

# Consider Thin Cut Sod

Depth at which sod is cut is an important factor affecting the productive life of a sod field, the rate of establishment, the ease of handling, transporting and laying, and the economics of sod production, says John R. Hall, turf specialist, University of Maryland. Proper cutting thickness will vary depending on species, soil texture, sod density, and the amount of root and rhizome development.

No sod farm has an infinite topsoil depth, he says. Therefore, the length of life of every sod farm is a function of the number of harvests and the depth of those harvests. Simple mathematics indicate that cutting sod at a three-fourths inch cutting depth instead of a one and one-half inch cutting depth almost doubles the life of a sod farm.

Research indicates that thin-cut sods have better rooting ability than thick-cut sods. Merion Kentucky Bluegrass sod cut at a one-half inch depth gives increased rates of root appearance, increased root density, and greater rooting depth compared with one inch and one and one-half inch cutting depths, the specialist points out. For tall-fescue-Kentucky bluegrass mixtures, three-fourth inch sod cutting depths are more favorable than one and one-fourth inch cutting depths.

The increased weight created by the excessive cutting depth increases the frequency of harvesting machine breakdowns. Some of the sod handling machines produced today are not being built to work with thick sod day after day. Sod producers can generally rely on repair costs increasing linearly with the thickness of sod, Hall says.

Thick sod increases the probability of overload fines for the transporters. The weight of one and one-fourth inch sod is about 175 tons per acre, while three-fourth inch sod weighs only 100 tons per acre. The heavier sod means that fewer pallets constitute a load, and often what would normally be considered a load turns into an overload. Overload fines in the State of Maryland are currently assessed at the rate of two cents a pound for the first 5,000 pounds over six cents a pound for any amount greater than 5,000. The cost can be considerable.

The increased work caused by the extra weight has been protested by sod workers. They don't enjoy lifting an extra 75 tons of weight to cover an acre of ground.

Hall says the economic soundness of giving away topsoil is questionable. Selling one and one-fourth inch sod for the same price as one-half inch sod is simply giving the buyer about 108 cubic yards of topsoil. The current price of sterilized topsoil delivered less than 20 miles is about \$4.50 per cubic yard. This means the purchaser of one and one-fourth inch sod is getting about \$485 worth of topsoil for every acre of sod he buys.

Thin-cut sod is generally best in every situation. However, age, density, and species of the sod, soil texture, moisture, and site preparation are going to have an effect on the final decision of cutting depth. Where site preparation is poor, fertility management programs are deficient, and the laid sod is not going to get ample watering, it is possible that thicker sod might be beneficial. Thick sod can never correct poor management practices, however, in most cases thin-cut sod is superior to thick-cut sod, concludes Hall.

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For More Details Circle (103) on Reply Card

## Brouwer Turf of Canada Introduces Sod Harvester

A new and re-designed sod harvester is being marketed this year by Brouwer Turf Equipment Ltd., Keswick, Ontario, Canada.

The unit uses two to three men for harvesting and the manufacturer reports that it replaces four to seven men in the operation.

Known as the Brouwer Sod Harvester, it cuts rolls and loads on pallets up to 1300 square yards of

sod per hour. The maker states that with light sod, one man can load the pallets. Heavier sod requires two men. The pallet being loaded is carried on the 3 point hitch lift of the tractor.

The conveyor is driven by PTO of the tractor and V-belts. The cutting blade is powered by a hydraulic oil motor. Widths of cut are available in 16, 18, and 24-inch.

The unit was exhibited at the recent Ohio Turfgrass Foundation show at Cleveland. (For more information, circle reader card No. 720).



Brouwer Sod Harvester

## Mutoza Elected To Calif. Landscape Board

A vice president of the largest producer of "instant grass" or sod in the State of California has been elected to the Board of directors of the California Landscape Contractors Association.

