the past decade. Injury has been confined to the region along the Atlantic Coast, and to parts of northern Ohio. The insect causing damage in the North is called the hairy chinch bug, and is not the one responsible for injury to farm crops throughout the temperate zone.

In the nymph stage, the chinch bug is small and reddish in color. When fully grown, it is one-eighth inch long, and oval in shape. The body is black and the wings are white with black markings, and are folded on its back. Chinch bugs injure grass by sucking the juice from the stems. Afflicted turf wilts and turns brown. Chinch bugs do not like water or direct sunlight. Hence they are more common in dry than wet years, and are seldom in closely cut putting green turf. There are two broods, one in late May or June, and the other in August or September. The bent grasses are more susceptible to injury than fescue or Kentucky bluegrass. Clover and weeds are not attacked.

Finely ground tobacco dust, containing at least 1 per cent nicotine, derris, or cube dust containing one-half of one per cent rotonone have been used at 25 to 30 pounds per 1,000 square feet with indifferent success.

Sabadella and DDT dust are superior to anything used heretofore, but excellent kill has been claimed for Chlordane. Filmer and Smith at New Jersey got an excellent kill with 10 per cent DDT dust at 100 pounds per acre. With these new weapons there is no need to fear chinch bugs in bent turf.

Earthworms: Worm casts are very objectionable when the grass is sparse. They are bad for play and are apt to retard turf improvement by fertilization. Tractor and mower wheels squash the casts and smother the grass underneath. Worm casts are less noticeable when turf becomes dense, but are annoying underfoot to players. The control of worms is necessary on many fairways, especially if they are watered.

Lead arsenate at 200 to 400 pounds per acre has been the most effective way to control earthworms. Sodium arsenite and arsenic acid curb worms, beside their weed control function. Worm casts disappeared on experimental plots after the third or fourth treatment. So when they are used for weed and clover control, lead arsenate is not required for earthworm control.

Cutworms: The army worm is very bad some years and defoliates the grass as it moves across the fairways. Damage can be prevented by using DDT or lead arsenate as a barrier on a strip ahead of the army of advancing worms.

Leaf spot: The disease is caused by the fungus Helminthosporium vagans. The
LIQUA-VITA

The complete Liquid Fertilizer for Golf Greens

No burning in hottest weather — applied with fungicide — cuts labor costs to a minimum.

200 greenkeepers used LIQUA-VITA in 1947; over 500 in '48

There will be a lot more users in '49.

"There's a Reason"

Write for particulars

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lesions start as tiny brown specks on the leaves and enlarge until they may extend across the leaf. Then they cause the leaf to wither and turn brown. The tissue in the center of the spot becomes straw-colored, and has a narrow outer border, which is dark brown to black in color. In aggravated cases the entire leaf sheath is infected and turns brown. The stem and crown of the plant may become infected, and result in death to the entire plant. This type of leaf spot is called footrot. Permanent damage to the turf occurs during the footrot stage.

Leaf spot is most prevalent during moist cool weather, especially in spring. There is some evidence indicating that the sole and continuous use of chemical nitrogen aggravates the disease.

There are no treatments for leaf spot. Raising the height of cut to permit the development of more leaf surface is about all that can be done.

Brown patch and dollar spot: Both of these diseases have attacked bent grass fairways. Severe damage is rare. Recovery from brown patch occurs after weather becomes cooler. Total loss of grass has never been reported. Dollar spot is uncommon on well fertilized fairways, and is most prevalent on turf which does not get enough nitrogen. Injury has never been sufficient to necessitate fungicide treatment. Turf comes back and is usually better the next year because the disease thinned the grass and eliminated part of the heavy mat.

MODERN GREENKEEPING

(Continued from page 72)

There will be a lot more users in '49.

There's a Reason"

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sprinklers and snap valves are the choice of leading clubs

Nearly a half century of research and engineering are behind each Skinner Sprinkler. Years have been spent developing and improving the Skinner Line to meet golf's varied and exacting needs.

