

GCSAA

The 41st Golf Course Superintendents Assn. of America conference in Houston, Tex., February 8 to 13, will be the largest gathering of turf specialists ever assembled, with attendance expecting to top the 1969 figure of 3,000.

Although Houston may lack some of the glamour of last year's site, Miami Beach, it has a special Texan sparkle all its own and is one of the two fastest growing cities in the United States.

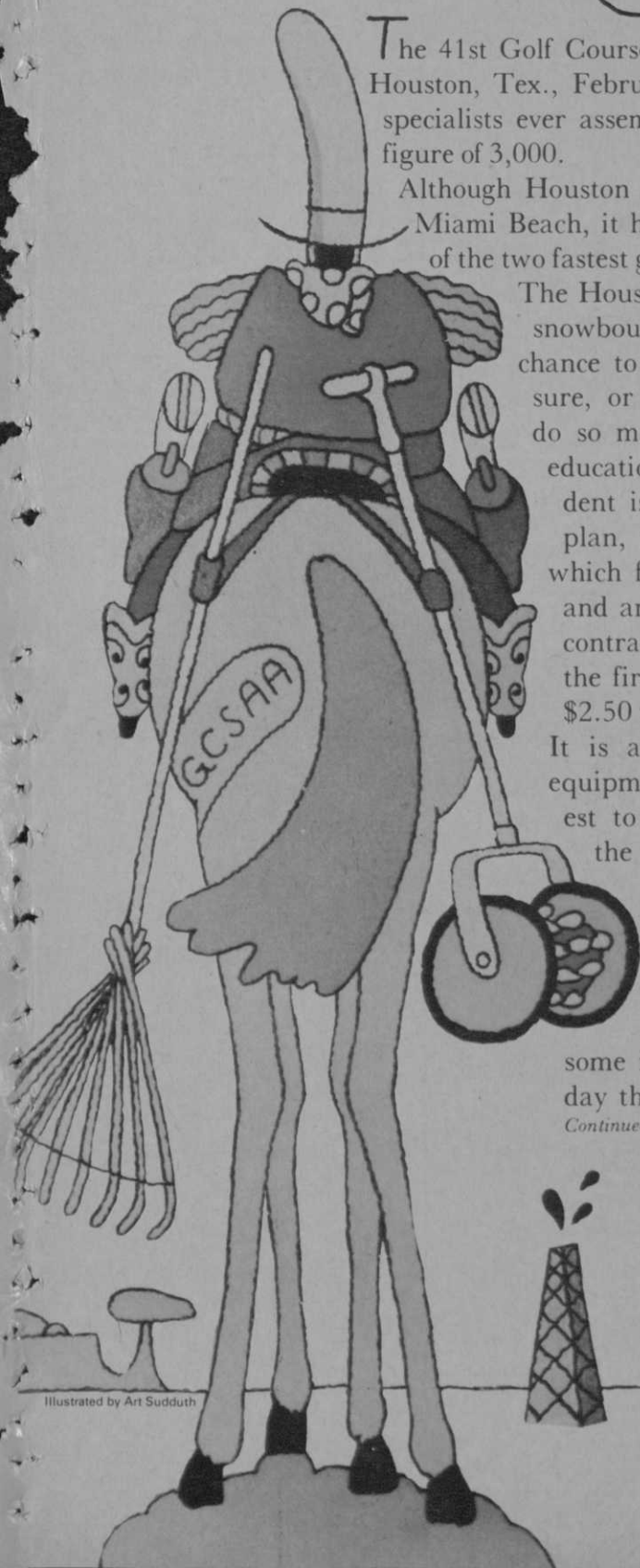
The Houston location will be also a strong attraction for the snowbound turfman of the North, who will welcome the chance to unlimber the clubs and mix business with pleasure, or more accurately, mix vacation with business as do so many golf course superintendents. A glance at the educational program shows that the modern superintendent is operating on a broader and more sophisticated plan, in contrast to the programs of by-gone years, which featured such topics as resodding a putting green and animal versus chemical fertilizer (in 1929). Also, in contrast were the annual dues, \$5 and the room rates at the first conference at the Hotel Sherman in Chicago—\$2.50 to \$3.95 a night.