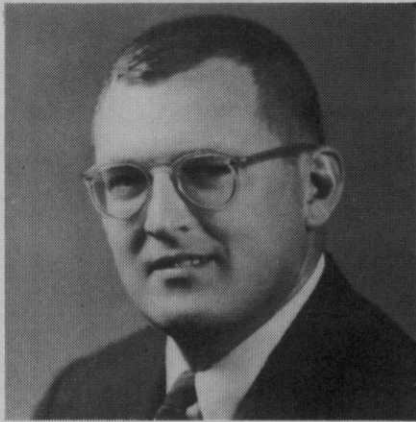
Edward Mutoza of Nunes Turfgrass Nurseries, Inc., Patterson, becomes the first associate member of the 600 member organization made up of landscape contractors and their suppliers. Mutoza will represent the latter group on the board and will start serving immediately.

Mutoza was honored by the state-wide group in 1969 as the CLCA Man of the Year. His appointment represents the first associate member to be named to the executive board in the association's 21 year history.

California Landscape Contractors Association, the largest such group in the United States, is a non-profit trade organization dedicated to the beautification and enrichment of people's lives throughout landscaping.

Nunes Turfgrass Nurseries grows over 600 acres of sod out of 1200 now being harvested in the state.

American Sod Producers  
Assn. Conference & Field Day  
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February 22-24



Dr. Jack C. Harper, professor of agronomy, Penn State University.



## CALLING ALL SOD GROWERS!

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For More Details Circle (151) on Reply Card

## Golf Course Builders To Meet In Cincinnati

The executive director of the National Golf Foundation, a Penn State University agronomist, a panel of golf course contractors and an architect will be the feature of the first annual meeting of the Golf Builders of America, February 16, in Cincinnati.

The Golf Course Builders of America, now in their second year of growth, will hold a dinner and program during the national convention and trade show of the Golf Course Superintendents Association of America. The evening of February 16 is an open night at the Superintendents convention.

Following dinner at Stouffer's Inn, Don A. Rossi, executive director of the National Golf Foundation, Chicago, will be the opening speaker. He will be followed by John C. Harper, an extension agronomist at Penn State. Professor Harper will speak on "Do's and Don'ts of Golf Course Construction".

A trio of two golf course contractors, Henry L. Nielsen Jr., of Warwick, N.Y. and Lee A. Bilberry of Houston, Texas, and a golf course architect of Port Washington, N.Y., Frank Duane, will discuss golf course building and respond to questions from the audience. David Canavan of Culpeper, Va., past president of GCBA, will moderate the panel.

Robert Vincent Jr., of Benton, Pa., president of the Golf Course Builders of America, will chair the dinner and program.

## Plant Food Carnival Slated For March

A new concept in merchandising promotion will be introduced when the "Bill Hofmann Wholesale Nurseries, Inc. of Hollywood, Fla., holds an all-day open house Plant Carnival, March 18.

Manager Tommie Hofmann, who concentrates on specimen, container grown indoor landscape plants, marketed worldwide, is inviting friends and customers as guests for the nursery's First Annual Plant Carnival from 8 to 8, Saturday the 18.

The day includes visiting, viewing more than 10,000 sun-dappled plants, plus food and refreshments for guests. The event will also include the regular monthly meeting of the Broward, FNGA, Chapter, beginning at 8 p.m.

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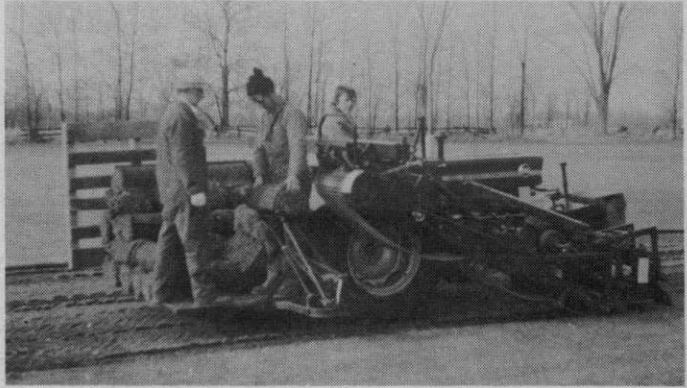
## BROUWER SOD HARVESTER

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### SULFUR (from page 48)

6. significant reduction in diseases

It is important to point out that, in many instances, a potash fertilizer is priced mainly on its potassium content. When due credit is given for the sulfur content of a material such as potassium sulfate, the apparent price discrepancy in comparison to potassium chloride disappears. If sulfur had to be pur-

chased and applied separately as a supplement to potassium chloride, for example, it would be less expensive to purchase and apply potassium sulfate in the first place.

