

Verticillium wilt

Verticillium wilt, caused by the fungus *Verticillium albo-atrum*, has become increasingly prevalent among plantings of shade and ornamental trees and shrubs. The disease affects a wide variety of unrelated annual and perennial plants but seldom occurs in wooded areas or in forest stands. Verticillium wilt has been known to occur on planted trees for over 50 years.

New tree and shrub species are continually being reported as susceptible to this fungus. Presently, about 80 tree and shrub species and varieties growing in the United States are known to be susceptible to Verticillium wilt. It is probably safe to say that Verticillium wilt affects more kinds of ornamental plants than any other disease. The disease is not always fatal but does cause a large amount of branch kill so that ornamental value is often lost and many affected plants eventually must be replaced. The

disease is reported throughout the United States and in many other countries. (Refer to the table for trees and shrubs susceptible to Verticillium wilt.)

Disease symptoms—External and internal symptoms are variable and often difficult to recognize. Usually the first external symptom is sudden wilting of foliage on one or several twigs on a branch. Later the entire branch or the whole crown may show typical wilt symptoms. Most plants first show symptoms in June or July; however, some trees may wilt as soon as new foliage is produced in the spring.

Other external symptoms that may indicate Verticillium wilt are general decline in current twig growth, dieback of individual twigs and general yellowing of the foliage. Occasionally trees, such as the maple and the tulip, develop elongated dead areas of bark where the inner bark has been killed on

the diseased branches or trunks. Plants that develop a limited amount of branch wilt during the summer may show additional wilt and dieback the following year, and others may recover and not wilt in succeeding years. Plants having extensive or general wilt throughout the crown are often dead by the end of summer.

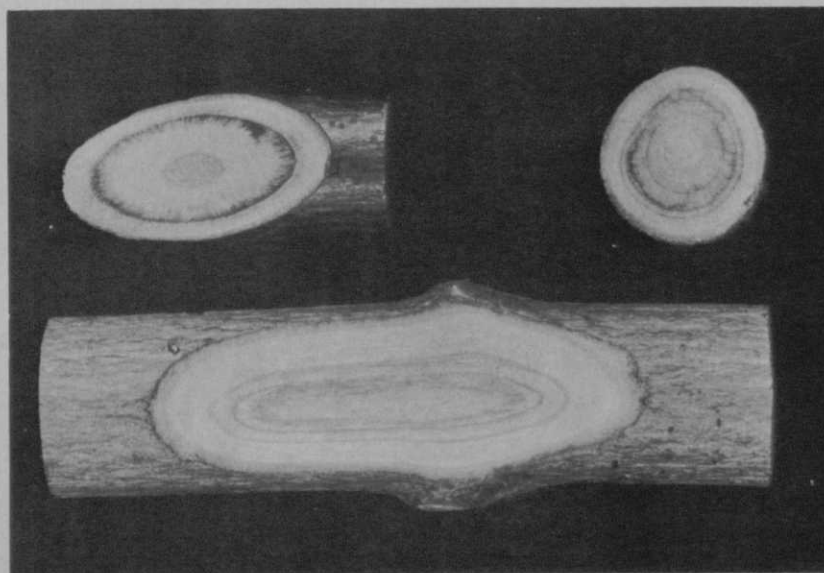
Sapwood discoloration often occurs in twigs and branches showing advanced stages of foliage wilt. The discoloration is found by making a long slanting knife cut across the end of a branch sample. In most trees the sapwood discoloration occurs as streaks of various shades of brown. Infected maple, magnolia and sumac show light to dark green streaks.

The Verticillium wilt disease can only be positively identified by having a laboratory diagnosis made from infected branches. This service can usually be obtained by sending two or three branch sections cut from recently wilted branches to the plant pathology department of a local college or university. Immediately after the material is collected it should be placed in a plastic bag and mailed.

Care of infected trees—The fungus is parasitic on living tissue of many plants and can live over a year in dead organic matter in the soil. The fungus spores or microscopic filaments, known as hyphae, gain entry into the vascular systems of plants through wounds made on the roots, branches or trunk. Wounds on the trunk caused by lawn mowers afford excellent areas for infection to occur. Such wounds should be treated by cutting away the damaged bark and painting the exposed wood and injured bark area with a standard tree dressing paint.

Trees or shrubs suspected of having Verticillium wilt should be watered immediately. Susceptible plants occasionally show symptoms of the disease while they are in a weakened condition following

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Typical discoloration is often observed in the diseased sapwood of twigs and branches cut from infected Norway maple trees.

MAPLES

(Continued)

transplanting. Drought conditions may cause wilt symptoms on affected trees to be more severe. Affected trees should be watered every 10 to 14 days with the equivalent of two inches of rainfall. A portable water sprinkler may be used. If the affected plant survives, regular watering at two to three week intervals should continue during dry periods in the summer of the succeeding year.

Also, affected plants should be fertilized to stimulate vigorous growth. For quick response, the fertilizer should be injected into the soil in liquid form or applied to the soil surface and watered in well. Urea can be applied on the surface or injected at the rate of 13 pounds per 1,000 square feet.