It is also noteworthy that although the supplies and equipment on display in Houston will be of direct interest to the course superintendent, this was not always the case. The program of 1927 lists exhibits in such areas as sports equipment and fishing gear; clubs and golf balls; refrigeration equipment; playground equipment, chicken manure; shower slippers; and golf and fishing equipment.

Although there may be a chuckle or two over some items, remember this was the start of what is today the greatest show on turf.

—Bill Smart

Continued



Illustrated by Art Sudduth



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continued

The following are highlights of the merchandise that various manufacturers, distributors and representatives will be exhibiting at the PGA show.

The companies appearing on the following pages are those which have indicated to GOLFDOM that they will be at the show; it does not, therefore, represent an official exhibitors listing. An asterisk * following a company's entry indicates that specific details on its product lines were not available by press time.

GOLF AND UTILITY CARS

Club Car, Inc., introduces the four-wheel Carоче, an automotive type electric golf car. The Carоче is powered by a double reduction gear drive transmission. It uses automotive type hydraulic wheel brakes on both rear wheels. Other features include pedal controls, leaf springs, adjustable back support seating and wide track wheels. The Carоче weighs 810 pounds and has a detachable four-bag attachment enabling it to hold up to four people.

The Stevens Utility Car for golf course maintenance is an electrically powered car with a fiberglass body which will not rust, corrode or dent and a lightweight aluminum frame for stability.

Harley Davidson makes the Utilicar line of utility cars in gas-



oline or electric models. The body is of heavy-gauge steel and impact-resistant fiberglass, with a minimum gross carrying capacity of 750 pounds.

Texas Refinery Corp. makes TRC tire seal for golf cars and a complete line of specialized lubricants for golf course equipment.

IRRIGATION EQUIPMENT

Aqua-Dial makes two lines of controllers—the 511 and 523 Controllers and the Ace-11 and Ace-23 Controllers. Both model lines are fully automatic, but differ in features.

In rotary pop-up sprinklers, there is the full-circle Aqua-Dial 13, the part-circle Aqua-Dial 14 and the full-circle Aqua-Dial 15—all are gear driven.

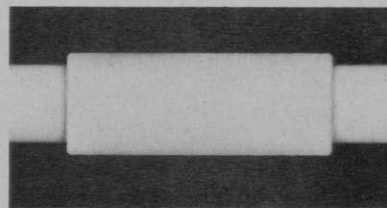
Valves offered are the 5110 valve, an automatic diaphragm valve and the 5136 valve, an electric automatic diaphragm valve.

Buckner Sprinkler makes a complete line of irrigation equipment, including electric controllers, automatic valves and various types of sprinkler heads.

Cast Iron Pipe Research Assn. will offer literature pertaining to cast and ductil cast iron pipe used in irrigation systems, manufactured by members of the association: Alabama Pipe Company, American Cast Iron Pipe Company, Clow Corp., Glamorgan Pipe & Foundry Company, Lone Star Steel Corp., Lynchburg Foundry Company, McWane Cast Iron Pipe Company, Pacific States Cast Iron Pipe Company, United States Pipe & Foundry Company.

Certain-teed Products Corp. introduces Fluid-Tite PVC Twin Gasket coupling in a choice of solvent weld or gasket joint PVC

water piping systems. The coupling has a thick, rugged wall with straight outside diameter.



Certa-Stop inner shoulders automatically stop the pipe in proper position during installation to allow for both thermal expansion and contraction.

Ethyl Corp., Visiqueen Division, will feature white PVC plastic pipe for irrigation.

Febco, Inc., offers a wide range of lawn and turf irrigation equipment. Included are underground lawn sprays and accessories, quick coupling valves, couplers and hose swivels, portable full- and part-cycle sprinklers, rotary pop-up sprinklers, remote control valves, automatic controllers and accessories.

Griswold Controls now offers a modularized irrigation system. The modular system is composed of two basic types of control modules: system and station control modules. System control modules keep time and initiate scheduled irrigation. Station control modules supply electrical power to the valves according to predetermined schedules. System modules initiate irrigation programs while station modules execute irrigation programs.

Hays Mfg. Company offers two series of Marfaid valves (series 3110 and 3112), which have interchangeable parts and are available in seven sizes. Full ported flow-away and large body chamber give maximum flow with minimum pressure drop. The valve closing will not jam on small par-

ticles such as sand and the valves close automatically if electricity fails or the flexing portion of the diaphragm ruptures.