Well-documented studies by Goss, Gould and others in the Pacific Northwest reveal some very convincing reasons for applying sulfur along with nitrogen, phosphorus and potassium. Adequate sulfur reduced *Fusarium* patch in turfgrass by 86

percent. The rates varied between 50 and 150 pounds of sulfur per acre. Fifty pounds of sulfur can be supplied with 300 pounds of potassium sulfate. This would also yield about 150 pounds of potassium oxide which usually is sufficient to balance 7 to 8 pounds of nitrogen to 1,000 sq. ft.

This property of controlling disease really should cause no great (continued on page 60)

### ROOF RANGER Self-Propelled ... Built Rugged for Less Down-time

Tilt blade for heavy cutting, flatten for fine mowing. Equip with single caster for in-tight trimming; stationary front wheels for miles of mowing. (Optional riding cart). 24" cut, 5 h.p., or 26" cut, 7 h.p. Oil bath gear drive, blade clutch, cutting height adjustment, grass catcher extend usefulness and productivity. Roof Ranger self-propelled is the authority on hills, peaks, slopes, valleys.



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Sturdy Roof "400" can cut dense 18" growth; can mow lawns smooth. Fine balance, easy rolling rubber-tired steel spoke wheels, adjustable handles, easy cutting height adjustment. The ideal mower for all heavy-duty commercial-type mowing and trimming. Blade clutch for easier starting the 5 h.p. engine, choice of stationary or swivel caster front end, choice of 21" or 24" cut. Belt driven blade protects engine, simplifies maintenance.



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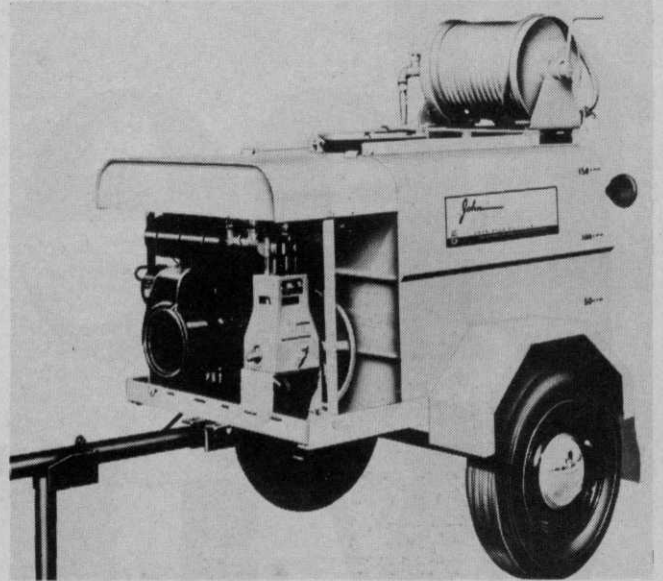
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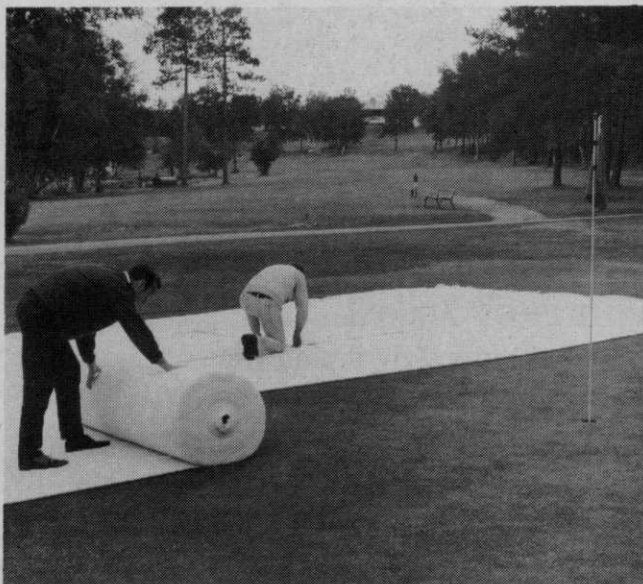
**FRONT RUNNER GROUNDS MAINTENANCE TRACTOR:** Hesston Corporation, Industrial Division, Hesston, Kans.