Branches killed by the disease can be pruned. Pruning diseased branches will not eliminate the fungus that is present in the trunk or roots of the affected plant. All pruning tools should be carefully sterilized with rubbing alcohol before using on any other plants.

Future tree and shrub selections—Tree and shrub species most frequently affected with *Verticillium* wilt are: ash, barberry, catalpa, elm, magnolia, maple,

redbud, Russian olive, smoke tree, sumac, tulip tree and viburnum. Any of these plants mentioned should not be used to replace plants killed by the disease. Generally, narrow and broadleaf evergreen trees and shrubs may be considered safe replacements. (See table for a complete list.)

Oak Wilt

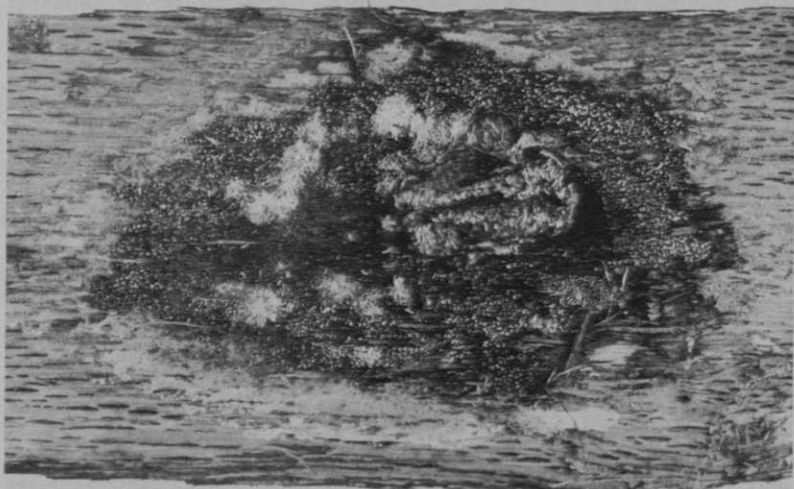
Although *Verticillium* wilt is common on many kinds of ornamental trees and shrubs, oak wilt presents a threat only to species of oak. The fungus causing oak wilt is technically called *Ceratocystis fagacearum*. Once the oak wilt disease becomes established in a wooded area it can steadily progress until a large number of valuable trees eventually are killed. At present the disease is restricted to the eastern part of the United States. It has been reported in 19 states ranging from Pennsylvania in the east, Arkansas in the south, Nebraska in the west and Minnesota in the north. The disease is believed to be native to the United States and is not known to occur in any other country. Fifteen years ago it was thought to be a serious threat to the entire oak timber population, but intensive national sur-

veys indicate that it is not spreading to new areas as rapidly as plant pathologists had believed it would.

Recognition of the disease—

Oak wilt symptoms may appear any time from May until frost occurs in the fall. Known hosts of the oak wilt fungus include 36 species of oak and six tree species closely related to oak: Allegheny and bush chinquapin, tanbark-oak and American, Chinese and Spanish chestnut. In early stages of the disease wilting and browning of the foliage usually appear in the upper crown. Among trees of the red oak group, which includes red, black, pin and shingle oak, wilting rapidly progresses downward until the entire tree is affected. Partial to complete defoliation occurs within a few weeks after the first leaf symptoms start to show. Some leaves that are still green fall and have typical muddy green or brown margins. Frequently, brown discoloration may be found in the outer sapwood of wilting branches.

White and bur oaks usually have only a few branches that wilt the first year. In succeeding years other branches may die, giving the tree a stagheaded appearance. Infected white and bur oaks may persist for several years, whereas infected red and black oaks usually die in one growing season. As in



Once oak wilt becomes established (left) in a wooded area, it can steadily progress until a large number of valuable trees are killed. The oak wilt fungus (above) on the wood surface has produced a fungus mat under the bark. The center raised portion is part of the fungus growth that apparently pushes the bark loose to help form a crack through which insects enter.



Picnic beetles and larvae feeding on an oak wilt fungus mat. The insects become contaminated with the fungus spores and fragments and carry them to wounds on healthy trees.

the case of *Verticillium* wilt, it may be necessary to consult an extension specialist to get a positive diagnosis.

Oak wilt symptoms can be confused with those caused by other problems that occasionally affect oak. Lightning-struck trees usually turn brown in a few hours after they are struck and leaves are retained on the branches. Most oak trees, particularly white and bur oak, are very sensitive to even an inch or two of soil fill that may be placed over the original soil surface. Wherever there have been soil disturbances or applications of weed killers, tree troubles can usually be predicted.

Preventive and control measures

No treatment is known that will cure a tree once it becomes infected by the oak wilt fungus. Trees become infected in two ways: 1) by insects transmitting the fungus from diseased trees to wounds made on healthy trees and 2) by the spread of the fungus through grafted roots between diseased and healthy trees. Abundant natural grafting of roots occurs between trees of the red oak group. Root grafting between trees of the red and white oak group is believed to be uncommon. White oaks in mixed stands often remain unaffected even though the number of red and black oaks in the area has been substantially reduced by the oak wilt disease.

