigan State University. Wayne County Agent Donald D. Juchartz with less than one month's notice contacted equipment manufacturers and sod producers, at the same time working closely with Dr. James B. Beard and Dr. Paul Rieke, staff members at M.S.U.

Drs. Beard and Rieke staged their annual Turfgrass Field Day at M.S.U. June 11. Despite rain in the surrounding area, their expected crowd of 500 to visit turf research amounted to 350. And some 200 stayed over or returned for the Sod Field Day.

Sod Field Day activities started with a morning session at Emerald Valley Turf Nurseries, Inc., which is located just off Interstate 96 in southwestern Livingston County, Mich. Bob Daymon, president of Emerald

Field Day crowd, numbering about 200, closes in on equipment for start of equipment demonstration which featured the Princeton sod harvester.



Valley, served as host to sod producers and equipment makers from throughout the country.

Daymon demonstrated equipment developed and built at the farm and toured the group over the 700-acre Merion bluegrass sod producing area. Visitors were shown the solid set irrigation system, aerial application, sod production and the office and shop at the farm. Following a lunch period, chartered busses were used by the group to move to the Halmick Sod Nursery on the outskirts of East Lansing, Mich. Here again, sod harvesting was featured. After touring the Halmick harvesting, equipment manufacturers who had their equipment on display at this location started the field demonstration.

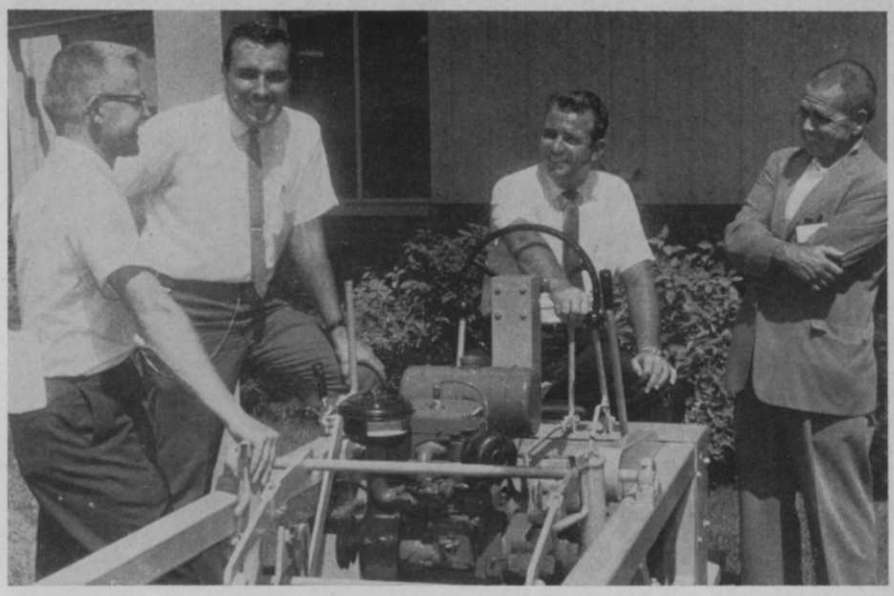
This field demonstration likely featured the greatest array of sod harvesting and handling equipment anywhere to date. Veterans in the industry could recall no prior event where as many different type units for cutting and rolling sod had been assembled for exhibit.

Prior to the American Sod Producers Field Day, Michigan State University on the previous day had sponsored a tour and field day of continuing research which is dedicated to helping the industry develop.

Dr. Beard, in reviewing Michigan's turf year, commented on extensive damage from Helminthosporium leafspot which was a month or more early in 1967. He said that reports of Fusarium blight activity are also increasing. The disease was first observed in Michigan last year. Concern is great because no effective fungicide is yet available.

Bentgrass plots showed that Cohansey and Toronto creeping bentgrasses continue to rank high in overall turf quality. Penncross seems to be the top seeded bentgrass in the Michigan trials.

