Asphalt layer, about 1/4 in. thick, is sprayed 2 ft. under the surface of sand soil by a specially designed shoe. Layering can reclaim millions of acres of sand soil, developers say.

layer,” Erickson explains, “but do not emerge through the other side, since ground under the layer is completely dry and there’s no reason for roots to keep on going. End result is a mat of roots which eventually begins to form right at the top of the layer. We haven’t had a chance to test the full effect, but we believe it helps to build up a supply of organic matter in the soil. Besides that, the layer should help reduce leaching of important plant nutrients, especially nitrogen,” Erickson adds.

Wichita Hosts N. Central Weed Conference, Dec. 5-7

More than 700 weedmen from 12 states and Canada are expected for the Dec. 5-7 meeting of the North Central Weed Control Conference at the Broadview Hotel in Wichita, Kans.

Reports on new herbicides, regulations on their use, equipment and application methods, industrial vegetation control, and all aspects of weed control are programmed for the fact-filled three-day meeting. Sections for extensioners, researchers, and specialists in other areas are also to be included. President of the conference is John D. Furrier, University of Nebraska, Lincoln; vice president and program chairman for the meeting is R. L. Warden, The Dow Chemical Co., Midland, Mich.

For further information, write G. Clare Buskirk, secretary-treasurer, North Central Weed Control Conference, 4100 X St., Lincoln, Nebr. 68503.

Book Review

Weeds of the World; Biology and Control

With detailed descriptions of the origin and classification of weeds, this volume will interest the weed controller who is concerned not only with the “how,” but also with the “why” of weed control.

It is not a reference the contract applicator will turn to often for specific herbicide recommendations (though some are included), but a readable account of the distribution and characteristics of weeds and the development of herbicides for their control. Ranging all over the world in text and diagram, the author describes the uses of weeds as well as their harmful aspects. Seed structure, growth, and reproduction of weeds, along with environmental factors are treated at length. Each chapter is concluded with an extensive bibliography detailing textual references.

Herbicides are classified and described, and their applications suggested. Data is given on the way in which herbicides act on plants and on the uses of various spray techniques and surfactants. One chapter is devoted to herbicide controls, and one to nonchemical methods of weed control. Appendices include tabular data on the properties and uses of herbicides, and brief descriptions of those recently introduced.

Readers wishing to expand their knowledge of weed biology and the various controls will benefit from this publication.

For the applicator in daily contest with weeds, whatever his problems, it may be some consolation to hear from the author that “In terms of the Darwinian concept of the struggle for existence, weeds as a class probably well represent the most successful plant forms that have evolved simultaneously with the destruction or disruption by man of the indigenous vegetation and its habitats.”

The savings on seed alone will often pay for your Brillion landscape seeder in just a few days of use. And that’s only the beginning.

A Brillion conditions the seedbed and seeds in one pass—without additional help, equipment, or operations. Its front rollers crush lumps, press down small stones, and pack the soil into a clod-free seedbed—exclusive brush pulverizer, 100% guaranteed. Its rear wheels gently firm the moist earth around the seeds for fast, complete germination and healthier growth.

So give yourself a Brillion landscape seeder—5’4”, 8’ and 10’ seeding widths. It pays for itself in a few days of use. Send coupon.

NEW — 3-point Category 2 pick-up now available on 8-ft. seeders.
"No Need to Burn Roadside Berms" Hay Tells '66 N.W. Spray-O-Rama in Portland

"Roadside spraying can be done without having many miles of roadways bordered with burned areas so displeasing to the public," Joseph Hay, director of industrial weed control for the Oregon State Highway Department, told opening-session participants at the 5th annual Pacific Northwest Spraymen's Spray-O-Rama, Sept. 23-24 at the Thunderbird Motel, Portland, Oreg.

Attacking indiscriminate spraying for roadside brush control, Hay pointed out that selection of spray materials is of prime importance to avoid "blighted" areas. Low soluble mixtures must be used in regions of high rainfall, or the spray is dissipated too quickly; conversely, lower rainfall regions call for highly soluble materials.

Hay, who is responsible for controlling some 7,000 miles of brush and weeds along Oregon roadways, also reminded spraymen that the area immediately adjoining many paved roads gets a concentrated amount of water from runoff. "It's here that an annual shot is not the answer, but rather maintenance sprays applied several times annually are needed."