(Continued on page 64)

Verticillium Wilt

Susceptible

Almond
Apricot
Ash, Black, Blue, European,
Green, White
Azalea
Barberry, Japanese
Boxwood, Korean
Camphor tree
Carob
Catalpa, Western
Cherry
Chestnut, Spanish
Coffee tree, Kentucky
Cork tree
Dogwood
Elder
Elm, American, Chinese, English,
Scotch, Slippery
Goldenrain
Guayule
Hawthorn, India, Yeddo
Holly olive
Honeysuckle
Horse chestnut
Judas-tree
Laurel, Cherry, Portugal
Linden, American, Little leaf

Locust, Black
Magnolia, Saucer, Southern, Star,
Maple, Amur, Black, Boxelder,
California Boxelder, Japanese,
Norway and varieties, Red, Oregon,
Painted, Striped, Sugar,
Sycamore
Oak, Pin, Red, Turkey
Osage orange
Pagoda tree
Peach
Persimmon
Pepper tree
Pittosporum
Plum, Canada
Privet, Amur
Redbud
Rose, Multiflora
Rose daphne
Russian olive
Sassafras
Smoke tree
Sour gum
Sumac, Fragrant, Smooth, Staghorn
Tree of heaven
Tulip tree
Viburnum, Doublefile, Nannyberry,
Wayfaring tree
Yellowwood

Not known to be susceptible

Bald cypress
Beech
Birch
Fir
Ginkgo
Hackberry
Hardy rubber
Hickory
Holly
Honey locust
Hop hornbeam
Hornbeam

Juniper
Larch
Mountain ash
Mulberry
Oak, white and bur
Palm
Pecan
Pine
Poplar
Spruce
Sweet gum
Sycamore
Willow
Zelkova

Combating Oak Wilt

Where oak wilt is a problem a five-point program should be followed:

1. If oak wilt is suspected, obtain professional advice or send suitable branch samples to a laboratory for diagnosis. Branch pieces six inches long and one-half inch in diameter should be collected from living branches on which there are wilting leaves. The samples should be mailed in a plastic bag to a plant disease laboratory for testing;
2. Trench between diseased and healthy trees as soon as possible;
3. Immediately cut and destroy

the diseased tree by burning;

4. Protect wounds that may be made on healthy trees and prune only when trees are dormant;

5. Survey the oaks periodically throughout the spring and summer for any new cases of diseased trees.

Conscientiously following this program will prevent further loss of valuable trees, and the trees will be around for future generations to enjoy their beauty and shade.

NEWS OF THE INDUSTRY

Speed up the slow ones

Is slow play a problem on your course? GOLF and GOLFDOM Magazines have available for free a limited supply of posters, which suggest to golfers eight ways to speed up their games. Write: GOLFDOM, 235 East 45th Street, New York, N.Y. 10017.

Overall equipment sales decline

Total golf equipment sales by manufacturers, according to the 1969 report published by the **Athletic Goods Mfg. Assn.**, came to \$183,723,711. In 1968 total sales were \$187,285,630, a decline of \$3,561,919. (Valuations are based on manufacturers' published prices to pro shops and dealers.)

Sales of golf clubs for 1969 were valued at \$98,696,494; club sales in 1968 were \$103,304,881. Of this 1969 total, sales of irons and putters came to \$62,618,204; woods came to \$36,078,290.

Golf ball sales, measured in dozens of units, showed an increase in 1969 to \$65,033,699 from \$61,954,061 in 1968.

Sales of golf bags totaled \$15,220,846 in 1969, declining from \$16,514,298 in 1968. Golf glove sales in 1969 came to \$906,472. The figure for 1968 was higher: \$1,387,887.

Under the category of other golf sundries (this category is combined with golf club carts) the sales figures for 1969 was \$3,866,200; for 1968, the figure was \$4,124,503.

The figures for the 1969 survey were based on information supplied by 47 equipment companies.

Stauffer to acquire Metasurf Corp.

Stauffer Chemical Company has entered into an agreement to acquire **Metasurf Corp.** and its subsidiary, **Metasurf Canada Ltd.**, a manufacturer of conversion coatings, protective coating chemicals for rust proofing and friction protection, alkali cleaners, rust removers and metal conditioners.

The acquisition price was not disclosed, but **Metasurf's** sales in 1969 exceeded \$2.1 million.

The expansion into the metal finishing field began when Stauffer acquired the **Cowles Chemical Company** in 1968. Said Roger W. Gunder, president and chief executive officer of Stauffer, "... the acquisition not only will broaden our product line but also strengthen Stauffer's marketing base in the metal finishing industry... **Metasurf's** sales territories and sales force provide the desired planned expansion of our metal finishing department's marketing capabilities."

Pro-only lawsuit continues; motions for dismissal denied

A Federal District judge in New Orleans on June 3d denied additional motions for dismissal of a \$1.5-million lawsuit filed by a retail outlet against 14 golf equipment and accessories manufacturers and the Professional Golfer's Assn. (See GOLFDOM, June issue, p. 39.)