Front wheel hydrostatic drive and articulated centering steering are two of many features of this new 18 hp, Model 180 Front Runner. A two-cylinder engine powers the tractor and drives the 60-inch front mounted mower. Turning radius is a short 27½ inches (inside) to permit mowing around small trees in one pass. Model 180 is equipped with a mechanical clutch, key starter, pedal-operated header lift, sealed and tapered bearing rear wheel hubs, and a three-bushel rear box with tailgate. For more details, circle (701) on the reply card.



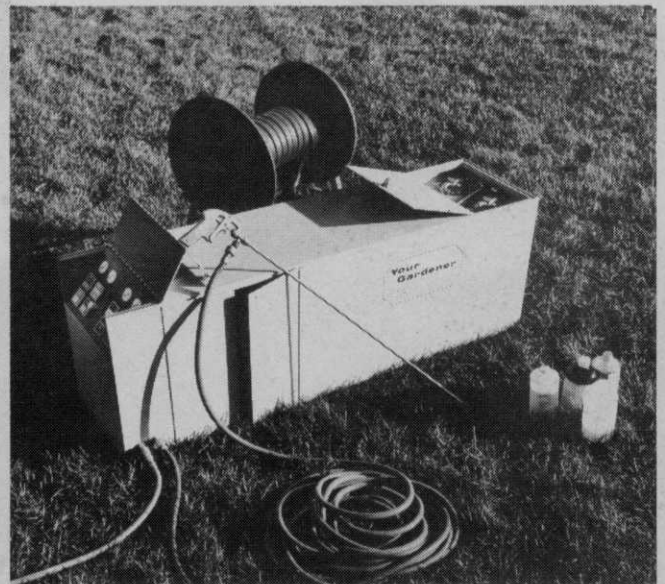
**SELF-CONTAINED SPRAYER:** John Bean Division, FMC Corporation, Lansing, Mich.

Ready-to-go high pressure sprayer complete with tail lights, turn indicators and mounted on a heavy duty axle is available from John Bean. Has 150 or 200 gallon steel, rust resistant lined tank, pump and engine compartment and cab top. Features a Royalette 10 gpm at 500 psi high pressure pump, 100 foot hose reel for ½-inch high pressure hose and adjustable stream Spraymiser hand gun. Can also be equipped with folding boom for turf care. Safety ball hitch and 20-inch ground clearance provide easy towing to any location. For more details, circle (702) on the reply card.



**TURF PROTECTION BLANKET:** Conwed Corporation, St. Paul, Minn.

Protect putting greens and tees from low temperature kill with a blanket that weighs only 18 pounds per 200 by 6 foot roll. It may be used on both cool and warm season turf. Recommended for areas with minimal snow accumulation, low amounts of precipitation, severe drying winds and wide temperature extremes. The blanket traps and retains soil moisture, reduces washing of snow mold fungicides, permits sufficient light penetration for rapid early spring green up, and leaves no debris upon removal. It can be used for 2-3 seasons depending on climatic conditions, installation and removal procedures. For more details, circle (703) on the reply card.



**YOUR GARDENER-MARK II,** The Guildsmen Company, Harrisburg, Pa.

Here is a self-contained, pneumatic-hydraulic unit that is compact and mobile. A custom applicator can use this new concept in spraying equipment for proportioning herbicides, insecticides, fungicides and fertilizers simultaneously to turfgrass and lawns. For more details, circle (704) on the reply card.