Single units or complete systems available, with these outstanding features: lightweight ... trouble-free operation ... easily adjusted rotation speed ... all parts brass, bronze or stainless steel. Write for data on the finest "tee to green" irrigation equipment — SKINNER.

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Golfdom
general equitable advance in greenkeepers' pay. And to be frank about it, a basic part of the salary lag is the greenkeeping superintendents' own fault in not making known their knowledge of the entire financial, operating and membership status of their clubs. The case, too often, with greenkeepers is that their boundary of the business picture of golf is limited by course maintenance budgets.

When the greenkeeper studies his club as a business instead of allowing himself to be regarded by golfers and club officials as just another toiler in the fancier stages of farming, then golfers will discover the greenkeeping superintendent as the key-stone in the future of golf, with the 15,000,000 players some consider to be the potential roster of golfers within the next 15 years.

As far as all knowing parties in other phases of the game are concerned, the better the greenkeeper does the better it will be for them. At a luncheon of your conference and show committee I heard Randolph Scott, green chairman at Bel-Air make the most realistic and hopeful comment on course superintendent's work I've heard for a long time. In commenting on the $4,000 fund from the Southern California Golf and Public Links associations for this convention's expenses, Scott said: "We at the clubs are confident we'll get more than $4,000 back in what you men learn at this meeting." Randy has been a green chairman just one year but he is learning fast and right. His confidence about dividends on the $4,000 investment is well founded. This meeting probably will mean a million dollars in directly traceable benefits to golf courses and others interested in turf. Colin Simpson's effect on club officials and the deft propaganda of Maury Luxford show more promise for Southern California Supts. than I've seen in other districts.

Someday in the future golfers generally may recognize the source of the benefits in better playing conditions with greater maintenance economy. Today they don't. Much of the future growth and prosperity of the golf business depends on proper understanding and reward of the greenkeeping superintendent's work.

How this essential factor will or can be handled is still anybody's guess. The superintendent can't depend on the average chairman to spread the gospel. The chair-

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**BETTER PREPARED SOIL**

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*THROUGH EFFICIENT WATER, FERTILIZER USE*

Fast, safe correction to costly evils of compact soil conditions.

**PERRY'S GREENS SPIKER**

loosens compact soil at rate of 144 penetrating holes to every four sq. ft.—see cross-section view. Penetration depth adjustable. Tractor drawn, quickly opens up greens and fairways without injury. An essential tool of healthy, economical turf upkeep.  
Write for complete details.

**PERRY'S GREENS SPIKER**

2539 LA ROSE, MEMPHIS, TENN.

May, 1949
man generally gets fed up with his job quickly. He says to himself—maybe to others—"I joined the club to come out and have fun, not to carry a responsibility and get criticized. The hell with it." So he refuses to accept another term, quits to enjoy himself and leaves the superintendent to get "the hell with it."

PROPER DIAGNOSIS
(Continued from page 40)

but where it is not maintained as the greens. Mowing at almost green height and raking may be necessary to keep this mat from forming. Greens turf even though mowed quite close may also develop this mat.

WASHBOARD EFFECT ON FAIRWAYS—As faster tractors have developed for mowing fairways, this condition has become more common. Although it cannot be classed as a cause for turf failure, this condition does spoil the playing surface and results in a poor mowing job. Fast mowing combined with improperly adjusted mowers will cause this washboard effect. If the reel is screwed down so that it is too tight against the bedknife, the rotation of the reel tends to raise the rear roller off the ground. As the mower moves down the fairway, the roller will jump up and down producing the rippled effect in the grass surface and eventually in the soil surface.

MOWER OUT OF ADJUSTMENT—A desirable putting surface on a green is primarily the result of good mowing. Unless the mower is cutting evenly and cleanly a poor putting surface will result. If the leaf blades are chewed-off by a dull, poorly adjusted mower, the cut ends will turn brown. Such mowing provides easy entrance for disease organisms.

POOR SURFACE OR UNDERGROUND DRAINAGE—Grass cannot make healthy growth in a water-logged soil since the grass roots must have air. Poorly drained greens are usually problem greens in all respects. Adequate drainage should be provided
when the green is constructed, but if this has not been done, the installation of tile drains or changes in grade are a necessity.