U.S. Judge James Comiskey turned down motions by **Uniroyal, Inc.; Professional Golf Company; Karsten Mfg. Corp., and Dunlop Tire and Rubber Company** after hearing arguments for **Golf City, Inc.**, the plaintiff.

The judge also dismissed without prejudice several motions for summary, saying, "I take the position that motion for summary judgement should not be entertained until" enough information is disclosed at pre-trial hearings. "I deny all motions for summary judgement."

Golf City, a New Orleans retail golf equipment outlet, is charging that the manufacturers and the PGA are in violation of the Sherman Anti-Trust Act by not allowing the plaintiff to buy and resell, at retail, the top equipment lines put out by the manufacturers. These prestige lines, called "Pro-only," are available only in pro shops at recognized golf courses.

Golf City filed an amended and supplemental suit in May, which the court now considers a replacement for the original filings by **Golf City**.

Most attorneys appearing on June 3d for their respective defendant clients argued that the plaintiff did not enlarge on the allegation of conspiracy in the supplemental petition.

Comiskey said that he will soon set down a schedule governing the discovery proceedings.

Earnings see-saw

*Net sales of \$86,125,878 for the three month period ended March 31 was reported by **JI Case Company**. For the same period last year, sales were \$103,018,915. The company now reports on a*

*calendar fiscal year to conform with the fiscal year of its principal shareholder, **Tenneco, Inc.***

The first quarter for 1970 showed a net loss of \$5,054,928 compared with last year's net profit of \$845,396 for the same three months. According to Case president James L. Ketelsen, income was affected by the 16 per cent decline in sales and reduced production, including the shutting down of two major plants for two weeks.

*Sales and earnings for the nine month period ended April 30 set record highs for **Toro Mfg. Corp.** The firm reported shipments of \$44.5 million. 16 per cent over the \$38.3 million reported for the same period last year. Net earnings of \$2.3 million were 7 per cent over net earnings from the same period last year.*

Allied Assn. meets; Campaign planned to get golfer support

Allied Assn. met recently in Chicago to deal with the growing concern over mounting tax problems of daily fee and private golf clubs and the potential plight of the nation's golfers who face serious—even disastrous—playing conditions should their favorite courses be taxed out of existence.

This was the second meeting of the association which brings together the Professional Golfers' Assn., United States Golf Assn.; Golf Course Superintendents Assn. of America, Club Managers Assn., National Golf Foundation and the National Club Assn.

Agreeing that the unsupported action of a single association could not solve the problems brought on by escalating real estate taxes and the Tax Reform Act of 1969, the Association members offered their services and cooperation to the National Club Assn. which has been carrying on single-handedly on behalf of clubs in these areas. The group's decision was based on an analysis of the issues presented before the industry by Jack P. Janetatos, general counsel for the National Club Assn. He discussed The Fair Labor Standards Act; civil rights, and The Tax Reform Act of 1969.

The Fair Labor Standards Act. Janetatos stated that Congressman John Dent, chairman of the House General Labor Subcommittee, indicated that new legislative proposals were being formulated and are expected to have hearings in the very near future.

Civil Rights. Janetatos described recent litigation and legislative activity in this area, and explained issues arising under the Civil Rights Act of 1964, the Civil Rights Act of 1866 and the Fourteenth Amendment. Further explanation was given to the Association regarding recent developments at the state and local levels.

The Tax Reform Act of 1969. Janetatos reported on the revolutionary impact of the Tax Reform Act and how it would affect private clubs, which were the target of extremely harsh treatment under the new law. He explained further the working of the new law in detail and devoted special attention to problems which will be encountered by clubs holding golf tournaments. He said that the new tax would be extremely harmful to the game of golf unless rapid action was taken to obtain guidance from the Internal Revenue Service. He explained also that NCA was now considering whether to undertake work to help the Treasury formulate regulations under the law, but that funds were not now appropriated for this purpose and he did not know if sufficient funds would be available. (For an analysis of the new law, read "Operating Under the Tax Reform Law," p. 31.)

In addition to a coordinated effort in the legislative, tax and legal fields, the Allied Assn. is also studying plans for an extensive public relations program to better inform the country's 16 million golfers of the threat to the game and to enlist their aid in securing the passage of corrective state and Federal legislation.

The Association is also studying the appropriate division of responsibility, expense and profit resulting from the increased use of golf cars, as well as the development of a better administrative program for the clubs themselves.

The Association's next meeting will take place in late July at PGA headquarters in Palm Beach Gardens, Fla.

Attending the meeting for their respective associations were: P. J. Boatwright, executive director, USGA; Leo Fraser, president, PGA; Warren Orlick, secretary, PGA; R. William Clarke, treasurer, PGA; Robert Creasey, executive director, PGA; Joe Graffis, NGF; William L. Pack, executive director, NGF; Donald Rossi, NGF; Larry Smith, NGF; Edward J. Drew, president, NCA; Kenneth W. Emerson, executive director, NCA; Jack P. Janetatos, counsel, CMAA and NCA; Norm Kramer, vice president, GCSAA; Robert V. Mitchell, secretary-treasurer, GCSAA; Richard Blake, GCSAA; Ben J. Chlevin, executive director, GCSAA; H. Alton Owen, past president, CMAA; Joseph J. Donoghue, past president, CMAA, and Edward Lyon, executive director, CMAA.