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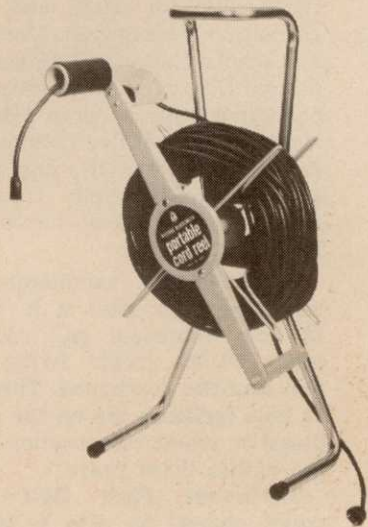
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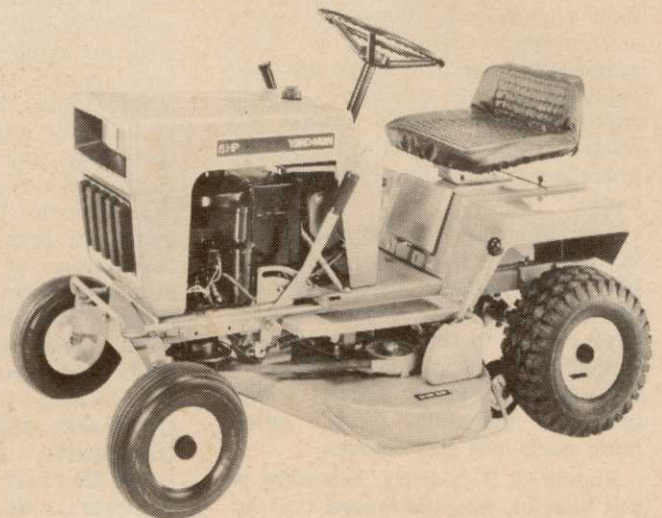






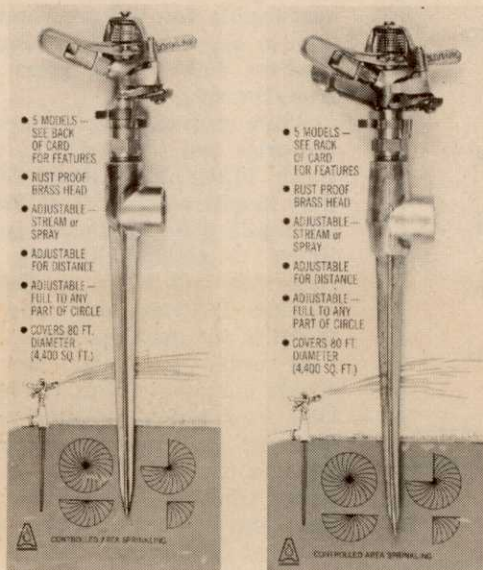
**PORTABLE ELECTRIC CORD REEL:** Village Blacksmith, Div. of McGraw-Edison Co., Watertown, Wisc.

Eliminate electric cord tangling, knotting and twisting with this portable cord reel. It holds 150 feet or more of electric cord and can be wound or unwound without unplugging. Made of heavy gauge steel and special cast aluminum alloy, the unit can stand alone or can be attached to wall or siding with two brackets mounted on the back. Also features a convenient handle for easy pick-up. Cord pulls through handle. For more details, circle (705) on the reply card.



**ELECTRIC START-AUTOMATIC TRANSMISSION TRACTOR:** Yard-Man, Jackson, Mich.

Model 3480 is the latest introduction in a growing line of Lawnbird garden tractors from Yard-Man. It features an 8 hp engine, electric start, 32-inch cutting width, "on-the-go" cutting height adjustment from 1-inch to 3¼-inch, and headlights. The tractor line stresses the modern look along with a variety of important safety and convenience features. Safety transmission interlocks which prevent the engine from starting except when in neutral are standard. Optional accessories are available for this model. For more details, circle (706) on the reply card.



**IMPULSE SPRINKLER & STAKE:** Aqua-Trol Corporation, Copiague, N.Y.

Made of solid bronze and brass on an aluminum stake, these impulse sprinklers cover a watering area of 80 feet diameter. They are adjustable to full or part of a circle and come complete with diffuser screw to adjust from stream to spray. The 9½ inch stake prevents sprinkler from working loose when in operation. The model on the right comes with a deflector shield to control the water trajectory. For more details, circle (707) on the reply card.