Irrigation Consultants, Inc.*

Moody Sprinkler Company, Inc., features its line of automatic irrigation controllers and valves. The model M-E-10P controller is used for controlling the irrigation of a golf course and lists for \$296.50.

Rain Bird Sprinkler Mfg. Company makes a full line of irrigation equipment, including automatic equipment controllers and valves, rotors, spray heads and impact sprinklers.

Rain-O-Mat Sprinklers, Inc., will have a new 1 1/4 inch riser rotary pop-up golf course sprinkler designed to take up to one-half inch nozzle.

Skinner Irrigation Company introduces a new concept in central control for automatic irrigation, which will include a new central control panel. The equipment will not be a stock item, but will be custom made.

Smith Blair makes the 342 Plastic Saddle for plastic pipe featuring a polypropylene body with stainless steel reinforcing cap to insure permanent thread fit. Installation is permanent and simple and does not require the use of bonding agents or special tools.

Thompson Turf Irrigation Equipment offers sprinklers for every need—surface, shrubbery, heavy duty and pop-up models.

Toro Mfg. Corp. offers the Vari-Time Central Control System. One Controller signals green and tee satellites simultaneously. An-

other starts nine fairway satellites; a third starts nine second fairway satellites. Once started, a satellite will operate independently of the others. The Vari-Time Central Control has a 14-day program with a 24-hour dial on-off switch which can cancel a watering schedule. Suggested list price: \$195.

The eleven-station Vari-Time Satellite Controller has variable



timing—zero to nine minutes or zero to 30 minutes—manual or semi-automatic over-ride and hydraulic or electric. Suggested retail price: \$275.

Weather-matic Division, Telsco Industries, offers a complete line of lawn sprinkler systems. Included in the lawn spray head line are the Lawnmaster, featuring two-inch pop-up action and nylon adjustable riser; the Super-Pop, which is moderately priced and features two-inch pop-up action (does not have adjustable riser), and the economical Excel with 1 1/8-inch pop-up action. All have cast bronze bodies.

The Rain-Stat automatically turns the sprinkler system off when it rains, then permits the controller to resume normal operation when needed.

MAINTENANCE VEHICLES

Bruce Mfg. Corp. offers Pug utility vehicles. Pug comes in either front wheel or four-wheel drive. The four-wheel drive can be added to the front wheel drive.

Bunton Company introduces the

4-Way Edge-Trimmer. It edges with the vertical blade and trims with the horizontal blade at the same time. A single, handle-mounted control lever both engages the vertical blade and selects the cutting depth.

The Champion Company makes the Doo-All Roll-Dump Trailers with Terra-Tires. The Model 05130 is available with hoppers in three-fourths or one cubic yard capacities which can carry up to 5,000 pound loads. Model 12540, equipped with a 1-1/2 or two cubic yard hopper handles loads of up to 10,000 pounds.

Cony America offers three vehicles in its 360 line—the wide panel van, the wide truck with fixed or drop side and the topless model. All 360s have horizontal opposed, two cylinder gasoline engine, four forward speeds and one reverse.

Cushman Motors makes the four-wheel Turf-Truckster, developed to cope with turf application requirements. It carries driver and passenger, dumps, sprays, tows fairway gang mowers and hauls equipment. The Turf-Truckster features an air-cooled 18hp engine and has a 1,000 pound payload capacity.



The three-wheel Turf-Truckster has a wide box body and comes with 12 or 18hp engine.

In the 1970 model gasoline-powered Turf Minute-Miser, the front suspension has been changed to trailing-link design with two coil springs.

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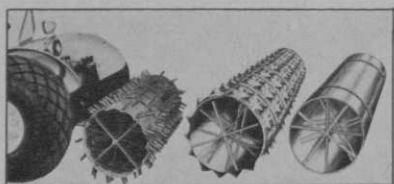
*Information was not available at press time

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Cyclone Seeder Company, Inc., offers the Cyclone line of broadcast spreading equipment including hand-push, and hand-crank machines and tractor-pull and truck or tractor-mounted PTO and electric machines.

Dedoes Industries, Inc., offers the Dedoes Turf Maintenance System which permits any standard tractor to do aerating, slicing and rolling operations. The



system consists of a conversion unit, which utilizes the tractor's hydraulic system, plus a turf aerating cylinder, a turf slicing cylinder and a six-foot turf roller.