Nicklaus film available

"Tournament Play With Jack Nicklaus" is a new golf film on the Westchester Classic that is available on free loan to country clubs. It features Nicklaus' comments on the competition, discussion of the course, his strategy, his shots and his mistakes. Nicklaus compares his shots with Lee Trevino and Frank Beard, and the split screen shows Nicklaus, Palmer and Sanders driving in unison.

The 28½ minute 16mm color film may be ordered from the distributor, Modern Talking Picture Service, 2323 New Hyde Park Rd., New Hyde Park, N.Y. 11040.

News briefs

The Cleveland District Golf Assn. reports in its Summary of Country Club Operations for 1970 that 90 per cent of responding clubs anticipate an increase in dues in 1970. The increases will run from \$8 to \$10 a month, averaging about \$100 a year. Average maintenance of an 18-hole course runs \$77,000 a year; the cost per hole is \$3,250 . . . In the **Northern Ohio Chapter's** survey for 1970, private country clubs with budgets of \$80,000 and above earmark 65 per cent of their budgets for labor on the average. Country clubs with budgets of \$80,000 and below average 51 per cent for labor. Public courses and semi-private courses use 60 per cent and 68 per cent, respectively, of their budgets to pay for labor . . . **Jackson Bradley**, former resident pro at River Oaks CC, Houston, joins Elkins Lake as director of golf and manager of the development's Houston office. Elkins Lake is a new recreational-residential development located south of Huntsville, Tex., on Interstate 45 . . . **Seven Devils Resort and Club**, a par-71 championship, 18-hole course, opened in early June. It's located near Boone, N. C. . . . **Gerald D. Schwendinger** switches from assistant pro post at Argyle CC, Wheaton, Md., to pro job at Reston G & CC, Reston, Ga. . . . **H. George Clauson** is head pro at Clauson's Inn and Golf Resort, North Falmouth, (Continued on page 56)

(Continued from page 55)

Mass., succeeding Gilbert Geitner . . . **Pete Leslie** goes to Wikiup GC as manager and head pro, a newly-created post. Leslie directed operations of the United States for 4½ years . . . Under construction: a new 18-hole course at **Major Center**, in central Florida.

**Rocky Mt. golf seminar:
solving problems for the 70s**

Challenges for the 1970s were faced by key golf business executives attending the **4th Annual Rocky Mt. Golf Management Seminar** at Boulder (Colo.) CC.

A keynote talk on *Where Golf and Country Clubs Are Going* set the theme. Said Horace Duncan, Denver, former national president of the Club Managers Assn. of

America: "The name of the game in 1970 will be economics and competition . . . Rising costs are a continuing trend. Our payrolls went up 80 per cent in the 1960s. Course maintenance costs rose 85 per cent. It will be a challenge to keep up with inflation . . ."

The program also included panel discussions on *Preparing for Tournaments*, *Remodeling Your Old Golf Course*, *Synthetic Turf—A Place in Golf?* and wound up with small groups working on *Solutions for the 1970s*. The latter session turned up these suggestions for solving problems common to most courses:

To get better cooperation between key men, improve communications;

To help cure slow play, "use plenty of signs but change them often;

To set green fees, the amounts depend on the type of course. But they must be based on the cost of operation—expenses divided by rounds of golf;

To handle increasing golf car traffic, more hard paths should be planned, but carefully.

State Senator Les Fowler of the host club, three-time Colorado champion and veteran of many national events, made these suggestions for upgrading a tournament:

Create plenty of advance publicity, to players, clubs and press;

Make players "feel like kings" with arrangements for housing, food, lockers, courtesy, rules sheets and special scorecards;

Plan in advance the necessary course grooming and work schedules during the competition;

Provide golf cars for committee chairmen, referees and press;

Build a permanent scoreboard;

Schedule prizes to include mostly merchandise certificates from the club's pro shop. The player can then choose what he or she wants, and the pro is then more likely to assist the committee.

The Colorado Golf Executive of the Year for 1969 award went to **William Macksam**, professor of horticulture at Colorado State University, Ft. Collins. He coordinated plans and supervised construction of a new experimental green on the CSU campus.



If Powerscreened topdressing is better, why does it cost less?

Speed is the answer. If you're topdressing with tediously hand-screened material, you're probably paying an extra five dollars a yard for a dressing that still brings complaints from golfers. Sticks and stones may hurt your reputation, and clog up your spreader, besides.

Golf course Superintendents who've gone over to Royer Powerscreening are reporting a real drop in cost of this

important maintenance item. Simple arithmetic tells you that a Royer Powerscreen, making payments on itself at five dollars (or more) a yard, can bring almost immediate relief to the maintenance budget bind.

Let a Royer distributor show you that what goes up can come down . . . meaning, of course, the high cost of topdressing. And he'll show you how a Royer Powerscreen can be put to work on short notice, and work efficiently for an hour or a day at a speed you wouldn't have believed.