In a study of growth reduction caused by hot weather, Harlan Stoin, of the M.S.U. research staff, related that tests show an overall increase in the soluble nitrogen content of grasses grown under high temperatures. There is a possibility, he re-

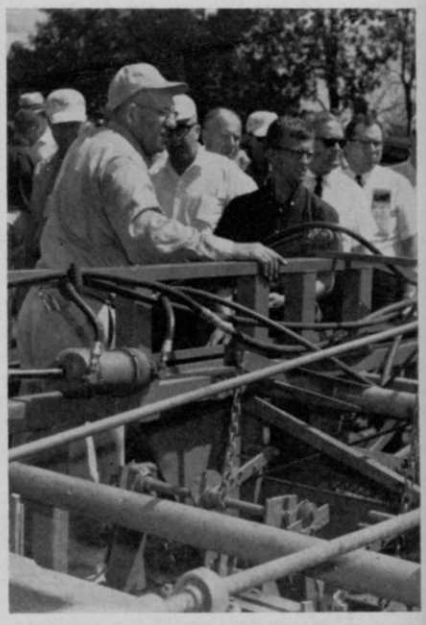


Daymon Sod Roller operation is explained by Bob Daymon, on driver's seat, during tour of Daymon's Emerald Valley sod farm, to Duane Girbach, Livingston County, Mich., county agent, left, and Donald Juchartz, Wayne County, Mich., county agent. To right is Ben O. Warren, Warren's Turf Nursery, Palos Park, Ill.

Nunes Sod Harvester is demonstrated by John Nunes of Cal-Turf Farms. Nunes reported unit will lift, roll, and palletize up to 1200 square yards per hour.

Hadfield Sod Roller, designed to fit on Ryan sod cutter, was among new equipment demonstrated. Hadfield reports unit operates strictly as 1-man operation and is particularly well adapted to smaller sod farm. Roller is manufactured by Hadfield at Oxford, Mich.

Halmick Sod Nursery sod being loaded on Halmick truck during demonstration. Brand name is that promoted for Merion bluegrass which is sold in Cleveland, O., area. Loader was built on Halmick farm.



Cliff Wetzel, sod producer at Ithaca, Mich., above, explains new sod harvester which he demonstrated for first time at sod association's field day. Harvester, left, is designed to handle three roll widths of sod at one time.

ported, of turfgrasses being affected by ammonium toxicity during hot weather.

Dr. Paul Rieke reported that a nitrogen and potassium balance increases winter hardiness of common Kentucky bluegrass. Maximum survival occurred when the ratio was 2 or 3 parts of nitrogen to 1 of potassium, even under high nitrogen levels.

Twenty-four varieties of red fescue are being evaluated according to a report by Extension Specialist Stuart Hildebrand. Pennlawn and Rainier, he said, are the top ranking commercially available creeping red fescues. Pennlawn is preferred because of its drought and cold weather tolerances.

Rogers Turf Sweeper was demonstrated by Clarke H. Staples, right. Unit has 5-foot sweeping width with 5-cubic yard hopper, also is equipped with thatcher-thinner attachment.

Giant-Trail Vac thatcher and pickup unit at right was field demonstrated. Unit here featured all-steel trailer 5′ x 3½′ x 4′. Wide 16-inch flotation wheels are used on rear with 10-inch pneumatic swivel casters in front. Hitches on all Giant Vac equipment vary and must be ordered for specific tractor unit. Besides customized Giant-Vac units below, company displayed blower and self-propelled equipment.

Developed at Emerald Valley Turf Nurseries, this 18-wheel truck-tractor pulls load of up to 1700 square yards of sod at a time, to and from fields. Speaker is for furnishing music to crew, preferably "fast" music, according to Bob Daymon, right.

Princeton Turf Farms' Sod Harvester is capable of handling up to 10,000 square feet of cut and palletized sod per hour, based on report during field day demonstration. Wiley Miner, president of Princeton Turf Farms, on hand for the field day, was instrumental in development of the machine which operates with 3 men and produces uniform pads of folded sod, stacked on pallets.

Prominent at Field Day and Michigan Turfgrass session at Michigan State University were: left to right, Donald Juchartz, Wayne County agent, Mich.; Dick Gorrell, Emerald Valley farm manager; Bob Daymon, Emerald Valley president; Dr. James B. Beard, Michigan State University; Duane Girbach, Livingston County agent, Mich.; K. T. Payne, M.S.U.; Dr. Bob Lucas, M.S.U. Extension specialist; and Dr. Paul Rieke, M.S.U.

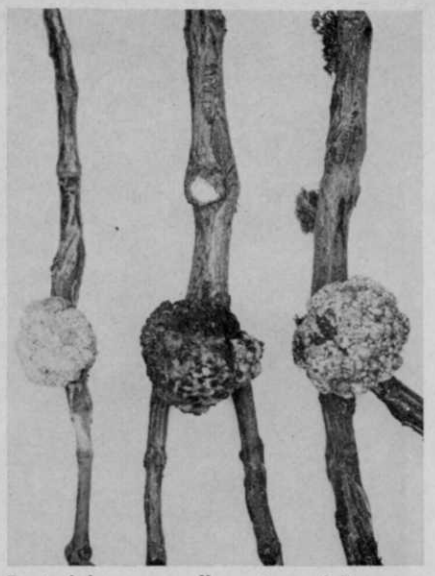
ing. Wounds should be treated with a good wound dressing. Pruning tools should be sterilized between cuts with alcohol, Chlorox, or formaldehyde, and pruning should be done only in dry weather, since spores of the fungus are readily transferred to healthy tissues under moist conditions.