**Layering** — Some years ago the practice of topdressing greens with straight peat or sand was quite common. Unfortunately the peat and sand do not mix with the soil above or below, but remain in a layer exactly where placed. As these layers are covered with other materials they interfere with water movement both up and down. In addition the grass roots will not penetrate these layers. A good rule to follow in topdressing greens is to use only a material which is an ideal medium in which to grow grass.

**Black Scum or Algae** — This is a green slimy growth which turns to a black hard crust when dry. Usually develops where drainage is poor or the turf has been damaged. Black scum is a sign that conditions are not satisfactory for healthy grass growth.

**Bad Judgment** — No amount of expert advice or assistance is a substitute for sound judgment on the part of the golf course superintendent. The condition of any golf course is for the most part determined by the daily decisions of the man in charge. His decisions concerning such practices as mowing, watering, disease and insect control, fertilizing, etc. are the major factors in maintaining good turf on greens and fairways. The “experts” can give him assistance on technical matters but in the greenkeeper will rise or fall on the soundness of his daily decisions.

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**— THE "HENRY" GOLF BALL WASHER—**

**HENRY’S "TENTH"** year of sturdy service

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Saves players’ clothes and tempers because it is slop-proof. Saves time because it is quicker, more thorough and easier to use. Saves cover paint of balls because it has no scouring bristle brushes. Saves frequent replacement costs because its cleaning units won’t rot and warp.

Attractive — stays tidy — easy to drain and refill — Allen Set Screws make them theft proof

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**EVER SOLD**

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Save a lot of labor and money this year, next year, and the years to come by having a hand or power Hydro-Mixer. Accurate and efficient.

Connects to your present water system. Works just the same on high or low pressure. Write for literature.

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NEWS from the MANUFACTURERS

THE NEW RUTLEDGE CADDY SAVER

The Rutledge Company, Beckley-Ralston Div., 3333 Belmont Ave., Chicago 18, Ill., manufacturers of Stroke Saver Golf Clubs announce their latest addition—a new Caddy Saver, which never has to be carried. When collapsed, axle braces are contracted so it can be rolled through use of an auxiliary handle (with bag attached) to an automobile, through locker room aisles, street car, narrow doors, etc. When in use on the course, braces are extended, lengthening the wheel base for perfect balance. Caddy Saver weighs only 12 pounds, and is made of high-strength aluminum tubing and bar stock.

PRICE REDUCED ON PARGLOV

An attractive four-color folder giving a full description of the K. L. Burgett Co.'s new Par-D-Lux golf glove and other pro shop accessory items featured in the company's national advertising is being distributed to professionals. Priced order card which accompanies folder shows considerable reduction in price of Parglov enabling pros to pass saving on to players. Further information may be obtained by writing to the Burgett Co., Peoria, Ill.
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JARI POWER SCYTHE
Streamlining and housing of all movable parts on the new Jari power scythe giving the blades maximum free cutting length for mowing under fences, shrubbery, low-hanging trees and guardrails makes this an important piece of maintenance equipment. High-mounted motor allows cutting under water and on rough terrain, correct balance prevents side draft and ease of operation, and low fuel consumption accounts for important economy. Additional information on the power scythe available from manufacturer, Jari Products, 2938 Pillsbury Ave., Mpls. 8, Minn.

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EDERER PROMOTES MANGERICH
At a recent meeting of its Board of Directors, the R. J. Ederer Co., Chicago, announced the appointment of John "Al" Mangerich as manager of the company's Industrial and Sports Net Division. Affiliated with R. J. Ederer and Co. for the past 28 years Mr. Mangerich was formerly Asst. Sales Manager of the company's Commercial Net Division.

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the original beauty to all old leather products except suede. Put up in a handy tube and easily applied with fingers or a soft cloth, this leather rejuvenator and preservative, manufactured by Honey Mead Products, Signal Hill Road, Barrington, Ill., should find numerous uses in any club.