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ANNOUNCING

NEW budget-priced ball washer!

Combines long life with low maintenance

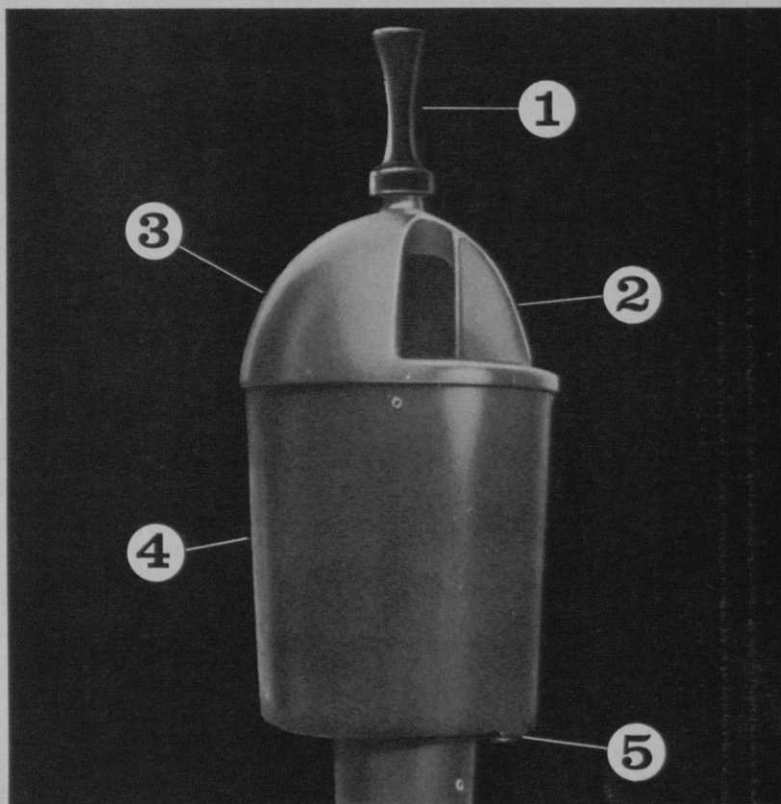
New Lewis aluminum-fiber-glass housing with stainless steel, rubber and nylon fittings assures rust-free dependability and trouble-free operation.

LEWIS LEADS AGAIN! You asked for a Ball Washer combining trim design with smooth operation and minimum maintenance . . . at a modest price. Lewis engineers achieved this with the remarkable new GF-68 Washer, combining aluminum and fiberglass. Its functional design and smooth, splash-free cleaning action pleases players from the first insertion of the ball to its final automatic transfer to the holding tray.

Greens Superintendents recognize these top quality features . . .

Lewis fine quality materials assure long life and easy maintenance:

(1) Tough phenolic grip holds solid stainless steel plunger shaft firmly, permits 360° swivel. (2) Oversize opening directs ball to nylon paddle for spin-action cleaning. Exclusive design automatically ejects ball into receiving "tray". (3) Cast aluminum top is designed for rough use. Easily removed to replace brushes after 3 to 5 years of normal use. (4) Molded fiberglass base forms large water chamber. Washer can't become rusted to post. (5) Outside drain plug for easy flushing.



New Fluorescent Flagpole features high visibility . . . pinpoints cup on green from 100-150 yards out. Ken Voorhies, Columbine C.C., Denver, Colorado, shows vertical stance of pole with new chamfered ferrule and chamfered cup.



Lewis Deluxe GF-555 Tee Stations are used by Wade Flatt on all eighteen tees of his Skyline Country Club at Wichita Falls, Texas. He uses Lewis Line equipment exclusively because of its dependable service.

20-55



Lewis Line GOLF EQUIPMENT

Cup Cutter • Cups • Flags • Flagpoles • Tee Markers • Tee Stations • Ball Washers
Practice Markers • Cup Setters & Pullers • Rakes

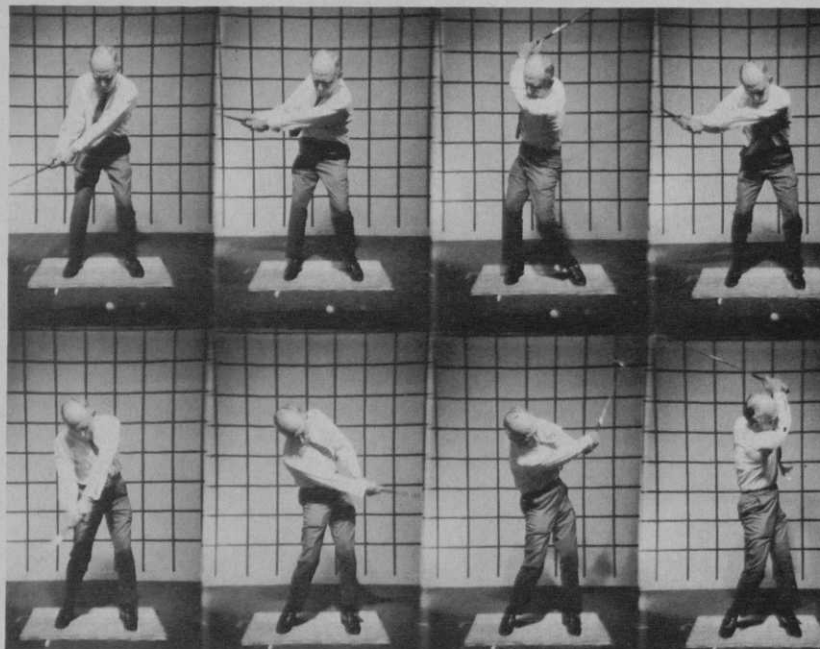
CONTAINER DEVELOPMENT CORPORATION • 4107 Montgomery St. • Watertown, Wisconsin 53094