Other canker diseases, such as *Pseudonectria* canker of boxwood and *Nectria* canker of Euonymus and other plants, occasionally occur, usually on weakened plants. Control measures for these and other canker diseases of evergreens are the same as for *Cytospora* canker. Applying organic mercury sprays in the spring to susceptible plants may provide some degree of protection against cankers.

White Pine Blister Rust Is Very Destructive

For many years the most destructive disease of white pine forests and plantings in the United States has been blister rust caused by the fungus *Cronartium ribicola.* Losses from this disease have been so severe that federal funds are regularly appropriated for its control. Fortunately, blister rust is not known to be of consequence in ornamental plantings because of quarantine regulations against plantings of susceptible currants and gooseberries which serve as alternate hosts for the fungus. In addition, blister rust is seldom found on white pines in the southern regions of the Midwest.

Where blister rust does occur, the fungus invades and kills needles on white pines and then moves into the bark of twigs and branches; there it produces swollen cankers which may girdle the stem. Spores produced in these cankers infect the leaves of susceptible currants and gooseberries on which spores are produced that cause further infection of pines. The best control recommendation in ornamental plantings is the removal of dead and dying branches at their point of attachment and the eradication of alternate hosts in the area. In addition, white pines should not be planted in frost pockets or low, swampy areas where conditions of high moisture occur.



Bacterial crown gall on stems of *Euonymus sarcoxie.*

A stem disease which has a wide host range and is familiar to almost everyone who works with woody ornamental plants is bacterial crown gall. The bacteria are soil-borne and enter plants through wounds. Small to large, woody galls form on roots or at the crown of infected plants. Several species of Euonymus such as *E. fortunei* and *E. japonicus* are extremely susceptible to crown gall and are seldom found without galls. Extensive gall formation can cause girdling and death of stems. Galls may become inactive after the first year or they may persist and increase in size each year until the stem is girdled and killed.

To control this disease, all infected material should be removed and burned. Pruning tools should be disinfected to prevent spread of the bacteria. Susceptible varieties should be handled with extreme care to prevent infection of healthy plants through wounds. Whenever possible, infested soil should be planted with species or varieties of ornamentals which are resistant to crown gall.

Shoot tips of pines, firs and spruces, which lack vigor or have been weakened by insects, diseases, adverse weather conditions, drought, or unfavorable planting sites may be attacked by the tip blight fungus, *Diplodia pinea.* Typical symptoms are wilting or drooping and eventual browning and dying of affected shoot tips. Diseased shoots should be pruned off and burned, and affected plants should be kept well watered and fertilized, since vigorous plants are less susceptible to attack. Some protection of susceptible plants can be provided by three spray applications at 2-week intervals with one of the organic mercury fungicides. The first spray should be applied when new growth first appears.

Twig blight, caused by the fungus *Phomopsis juniperovora,* attacks arborvitae and many juniper varieties as well as cypress and false-cypress. The disease fungus invades and kills the bark, and in time cankers form on diseased stems. As the cankers enlarge, affected stems die and needles turn brown. Damage caused by *Phomopsis* blight varies from year to year, but when optimum weather conditions for disease development prevail, as in 1966 in Illinois, the disease may reach epidemic proportions and can result in the loss of many valuable plants.

Since fruiting bodies containing spores of the fungus form on cankers during wet weather and provide a source of inoculum for further spread, all diseased twigs and branches should be removed and burned during dry periods. Pruning or shearing equipment should be disinfected periodically to prevent spread of the fungus to healthy tissues. When available, resistant varieties such as Hill's juniper, Keteleer red cedar, and spiny Greek juniper may be planted. Susceptible varieties may be protected against *Phomopsis* blight with five sprays of organic mercury fungicide at 10-day intervals beginning as soon as shoot growth starts in the spring.

Most stem diseases can be prevented or reduced by keeping plants healthy and vigorous. Sterilizing wounds and pruning tools and careful handling of plants to avoid wounding will help prevent the spread of the disease organisms to healthy tissues.

Diseases affecting the roots of