Dr. Virgil Freed, head of the Department of Agricultural Chemistry at Oregon State University, Corvallis, and University extension chemist Dr. James Witt continued the session with an investigation of environmental pollution. Emphasizing that chemical residues are only one aspect of the problem, they added this should encourage spraymen to do everything in their power to be more and more versed in the complexities and uses of chemicals they deal with.

Close Look at Turf Problems

"It is not uncommon to find turfgrass areas similar to peat bogs," Dr. Norman Goetze, Oregon State University turf specialist, said in his discussion of turf problems common to the Northwest. Opening the Sept. 24 session, Dr. Goetze explained that, in any cool climate, thatch is an ever present problem and is most harmful where it ties up fertilizers in the thatch layer and does not allow nutrients to get down to the grass root zone. "We must get through thatch by piercing, or in some way removing it, to allow nutrients and chemicals we apply to get to the problem."

Referring to the common practice of cutting grasses at short heights, Dr. Goetze recalled that "the era of the broadleaf weed" came along with close mowing since these weeds are able to make more inroads in shorter grasses. Hot weather diseases, too, are encouraged by shorter heights. "Adding to our woes are the grassy weeds, which are extremely difficult to control because we are actually trying to control grass within grass," the turf specialist said.

On the brighter side, Dr. Goetze pointed out that "in the Portland area, soil, climate, and temperature are not particularly favorable to the development of crabgrass. Only one genuine sample from Portland has been mailed to Oregon State University in the past six years."
Licensing the Sprayer

Too often, a sprayman studies for his license exam, passes the test, and then proceeds on an inadequate continuing study program," Ray McNielan, agricultural extension agent from Multnomah County, Ore., complained. "In the future, we will see the need for more specialized, prescription-type spraying demanding a depth of knowledge that may be unknown to us at this time."

McNielan and Art Mehas, extension agent from King County, Wash., gave county agents' impressions of custom applicators they have known. "Many calls to the county agent's office indicate a breakdown in communication between the sprayman and his customer," Mehas remarked. "This situation can be prevented by a better organized person-to-person relationship between applicator and customer." As evidence of the problem, Mehas cited the extremely large turnover of customers between various spray companies.

Another problem area, seldom realized, was brought forth by McNielan, gave county agents' impressions of custom applicators they have known. "Many calls to the county agent's office indicate a breakdown in communication between the sprayman and his customer," Mehas remarked. "This situation can be prevented by a better organized person-to-person relationship between applicator and customer." As evidence of the problem, Mehas cited the extremely large turnover of customers between various spray companies.

Another problem area, seldom realized, was brought forth by Mehas when he noted that "many applicators are called on the carpet for supposed damage to plants which actually may have resulted from reactions of plant leaf surfaces to air pollutants. Being mindful of this is another way in which a sprayman can better his customer relations," the extension specialist concluded.

Spray Equipment Shown

An equipment display at the '66 Spray-O-Rama featured some 30 spray items, ranging from small pickup outfits to large (900 gal. to 1,000 gal.) rigs with several pumps. "This equipment serves best to illustrate the complexity of demand in our industry and a resultant need for versatility of application equipment and methods on the part of the 'pros' in the business," William Owen, '66 PNSA president, commented.

Spray gear was also discussed by a symposium session manned by Donald Mock, Shamrock Spray Service, Seattle, Wash.; Earl Parker, Jr., Chemical Spray Co., Dayton, Ore.; and L. F. "Lew" Sefton, Sefton Spray Service, Portland, Ore. These veteran spraymen agreed there is no optimum size for a given piece of equipment. It's a matter of the size and type of equipment an applicator chooses to use; one sprayman's large rig might be another's undoing, and vice versa.

"I have always found that if you can help a prospective customer, you can generally get the job to do the work for him," Ray Collier, Collier Spray Service, Portland, said in his talk on "How I Sell the Spray Business and You Can Too."

"If you show prospects what's wrong; show them their needs, and in doing so, demonstrate your own knowledge and ability, customers will come flocking to your door." This was Collier's advice to spraymen for using the "professional" approach to sell their services.

General interest speakers at the two-day meet included Del Snider, Taylor and Co., adver-
tising, Portland, who spoke on printing and direct mail advertising for the spray service; Mrs. Marguerite Norris Davis, Portland garden writer, who offered "A Woman's View of the Professional Spray Industry"; and Robert W. Averill, public relations director of Merritt-Davis Schools, Salem, Oreg., who addressed the banquet session on "Public Relations and the Pesticide Applicator."