**WILSON'S PRESS BOOKS**

Wilson Sporting Goods Co. has issued 1949 Press and Radio information books with photographic prints for newspaper and magazine use on its golf advisory staff. Patty Berg and Babe Zaharias are in one book, together with records of leading women's tournaments and the 22 men members of the Wilson advisory staff, together with leading tournament records, are covered by biographical material in the other book. These jobs by Mark Cox, Wilson's Public Relations director, are of great reference value to sports writers and broadcasters.

**ILLUSTRATED RULES OF GOLF PRO SHOP PROFIT ITEM**

The "Illustrated Rules of Golf At A Glance," road-map style folder which combines Golfing Magazine's famous rules charts with the USGA Official Rules of Golf acclaimed by golfers over the nation as the handiest rules reference available. Graphic illustration and grouping of rules by zones of play simplify interpretation and make folder valuable pro shop item to have available for all members. Regular pro discount on quantity orders. Write Book Dept., Golfing Magazine, 407 S. Dearborn for complete details.

**COMPANY ADDS NEW UNIT TO LINE OF FERTILIZER SPREADERS**

Power Production Co., Chicago, announces the addition of the Ezee Flow "Olympia 55," (shown below) to their line of fertilizer application equipment. The "Olympia 55" is in keeping with company policy of providing practical machines for all phases of fertilizer application, according to E. A. Juzwik, pres. of the company. Features have been incorporated that give to golf courses for the first time needed flexibility, speed and ease of operation in fertilizing, seeding and chemical applications. With a 5 foot overall width and the wheels back of the hopper, misses or overlaps are eliminated by track-on-track
Buyers' Service

Check off your Supply & Equipment Needs. Tear out and mail this sheet to Golfdom, 407 S. Dearborn St., Chicago, Ill., or use convenient card. You'll get prices and literature direct from the sources of supply.

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Aerifiers: fairway □ green □
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Arsenate of lead
Ball washers
Bent grass stolons
Brown-patch preventives
Compost mixers
Compost spreaders
Crabgrass eliminators
Cultivators: f'way □ green □
Drinking fountains
Electric Plant (Portable)
Fencing
Fertilizers
Flags (greens) □ Flag poles □
Flood lights
Fungicides

Pro Shop

Bag towels
Bags: canvas □ leather □
Bag carts, for players
Balls: Regular □ Range □
Ball cleaner (individual)
Ball markers □
Bandages, adhesive
Buffing motors
Caddie badges □ uniforms □
Calks, for shoes
Caps and hats
Clubs: Woods □ Irons □
Putters □
Club display racks

Club House

Air conditioning equip.
Athletes foot preventives
Bath mats
Bath slippers
Bars
Bingo cards
Charcoal cookers (outdoor)
Coolers (food & beverage)
Disinfectants
Fire protection equipment
Fungicide applicators
Golf Course Const'n Engineers
Hedge trimmers
Hole cutters
Hose, ¾" □ 1" □
Humus
Insecticides
Leaf rake & pulverizer (power)
Miniature Course Const'n □
Miniature course matting
Mole Taps
Mowers: putting green □
Mower grinders
Peat Moss
Playground equipment
Pumps
Putting cups
Refrigerators
Rollers (water filled)
Scythes (motor driven)
Seed: fairway □ green □
Seed cutter
Soil cond. material
Soil screeners □ Soil shredders □
Sprayers: power □ hand □
Spikers: greens □ fairway □
Sprinklers: f'way □ green □
Sweepers (power or hand)
Swimming pool architects □
equipment □ filtration □
purify, chemicals □ paint □

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State __________________________ Zone (_______) _______________________________________________________________________

Title ________________________________________________________________

May, 1949
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Each month GOLFDOM presents the latest, most practical ideas on golf club administration, management, upkeep and service ... for time, labor and money-saving guidance of your officials and department heads. Help the right men at your club do the job right. Send in the form below so we can get them "on the beam".

FILL IN THE FORM BELOW — THEN MAIL THIS PAGE TO —
GOLFDOM, 407 SOUTH DEARBORN STREET, CHICAGO 5, ILLINOIS

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President's:
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Secretary's
name .................................................. (Zone ............)
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Manager's:
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