NEW PRODUCTS



Ryan Equipment Company has added an 18-inch sod cutter to its JR line. Designed for use on a wide variety of soils and grasses, it cuts sod to standard commercial 18-inch widths. It is a self-propelled unit which cuts up to 1,150-square yards an hour, at any thickness up to 2 1/2-inches. Optionals include a Tote Trailer and blades for edging, tilling, trenching, sod stripping and laying flexible pipe or tubing.

Circle No. 101 on reader service card

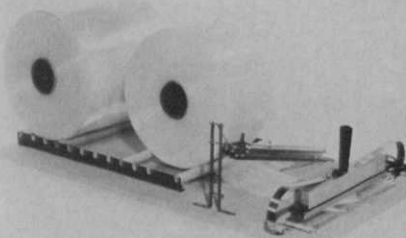


Tee & See Golf Sequence Photos, Inc., provides eight stop-action sequence photos on one four by five Polaroid print, programmed to match the timing of an individual's golf swing. A photo analysis jacket plus a Master Pro Swing Guide, an eight-sequence illustration of a "picture" swing is available for \$7.50. For an additional \$7.50 an analysis of the golfer's swing is provided.

Circle No. 102 on reader service card

Harwil Company announces the Model T-1000 that produces an unlimited variety of plastic bags. It uses lay-flat plastic tubing in a multiple-roll. It consists of four elements: 1) plastic tube support; 2) double action cutter; 3) heat sealer, and 4) a press board base.

Circle No. 104 on reader service card



International Harvester Company announces the 3200 Compact Loader with hydrostatic drive. It has infinite forward and reverse speeds from zero to eight mph. This loader has a 30hp engine and pivots in its own length. It works under six-foot clearance and passes through four-foot wide openings.

Circle No. 105 on reader service card

Right Way Glove Company announces the Jack Nicklaus Training Glove, which keeps the hands working together as a unit to achieve maximum power and control. The glove trains the golfer to keep the right hand fitted over the left in exactly the correct position. Suggested retail price: \$2.95

Circle No. 106 on reader service card

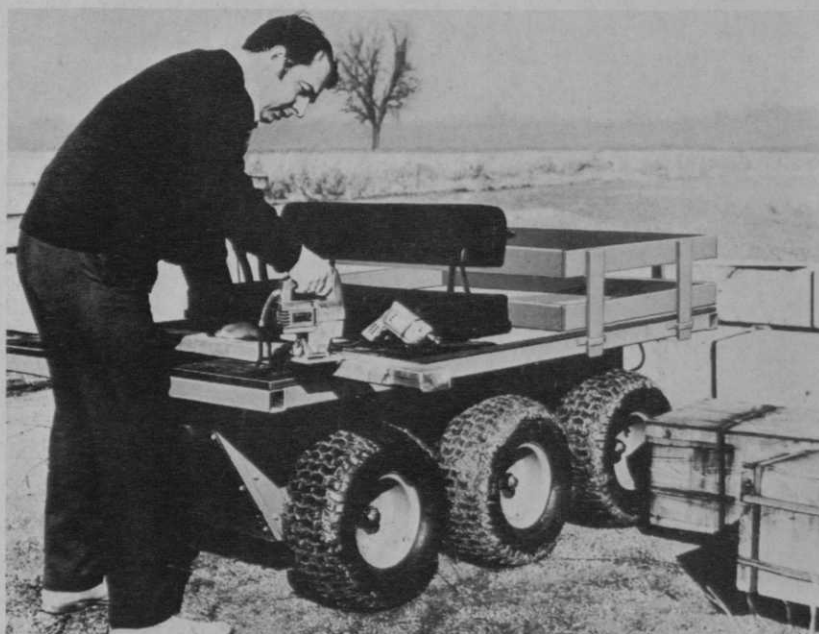
Bemis Company, Inc., has introduced polyethylene drawcord bags that can be used for carrying and storing golf shoes, shagging golf balls and many other utility purposes. Two hundred bags are furnished in a carton that doubles as a self display case. Club name, address and other information can be imprinted on the bags which can be sold individually or used in club promotion.