**First N.W. Regional Meet**

Termed the first truly regional event sponsored by the Pacific Northwest Spraymen's Association, which encompasses Oregon, Washington, Idaho, and British Columbia, the conference was hosted by the Pesticide Sprayers Association of Portland, Oreg., a component member of PNSA.

Officers of the northwest group for the coming year were elected at a business session. Jack Daniels, Green-Up Spray Service, Seattle, Wash., takes over as president from William Owen, General Spray Service, Clackamas, Oreg. James Overton, Miller Products Co., Portland, Oreg., becomes vice president. Donald Mock, Shamrock Spray Service, Seattle, was chosen secretary-treasurer.

In other actions, the association's board of directors appointed committees to undertake studies in two areas. One committee will look into tank life residual values of various insecticide compounds as they are mixed in solution by a custom applicator. This is being done in an effort to find out how long a given mixture is "good" after it has been prepared in the tank and, for some unexpected reason, is not used immediately.

Second committee will chart herbicide compatibilities. The Board feels this represents an area of great need in the spray industry, and one that has not been sufficiently investigated.

Next year's Spray-O-Rama is being planned for the Seattle, Washington area.

**III. Turfmen Meet Dec. 1-2**

Dr. Noel Jackson, University of Rhode Island, and Dr. R. W. Miller, Ohio State University, are among guests slated to address the Seventh Illinois Turfgrass Conference at the University of Illinois, Urbana, Dec. 1-2. Jackson will cover turf diseases and their control, and Miller discusses turf culture.

For golf course interests, J. L. Holmes, USGA Greens Section, will recommend procedures for selecting golf course sites. In addition, University of Illinois staff will examine weed control, insects and their control, pesticide compatibilities, and recreational landscaping. Complete conference proceedings are to be available for those attending. For more information contact Dr. Fred Weinard, secretary-treasurer, Illinois Turfgrass Foundation, 100 Floriculture Building, University of Illinois, Urbana, Ill. 61801.

**Safe Herbicide Use**

**Theme of Jan. NEWCC**

"Safe Use of Herbicides" will be a major program theme when weed specialists meet at the Hotel Commodore, New York City, on Jan. 4-6, for the 21st annual Northeastern Weed Control Conference.

U. S. Representative Jamie L. Whitten is scheduled to leadoff the Wednesday, Jan. 4 general session with a discussion of "The Role of Land-Grant Colleges," Other speakers on this session will include Dr. F. R. Van Abeele, executive vice president of Elanco Products Co., Indianapolis, Ind., and Dr. Ernest R. Marshall, of Union Carbide Corp.'s International Division, New York. Both speakers will emphasize use of pesticides. Basic research papers will be presented Wednesday, and a complete schedule of sectional meetings is planned for Thursday and Friday.

Directing '66 conference activities is president Richard D. Ilnicki, Department of Soil and Crops, Rutgers University, New Brunswick, N.J. John Gallagher, Amchem Products, Inc., is vice president; and Arthur Bing, Cornell Ornamentals Research Laboratory, Farmingdale, N.Y., is NEWCC secretary-treasurer.

Additional program details will be announced here next month.
HELP WANTED

EXPANDING SOD FARM in Northeastern United States, covering a tri-state area, needs farm manager. Must be familiar with seeding, fertilizing, diseases, weeds, etc., plus material purchasing and handling of men. Turf school graduate desired, but not a must. Also need foreman with similar experience. Excellent wages, paid holidays and vacations. Excellent future for qualified men. Send resume to Box 22, Weeds Trees and Turf magazine.

FOR SALE

ONE 60-GPM HARDIE sprayer, 500-gallon, Wisconsin air-cooled motor; one 40-gpm Iron Age sprayer, 500-gallon tank, LeRoi Industrial motor. One 30-gpm celestrial sprayer, 500-gallon tank, Weeds Trees and Turf magazine.

Jari's Heavy-Duty Rotary Mower Designed for Safety

“Jobmaster VI,” a heavy-duty self-propelled, rotary mower recently introduced by the Jari Corp., Minneapolis, Minn., is designed to close the “hazard gap,” the maker says. To reduce clearance between the rear of the mower housing and the ground, “the hazard gap,” Jari has installed a safety flange that hangs between the operator and blade. This flange, which is mounted on wheel axles, cuts ground clearance to ½ in. and acts as a shield for the operator.