**SCOOP-HOOP:** Gordon A. MacEachern Ltd., Toronto, Ontario

Scoop-Hoop speeds the clearance of litter and waste from all areas. Combines a strong tubular aluminum frame with a rugged, lightweight collection bag made of woven, polyolefin fabric. Weighs less than a pound. Overall size is about 30 inches high and 16 inches wide. Reinforced aluminum lip is angled to speed litter into the collection bag. It's nicknamed the "pollution fighter." For more details, circle (708) on the reply card.



**OUTLOOK** (from page 18)

than elaborate facilities is favored and projects furnishing a broad range of outdoor recreation uses and experiences are preferred. Funds apportioned to the states under this program finance 50% of total allowable project costs on a matching basis.

This program became operational in 1965. Since its inception through 1971, \$503 million were approved for 50% matching grants. Grants have helped to finance such diverse projects as multipurpose metropolitan parks, picnic areas, campgrounds, bicycling paths, swimming pools and golf courses.

Rogers C. B. Morton, Secretary of the Interior, has announced the distribution of \$255 million appropriated by Congress for fiscal year 1972 grants to states and their cities and counties under the BOR Land and Water Conservation Fund program.

This year's appropriation provides the largest amount of money for grants to states in the history of the program. "With apportionment of these funds, we will have provided

more than three quarters of a billion dollars in Federal funds," Secretary Morton said. "When mated with an equal amount of state and local money, this means an investment of over \$1.5 billion for preservation of needed outdoor recreation areas and for development of facilities to service public needs."

In order to speed up action on requests for grants, regional offices of the Bureau of Outdoor Recreation may now review and approve grant-in-aid projects involving public parks, open space and recreation lands and waters. Regional offices are located in Philadelphia, Pa. (Northeast region); Atlanta, Ga. (Southeast); Ann Arbor, Mich. (Lake Central); Denver, Colo. (Mid-Continent); Seattle, Wash. (Pacific Northwest) and San Francisco, Calif. (Pacific Southwest).

During the decade ending in 1970, municipal golf courses increased in the nation by almost 48%. The Maryland National Capital Park and Planning Commission's municipal golf development program illustrates what is happening in many communities.

The Commission, which is largely responsible for parks and outdoor recreation facilities for Montgomery and Prince Georges Counties (Washington, D.C. suburbs), operated only one 9 hole golf course in 1960. Today it owns and operates 72 holes of golf (six courses—two 18's and four 9's) and plans to begin construction soon of a third 9 at its Northwest Park Golf Course.

Frank Rubini, commission director, says, "our goal is to have an 18 hole municipal golf course for every 30,000 people living in the two counties concerned. Three more 18 hole facilities are on the drawing board on which construction will begin within three years."

Northwest Park Golf Course, which opened for play in 1964, had 55,540 rounds played on its 18 hole layout during the fiscal year ending June 30, 1971. Needwood Golf Course, also 18 holes (opened in September 1969), had 55,763 rounds during the same period.

The Commission's four 9 hole golf course operations — Sligo, Paint Branch, Oxon Run and Hensen Creek —each served from 65,000 to 74,000 customers during the same fiscal year.

Sixty-two powered golf cars are maintained at each of the 18 hole operations. Golf professionals are responsible for the cars and either own or lease them. The Commission receives 10% of the gross income from the cars.

While municipal golf courses still comprise less than 15% of the nation's 10,400-plus golfing facilities, they handle about 45% of the country's golf play. Municipal golf continues to expand its role in the American golf scene as alert communities provide more and better facilities for their residents.

In order to better serve golf course planning groups, the National Golf Foundation recently reorganized its golf facility development services. Buddie Johnson of Livermore, Calif., is responsible for 7 west coast region states; George Kerr, of Richardson, Texas, has 10 west central area states; Larry Smith of the Chicago headquarters office is responsible for 7 north central states; Fred Stewart, Nashville, Tenn., serves 7 south central states; Harry Eckhoff will continue to cover the 17 states on the eastern seaboard from his Arlington, Va., office.