Excel Industries, Inc., introduces its new Tilt Deck Trailer with a three-inch box-steel frame, four-ply tires, ball-type hitch with safety chain, 2,000 pound capacity, heavy-duty 11 and 14 gauge ramps hinged to raise automatically and weighing 420 pounds.

E-Z-Go Car Div., Textron, Inc., offers the GT-7 Turf Truck with a gasoline engine and automo-



tive steering. The GT-7 features double seats with back rests, 950 by 86-ply Terra-Tires, dump body (corrosive resistant), trailer

hitch, dual headlights, 35 amp alternator, ammeter, oil pressure indicator, speedometer, heavy-duty shock absorbers, automotive hydraulic internal expanding brakes, and an 18hp Onan engine. Suggested retail: \$1,788.

E-Z Rake, Inc., offers vacuums, thatchers and rakes. Two vacuum models are available: Model 40 fits larger tractors and Model 30 has its own cart and bag.

Ford Motor Company will display the 4000 Special tractor equipped with a rotary cutter. The 4000 Special has a low silhouette, light weight and a short wheel base. The 4000 is said to be easy-to-get-on, easy-to-get-off and has excellent maneuverability. The 4000 Special offers 52 PTO-horsepower, sealed brakes, independent PTO, 14.9 by 28-inch rear wheels, plus standard power adjusted rear wheels, deluxe seat and differential lock.

Giant-Vac Mfg. Inc., produces a full line of heavy-duty Giant-Vacs, blowers and thatchers for all maintenance requirements. Giant-Vac offers a PTO driven power unit which performs many functions. Propelled by a standard tractor, this unit with available accessories can be operated as a double headed blower, cleaning many acres per hour. Attachments are available which convert the Blower to the Truck Loader. This PTO unit is readily changed to a six-foot vacuum machine. The Thatcher can be added to the vacuum head. Horsepower units range from 12 to 65. Hand operated vacuums range from five to 10hp and Giant-Blos range from five to 65hp.

Hahn Lawn and Turf Products offers the GT-700 gear-driven and hydrostatic drive tractors; Pow-R-Pro Deluxe 8-6 rotary mowers with automatic choke, engine cover and fold-down handle; Super 10-6 rotary

mowers with a 3-1/2hp engine and a belt-driven blade on some models, steel housing rotary mowers with direct drive; 21-Inch High wheel rotary mowers with belt-driven blade; rotary tillers with vertical shaft or horizontal shaft, 30-inch LTD 500 riding mowers with gear transaxle drive or the 26-Inch with friction drive transmission, cast iron frame, self-propelled reel mowers; Aerifiers and verti-cutters, the Aeri-Vac turfgrass vacuum and the Flex-A-Matic 140 mower.

In the West Point line there are the Master Verti-Cut with Catch-Master, the VC-20 Verti-Cut mower with Catcher and the VC-5 Verti-Cut. Also by West Point is the Verifier puncher, the Grasslan Aerifier, the JR Aerifier, the Aeri-Spiker, the three gang Power Drag for greens matting, the Big Boy S-4000 spreader and Aerifier spoons, blades and tines.

International Harvester Company introduces its International Cub Cadet model 127 all purpose lawn and garden tractor for which 60 attachments are available. Also new is the Sandrake for golf course use.

Jacobsen Mfg. Company makes the Turf King mower, which has three power-driven units fully ar-



ticulated to follow uneven ground contours. Featuring variable forward speeds plus reverse, it allows close work and trimming.

Kohler Company makes 10hp, 12hp and 14hp engines that have identical dimensions. Since the

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three engines are interchangeable, manufacturers can design one piece of equipment and offer it with a choice of horsepower.

Kut-Kwick Corp. offers Models J, H, EDV and HR commercial mowing equipment. The Models J feature the JV920-36-inch cut, J900-31-inch cut and the JVOM 920-40-inch cut mowers. All are rotary, extra heavy duty type with self-propelled forward and reverse mowers.

Models H include the H920-48-inch cut without front cutting, oil bath gear drive, steel deck, five forward speeds, neutral and reverse, the H920 36-inch cut and the H1250-60-inch cut made for large area mowing.