Circle No. 107 on reader service card



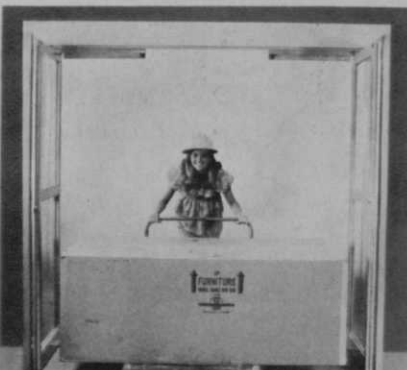
Conwed Corp. announces the Turf Establishment Blanket, a bonded fiber mulch blanket with a rectangular plastic netting laminated to one side. It is designed to be stapled over prepared, seeded soil surfaces susceptible to erosion. The blanket is made of wood fibers bonded together to form a homogenous mat with a water soluble binder, which is not harmful to seed germination and plant growth. Available in five by 200-foot rolls weighing approximately 25 pounds.

Circle No. 108 on reader service card



Pencor, Inc., announces an all terrain vehicle, The Burro. It can carry loads up to a half ton. Equipped with a 200 watt, 110 volt source built into the equipment, it can be a portable power source for power tools. It climbs inclines of 45 degrees and with a twin lever control, it goes forward, reverse and turns in its own length.

Circle No. 109 on reader service card



Stanley Works announces the Auto-Slide 6000 automatic sliding door package, designed to slide, swing open for emergency use, open manually when sliding doors are locked and open to double the normal entrance opening by sliding and stacking all door panels. The automatic door features pneumatic operation; the entire weight of the door is supported by a heavy-duty carrier opening and closing speeds are controlled by a built-in pressure regulator.

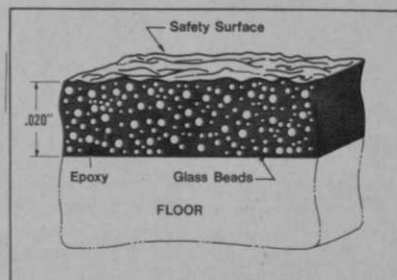
Circle No. 110 on reader service card

Kopper Company, Inc., announces Glasfab for tennis courts. Glasfab serves as a reinforcing membrane between coats of a coal tar pavement sealer to which small amounts of silica sand have been inter-mixed. The coal tar emulsion seals against hairline cracking.

Circle No. 111 on reader service card

Pacific Epoxy Products announced Safety-Deck, a roll-on flooring that can be applied directly on most surfaces, wet or dry. It consists of graded glass beads bonded together with a modified epoxy binder. The surface is highly textured, non-porous and easily cleaned. Resistant to acids, alkalis, fats, greases and solvents, it can be mixed and applied with a roller applicator. Available in pre-mixed cans in a range of six colors.

Circle No. 112 on reader service card



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NEW PRODUCTS

(Continued from page 59)

TeleGolf International, a division of Communication Central Inc., announces a teaching method called "total instruction." The franchised TeleGolf instruction begins with lessons pre-recorded on color film by teacher Bob Toski. The master teaching sessions are followed by personalized instruction with PGA instructors. A feature of the program is the opportunity for the golfer to see himself in action. His swing is recorded on television, then through instant replay the swing and grip can be analyzed.

Circle No. 113 on reader service card

Certain-teed Products Corp. is offering a free brochure illustrating its new Badger trenchless system for installing pipe, conduit and cable. The Badger System equipment forms tunnels through the ground and pulls in or feeds down

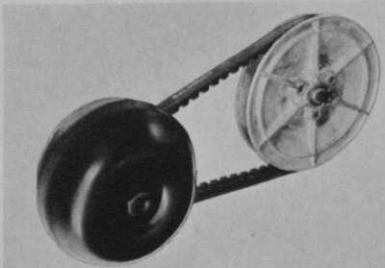
long strings of pipe into the pre-formed tunnel. The Badger Minor trenchless pipe-layer installs pipe in diameters through 15-inches to a bottom depth of five-feet six-inches. The automatic Badger Major equipment can install pipe from the smallest sizes up to 18-inches to a bottom depth of nine feet.

Circle No. 114 on reader service card

Aerocrafts announces a sign designed to counteract slow play on golf courses. Designed for prominent display on golf courses, it lists a number of valuable suggestions to golfers on how to speed up their game. The sign is screen printed in four colors on anodized aluminum. It retails for \$18 each; two for \$35; each additional is \$15.

Circle No. 115 on reader service card

Salsbury Corp. announces the Model 330 Mini-Verter automatic torque converter. The Mini-Verter extends the present line of converters from 45hp down to three hp. This reduced size unit was designed specifically for light horsepower applications, such as minibikes and lightweight sports equipment. A cam actuator mechanism permits the movable sheave on the pulleys to respond to increased torque demands. In this way the engine operates at peak power.



Circle No. 116 on reader service card

American Floor Products Company has released its 1970 catalog featuring mats and treads for safety maintenance. The 16-page catalog features most individual products in full color and includes stair treads, mats, cushion mats, and tiles and safety products.

Circle No. 117 on reader service card

Roll Coater, Inc., has Polytex, a new two-color textured roll coated finish for metal. The finish can be used indoors or out and has a wide variety of end-use applications including farm machinery, mobile (Continued on page 62)

MOTT

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