With two forward speeds, reverse, and free-wheeling, Jobmaster VI is powered by a 6-hp. engine with recoil starter, and cuts a 25-in. swath. The four-wheeled mower can safely accommodate moderate to large-size mowing areas, and is adaptable to the finest turf as well as to man-size brush or weeds, Jari declares.

Available in walk-behind or riding models, Jobmaster VI weighs 185 lbs. and is constructed of 10- to 12-gauge steel weldments. The tempered single cutter blade has a 4-in. long sharpened edge with ½-in. high turbulence surfaces and is housed in a 5-in. deep elliptical grass chamber. Now being marketed by Jari’s distributors and dealers, Jobmaster VI will be described in detail for those writing Jari Corp., 2950 Pillsbury Ave. South, Minneapolis, Minn. 55408.

Cyclone Offers New Pull-Type Spreader

The Cyclone Seeder Co., Inc., Urbana, Ill., now offers a broadcast lawn spreader designed to be pulled behind riding mowers and small lawn and garden tractors. Model B-P spreader is reported to be suitable for seeding, spreading fertilizers, granular pesticides, soil conditioners, ice melters, and similar materials.

A smooth swath with tapered edges, without “hot spots,” streaks, or misses is obtained from the spreader, Cyclone says. Pelleted materials are spread in swaths up to 8 ft. wide. Model B-P has a drawbar hitch that adapts to all pulling equipment and a conveniently located positive off/on control. A Cyclone Micro Dial rate gauge adjusts seed and broadcast rates. Other construction features include nylon bearings, nylon gear box, precision gears, galvanized steel hopper, stainless steel rotary agitator, and feed guides.

Readers wishing to know more about the new Cyclone lawn spreader can contact The Cyclone Seeder Co., Inc., Urbana, Ill.
Insect Report

WTT's compilation of insect problems occurring in turfgrasses, trees, and ornamentals throughout the country.

Turf Insects

**FALL ARMYWORM**

*(Spodoptera frugiperda)*

**Texas:** Building up in eastern part of state. Moderate to heavy on lawns in Kaufman, Henderson, and Gillespie counties.

**GREEN JUNE BEETLE**

*(Cotinis nitida)*

**Oklahoma:** Larvae heavy and damaging turf in areas of Tulsa County.

**A BILLBUG**

*(Sphenophorus venatus vestitus)*

**Kansos:** Reports of lawns in Johnson County heavily damaged.

**EUROPEAN CRANE FLY**

*(Tipula paludosa Meigen)*

**Washington:** Specimen reported from Blaine. First record of this serious pest of sod grasses in U.S.

**BERMUDAGRASS MITE**

*(Aceria neocynodonis)*

**Hawaii:** Reported for first time. All stages heavy on bermudagrass in Lihue, Kauai, and on University of Hawaii campus in Honolulu, Oahu.

**SOD WEBWORMS**

*(Crambus spp.)*

**Maryland:** Isolated heavy damage reported at Bowie, Prince Georges County. Moths heavy in New Carrolton. *Neospora.* Heavily damaging many lawns in Lincoln, Lancaster County.

**ELM LEAF BEETLE**

*(Pyrhula luteola)*

**New Mexico:** Serious on elms in Albuquerque, Bernalillo County. Most common on Chinese elm. **Texas:** Reported on Chinese elms in Upton County. **Utah:** Defoliated about 25% of elms at Kanab, Kane County.

**SMALLER EUROPEAN ELM BARK BEETLE**

*(Scolytus multistriatus)*

**California:** Medium on Chinese elms in Escondido, San Diego County, and on evergreen elms in Riverside, Riverside County. **Michigan:** Causing twig drop in Lower Peninsula. **Nevada:** Found in Elko County elm for new record. **Oregon:** Infesting Chinese elm in Hermiston, Umatilla County; another new county record.

**AN ENGRAVER BEETLE**

*(Corythucha spp.)*

**North Carolina:** Dominant species in worst epidemic in 10 years, affecting most of Piedmont and some adjacent mountain counties. Infestations vary from few species to severe. Young pine plantations heavily hit.

**LACE BUGS**

*(Corythucha spp.)*

**Maryland:** Sycamore lace bug (C. ciliata) severe on numerous sycamores in Prince Georges and Queen Anne's counties. **Pennsylvania:** C. ciliata heavy on sycamores in Wyoming County.

**CATALPA SPHINX**

*(Ceratomia catalpae)*

**Ohio:** Severe defoliation of catalpa trees in Franklin and Delaware counties, and widespread in several north-central counties.