Models EDV offered are the EVD 920 36-inch L walking model or with rider and the EDV 920 36-inch with skip deck.

Models HR are the H920-48RE 48-inch cut with steering wheel control, the H920-36R 36-inch cut also with steering wheel control and the H1250-60RE 60-inch cut for large area mowing.

Lely South West, Inc., offers a complete line of spreaders. Standard features include the forced feeding system with ejector disk and an adjustable spread pattern of up to 52 feet wide. There is a choice of spread patterns.

Lely also manufactures the Buryvator for rotary cultivation plus burying capabilities. This Buryvating action is achieved by rotor and underhood spring tines which deflect large lumps into the bottom and sieve fine soil to cover the lumps.

Lindig Mfg. Corp. has the KT-12 Shredder/Screeners which combines low level feed, patented shredding and high discharge into one compact Tractor-Fed unit.

The KT-12, discharges directly into topdresser, trailer, utility vehicle or soil cart. Feeding, shredding, elevating, screening and loading are done in one mechanized operation.

Also new is the line of Porta-Screeners which include sizes for varying applications, ranging from small manual operations to medium volume mechanized applications.

Locke Mfg. Company, Inc., makes a reel mower designed without forward casters or gauging wheels to knock down uncut grass. The mower will turn sharply without raising the cutter units or matting the grass. Counterbalancing of cutter units permits them to follow the natural contours of an undulating lawn.

The MS Series 22-, 24- and 26-inch cut rotary mowers are available in push or self-propelled unit. The MP-5, which also comes in push or self-propelled, is a highwheeler that permits operator to disengage the mower for easier engine starting.

Massey Ferguson, Inc., will show the MF 20 Turf Tractor and MF 40 Tractor Loader. The MF 20 features low center of gravity, gas or diesel power, standard or manual shuttle transmission and a choice of dual or high-flotation rear tires and wheels. The MF 40 features gas or diesel engine, manual shuttle or instant reverse transmission.

Mott Corp. makes the Hammer Knife safety flail mowers which mow, shred weeds, mulch leaves and renovate. There is a heavy-duty three-point hitch mower in 60- or 72-inch models; the Hammer-Knife mowers with easy maneuverability either walking or riding; the Model 88 safety mower; the powered walk-behind 18A and International tractors.

National Mower Company makes the 68 Inch Triplex. The

tractor is made of welded tubular steel. All gears are machined from solid steel.

The 84 Inch Triplex has a tractor engine of Wisconsin AENL 9.2hp or Briggs & Stratton 10hp. The mowers are three 30-inch units power driven and free floating to follow ground contours.

Princeton Turf Farms, Inc., introduces the Princeton Harvester which cuts, sizes, palletizes and unloads. The Harvester, which is operated by three men, rolls on large flotation tires.

Rogers Mfg. Company, subsidiary of Jacobsen, offers the Model 12 Truck, featuring a four by four-foot all-steel, low level bed with a 30-inch ramp load tailgate, rugged all-welded steel construction, 12 or 14hp engine, heavy-



duty four-speed transmission, and carries up to 1,000 pounds.

The Model 720 Sweeper covers a five-foot swath, holds five cubic feet of trash.

The 720E has its own 12hp engine and universal hitch, and the deluxe 720-E-HL features hydraulic lift dumping. The Model 154 Riding Sweeper gathers wet or dry grass clippings and has a 48-inch sweeping width.

The Model 40 Blower has a 250 mph blast, a three-point hitch, chain driven 36-inch impeller and all-steel welded frame.

The Model 522 Aero-Spiker

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spikes and aerates, allowing air, moisture and fertilizer into the soil. The four hp engine allows operating speed sufficient to cover over 29,000 square feet per hour.

Aero Blades come in four models—512, 510 which handles vertical cutting, spiking, deep shatter aerification, and both models remove thatch, renovate, prepare seed beds and relieve compaction; 507 standard unit with .032 gauge; two pointed blades with three-fourths inch spacing, and the 504, a self powered four or six hp verticle mower.

The Aero-Blade 548 removes thatch, aerates, renovates, tills plants, spikes and prepares seed beds. It has a three-point hitch, PTO drive and four-foot cutting width.

Models 590 and 595 Aerators are built in sections with two wheels per contour unit. Equipped with either full length or individual weight trays, these machines permit contour following on uneven ground, plus full machine weight on hard packed areas.