Facility development consultants are available to any golf course planning group for assistance with the development of needed golf courses in their respective areas.



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# insect report



## TURF INSECTS FIRE ANT

(*Solenopsis germinata*)

TEXAS: Numerous infestations in Brazos, Robertson, Wilson, and Bee Counties.

## CHINCH BUG

(*Blissus leucopterus leucopterus*)

ILLINOIS: Surveys indicate populations about 3 times heavier than 1970; still below economic levels.

## PLANTHOPPER

(*Delphacodes propinqua*)

LOUISIANA: Heavy, adults 5,000 per 100 sweeps, on common and coastal Bermudagrass in central and northern areas.

## SNAIL

(*Rumina vecollata*)

ALABAMA: Abundant in local area at Montgomery, Montgomery County, October 25, 1971. This is a new state record. Occurs in Texas and Mexico.

## INSECTS OF ORNAMENTALS

### CHINESE ROSE BEETLE

(*Adoretus sinicus*)

OREGON: Single live adult intercepted at Salem, Marion County; in suitcase. Apparently trapped in luggage in Hawaii.

### PIERID MOTH

(*Phoebis sennae*)

ALABAMA: Larvae collected at Faunsdale, Marengo County, October 11, 1971. This is a new State record.

### PALM LEAF SKELETONIZER

(*Homaledra sabalella*)

ALABAMA: Larvae ranged 2-10 per leaf skeletonizing palms on Dauphin Island in Mobile County April 16, 1971. This is a new state record.

## TREE INSECTS

### APHID

(*Cinara pinivora*)

MARYLAND: Specimens collected from *Pinus taeda* at Beltsville, Prince Georges County, on June 6, 1971. Determined by A. N. Tissat. This is a new state record.

### SMALLER EUROPEAN ELM BARK BEETLE

(*Scolytus multistriatus*)

GEORGIA: Symptoms of Dutch elm disease noted June 10 in Clarke County, confirmed. Apparently widespread throughout county.

### SOUTHERN PINE BEETLE

(*Dendroctonus frontalis*)

MISSISSIPPI: Indications of a buildup indicated in pine forests in southern areas. Populations increasing in size and number.

### OLETHREUTID MOTH

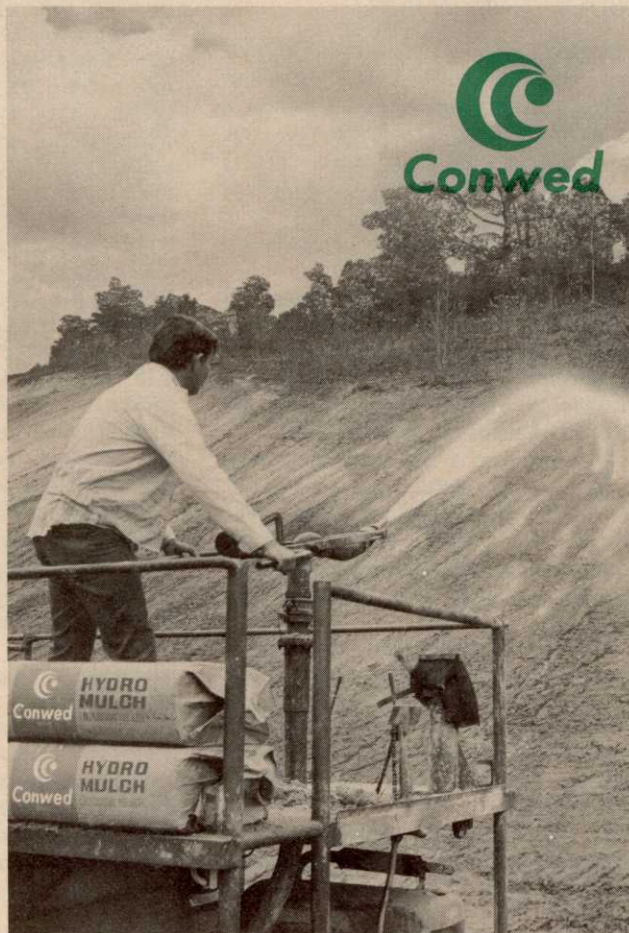
(*Paralobesia liriiodendrana*)

ALABAMA: Larvae taken from tulip poplar trees at Shorter, Macon County, October 18, 1971. This is a new state record.