**OAK SKELETONIZER**

*(Bucculatrix siniesiella)*

**Delaware:** Feeding on oak in New Castle County. **Maryland:** Heavy damage to white oak foliage in Harford County.

**FALL WEBWORM**

*(Hyphantria cunea)*

**Colorado:** Numerous in poplar, cottonwood, and other shade trees in area around Grand Junction. **Illinois:** Nests light to moderate in western section. **Indiana:** Heavy in Washington, Warrick, and Gibson counties. **Michigan:** Trees widely infested in St. Joseph and Cass counties, especially wild cherry, hickory, and walnut. **Mississippi:** Webs and larval feeding in- jury noted. **Missouri:** Substantial on several shade tree species in Cape Girardeau, St. Francois, and Mississippi counties. **New Mexico:** Medium on shade trees in Espanola, Rio Arriba County. **Ohio:** Moderate to heavy in central and eastern areas. **Virginia:** Infesting shade trees in Gloucester County.

Insects of Ornamentals

**BAGWORM**

*(Thyridopteryx ephemeraeforinis)*

**Delaware:** Widely distributed and causing more injury than in recent years. Many deciduous trees as well as evergreens infested. **Maryland:** Severe infestation, in pupal stage, on arborvitae at Kent Island.

**BOXELDER BUG**

*(Leptocoris trivittatus)*

**Texas:** Moderate to heavy on many ornamental plants and shade trees in southern part of Hood County.

**SPITTLEBUGS**

*(Apeltes spp.)*

**South Carolina:** Severely damaging ornamentals in Richland County.

**SPRUCE GALL APHIDS**

*(Adelges spp.)*

**Rhode Island:** A. cooleyi more evident than in recent years.

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Compiled from information forwarded by the U.S. Department of Agriculture, university staffs, and WTT readers. Turf and tree specialists are asked to send reports of insect problems noted in their areas to: Insect Reports, WEEDS TREES AND TURF, 1900 Euclid Ave., Cleveland, Ohio 44115.

Trimmings

**NEW FACIES.** Two new appointments have come to our attention this week. James V. Parchetti will join the agronomy department at the University of Maryland. Jim is a Purdue graduate, who has completed requirements for his Ph. D. in weed control. A member of the Weed Society of America, he'll do research and extend management work in weed control at Maryland. The American Association of Nurserymen has also increased its staff. Phillip E. Bacon becomes an administrative assistant for the trade association. He'll have general management duties and assist with the Horticultural Research Institute. Our congratulations to both appointees.

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**Read the What?** No offense intended, but we think the University of Maryland extension service forgot to read something when it announced that "Larry the Label" is now available on bookmakers. Larry is a reminder, their release says, "to always read the directions before using any kind of pesticide." Fortunately, the marker itself urges: "Use pesticides safely, Read the label." We're glad of that; "Larry the Directions" just doesn't have the Damon Runyon-esque touch of "Larry the Label."

**Birds Bomb Plans.** For two years, the '66 meeting of the International Crop Improvement Association had been planned for Baltimore. Then, as time was drawing unwieldily closer, the Baltimore birds won a baseball championship and crop scientists got the bird when the host hotel cut their allotment of rooms for the meeting. Reluctantly bidding bye to baseball town, the group switched its meeting to Rochester, N.Y., at the last moment. There, away from world series hustle, delegates discussed, among other items, Kentucky bluegrasses and the New Jersey sod certification program.
Want to hear from your customers less often? Use Geigy herbicides.

You'll hear from your customers less often in this case for only one reason. And that's because they'll be getting positive long-term weed control that Geigy industrial herbicides deliver with just a single application.

This, of course, will help you to eliminate time-consuming and unprofitable call-backs. So you'll be free to take on new customers or expand the maintenance services you offer.

Each Geigy industrial herbicide has special features to solve specific problems. As a group, they can handle just about any annual and perennial weed problem customers can toss your way.

So it will definitely pay you to find out more about these Geigy herbicides: Atrazine 80W wettable powder, Simazine 80W wettable powder, Pramitol™ 25E emulsifiable solution, Pramitol™ 5P pellets, and Atratol™ 8P pellets.

Remember, each one has its place in a fully effective weed control program. So you might need them all in order to solve most of your customers' weed problems.

Write us today to find out more about Geigy industrial herbicides. Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation, Ardsley, New York 10502.