Roseman Mower Corp. offers the seven-gang Hydraulic Transport Mower and the Hydraulic Transport Lo-Cut mower. The Hydraulic Transport Lo-Cut has



a 10 blade, high-speed for mowing the new grass strains that require low cutting heights of three-eighths inches with a one-half inch frequency of cut. Two rakes, the Tiller Rake, on which 32 spring-loaded thatching tines are spaced at about four-inch in-

tervals to prevent raking or build-up of debris, are also available.

Royer Foundry & Machine Company offers two new shredders, the 180 and the Superintendent 120. The 180 combines shredding, blending, aerating and cleaning in one action. The Su-



perintendent 120, a low-priced model, features feed conveyor, automatic and continuous trash removal and discharge.

Ryan Turf Equipment offers turf-care products for all needs. Many items are available as rental units. These include Ren-O-Thin power rake, Motoraire self-propelled turf aerator, Lawnaire self-propelled and tractor-drawn lawn turf aerators and JR Sod Cutter.

Sand Master Div.'s sand separators are said to meet three specific needs: reduction of high-wear areas, economy in application and adaptability to all sand removal situations. Available in three different types—submersible, inline and industrial, Sand Master is capable of removing up to 95 per cent (by weight) of all sands up to 200 mesh (.0029 inches or 74 microns).

Sod Master Company, a subsidiary of Jacobsen, offers Mete-R-Matic, a powered top dresser. Also available is the Sub-Air, which tills sub-soil without punching or spooning.

The Bantam Sod Cutter is a compact unit that cuts sod at the rate of 150 feet per minute.

The Edge-R-Rite offers a new edging method to remove a complete sod strip at one time.

Toro Mfg. Company, in addition to its irrigation equipment (see p. 73), will be showing its extensive line of institutional mowing equipment.*

Turf Vac Company introduces the new Model 70 4 1/2-foot, self-propelled Turf Vac sweeper. Also new are the PTO drives for various Fairway Master Models.

In addition Turf Vac also offers Blowers and self-powered units.

The Vandermolen Corp. offers the Diadem line of fertilizer spreaders and seeders, which features a uniform spread pattern. Model K 65A holds about 800 pounds of granular fertilizer, Model K 600 holds 1,500 pounds and Model GK-15, 2,200 pounds.

Viking Mfg. Company, Div. of Allied Farm Equipment, Inc., offers the Roller Blade one-tool tractor attachment for overseeding, scarifying, fertilizing, leveling, aerating, slicing and rolling.

Warren's Turf Nursery imports from Ransomes Sims & Jefferies, Ltd., England, a heavy-duty Hydraulic Power 5/7 Gang Mower for cutting large areas of grass.



This is suitable for attaching to the Ford 3000 and Ferguson 135 range of tractors. Also in the line

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are the Gang Mowers, the Sport-cutter (a 10-unit mower) and the Magna (a 12-unit mower) for cutting grass up to five inches and eight inches high, respectively. The Certes 16-inch and the 20-inch Auto-Certes are both hand putting mowers.

York Modern Corp. introduces its Professional, Model Pro rake, which allows the rake angle to be changed hydraulically from the tractor seat to an infinite number of rake angle positions,

John Bean Div., FMC Corp., offers the Rotocast air spraying attachment mounted in conjunction with hydraulic sprayer featuring remote hydraulic controls and controlled pattern and direction.

The Turfkeeper, models 1010-G and 1010-GE, is a compact, versatile golf course sprayer designed for use with utility-type vehicles. The 1010-G has a 100-gallon fiberglass tank, a lightweight, three-section 15-foot boom with five-foot fold-away wings, 18 nozzles spaced at 10 inches. It requires 860 rpm on the power take-off to operate the Royalette Pump—10 gallons per minute at up to 500 pounds pressure; V-Belt PTO drive with guard; and a Mechanical Agitator to keep the spray solution mixed. The 1010-GE offers an alternative choice of a completely self-contained golf course sprayer with a gasoline engine drive.

TURF PRODUCTS, SPRAYERS

Agrico Chemical Company makes turf products.*

Aquatrols Corp. of America offers Aqua-Gro, Aqua-T and Aqua-Gro Granular soil wetting

*Information was not available at press time

agents and Stoma-Seal chemical control for Wilt.