### OLETHREUTID MOTH

(*Rhyacionia bushnelli*)

CALIFORNIA: Pupae occurring in tips of Monterey pine (*pinus radiata*) in nursery stock in Wasco, Kern County. This is a new county record. Pupae 40 and one larva taken from branch terminals from 2 Monterey pine at El Cajon, San Diego County. Damage severe and terminals brown. Unspecified hymenopterous parasites taken from pupal cases.



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**SULFUR** (from page 54)

surprise because we have known this about sulfur for a long time. The surprising thing is that so many of us have forgotten it or have not put the knowledge to use.

Another turfgrass disease that has been checked and controlled to a large degree with sulfur is *Ophiobolus* patch.

When Merion Kentucky bluegrass is short of sulfur, it is much more susceptible to powdery mildew.

Dollarspot fungus in warm-season grasses in Florida was reduced by the use of sulfur in fertilizers.

This may be a bit hard for many to believe, but data from the Pacific N.W. show that adequate sulfur prevented *Poa annua* from infesting bentgrass turf. At the same time the blue-green algae was reduced significantly.

Perhaps some of the advantages found in using adequate sulfur come from the fact that turf is rendered more vigorous, an obvious sign of healthier grass. Healthy turf resists injuries and recovers faster when injury occurs.

Dr. J. D. Beaton, director of agricultural research for the Sulphur

Institute in Washington, D. C., has accomplished a thorough review of the literature wherein there is an interaction between turfgrass and sulfur. We have previously named some of the advantages of keeping sulfur in balance with nitrogen, phosphorus and potash. But a statement of Dr. Beaton's seems particularly appropriate. "Sulfur deficiencies retard the growth of plants, including turfgrass," noted Beaton.

Merion bluegrass grown in sand culture showed a sulfur content of 0.15 percent in the leaves when grown in a complete nutrient culture. It rated only 0.04 percent when the solution was deficient in sulfur. Deficient leaves were yellow.

"Nitrogen and sulphur requirements are closely linked because both are required for protein synthesis," continued Dr. Beaton. "Plant protein contains about 17 percent nitrogen and 1 percent sulfur. Fertilization at high rates, particularly with nitrogen, will greatly increase the need for sulfur and may induce a serious sulfur deficiency."

From data submitted it was evident that a deficiency of sulfur restricted the crop response to nitrogen fertilization. Also, crop response

to sulfur occurred only when nitrogen was applied. Maximum response to nitrogen occurred only when sulfur was applied. Turfgrass managers should find it difficult to ignore these signals.

Sulfur deficiency symptoms in grass can be confused with those of nitrogen, iron, and potash shortages so that visual detection may be unreliable. Here is one case where tissue (plant) analysis can be most helpful. Specific data on the influence of sulfur on turfgrasses are limited, but all the evidence points in one direction—that sulfur plays an important role in turfgrass management.

Goss reports that turfgrass growth appears to be improved with sulfur on soils that are deficient in phosphorus. This is of great importance to those managers who have succeeded in creating a phosphorus deficiency in their efforts to reduce infestations of annual bluegrass.

Under wet cool conditions in the spring turfgrasses in some areas (for example, western Washington) develop a yellowish mottled appearance which can be reduced or eliminated with sulfur fertilization.

(Continued on page 64)



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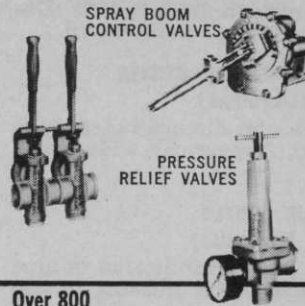
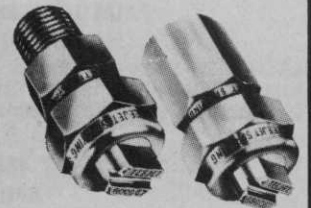
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