Borden Chemical Inc., announces Greens & Fairways NO PHOS 15-0-15, which is designed for *Poa annua* control.

Greens & Fairways 10-3-7 Bug Knocker contains Chlordane for insect control plus 1 per cent iron.

The Broyhill Company has its 960 Series of high pressure turf and industrial sprayers with a tank capacity of 230 or 300 gallons. The pumping system contains a four piston 10 gpm at 500 psi driven by nine hp engine.

The 1660 Spra-Mate Series features a 150-gallon tank with an epoxy lining. The trailer is a low silhouette with 9.50 by 8 inch flotation tires or with standard 14-inch rims.

Certified Laboratories introduces Turftec W/A, which kills and controls snow mold, dollar spot, pink patch, bluegrass blight.

Liquid chemicals include fertilizers: Ever-Green and Lawn-Green; chelated iron: Soil-I-Ron; soil penetrant; Deep Penetrant; weed killers: C-100, AS-90, C-300, C-795; crabgrass killer: C-400; soil sterilant: AS-655; fungicide: L.T.F.; insecticide: BP-977 and foliage spray: All-Safe.

In the Comet-II System, products include Com-Gro concentrated liquid plant food; Com-Pen penetrating chemical concentrate; Com-Kill weed killer; Neutra-Plus micronutrient supplement; Aptrex soil sterilant; Multi-Cide, for exceptional municipal insect control; Secti-Cide insecticide and the Comet II.

Chanderlin Seed Company, Inc.*

Chemagro Corp. offers Dyrene turf fungicide, which controls blight, leaf spot, melting-out, copper spot, rust, dollar spot, brown patch and snow mold for two weeks or longer and Dexon turf

fungicide for the control of pythium cotton blight.

Chemical Systems Corp.*

W.A. Cleary Corp. makes PM-AS herbicide-fungicide for the prevention and control of crabgrass and other turf diseases. Methar products, used for killing crabgrass, are available in liquid and powder forms. Cleary also puts out Spotrete, a dry 75 per cent Thiram fungicide, Caddy, a liquid cadmium fungicide and Thimer, a dry, broad spectrum fungicide.

Cloro-Spray Corp. features Ferro-Spray Plus, a high analysis liquid fertilizer combined with an iron chelate solution, which is soluble in cold water and will remain stable. Price: \$3.95 a gallon. Dew Down Xtra organic wetting agent contains chlorophyll, enabling plants to carry on photosynthesis.

Diamond Shamrock Chemical Company offers Dacthal, a pre-emergence weed control product for crabgrass and *Poa annua*, available as a wettable powder and a 5 per cent granule. Daconil 2787 is a broad spectrum non-mercurial fungicide. Dacamine is a proprietary postemergence weed control herbicide for controlling thistles, knotweed, dandelions and other hard to kill broadleaf weeds. Dacagin spray adjuvant is used with herbicides for minimizing drift control when spraying around shrubs and ornamentals.

Doggett Fison Company offers the Hydro-Matic System which fertilizes while watering. The system consists of a water sensing device that precisely measures each gallon of water pumped from the main well pump. This measurement is carried electronically to the Translator which directs the feed control pump to auto-

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matically inject a pre-set ration of fertilizer solution in direct proportion to the water flow.

E. I. DuPont de Nemours & Company, Inc., introduces two fungicides—Tersan LSR and Tersan SP. Tersan LSR is a non-mercurial turf fungicide for the



prevention and control of large brown patch, rust and leaf spot. Tersan SP is also a non-mercurial fungicide, but for the control of snow mold and pythium.

Eagle Picher makes Dialoam, a turf conditioner composed of a granular diatomite material.

Elanco Products Company makes Balan Granular, a pre-emergence weed killer, which is said to control *Poa annua*, crab-



grass and other annual weed grasses from germinating and growing.

Hercules Inc., introduces Azak, a crabgrass control designed for pre-emergence application on established lawn and other turf areas.

Powder Blue in fine, insoluble powder form is a slow-release nitrogen fertilizer for turf.

Nitroform fertilizer combines the proper amounts of ureas and formaldehyde for use on turf and ornamentals.

Hudson Mfg. Company offers the 200-gallon Peerless Power Sprayer with stainless steel tank and flotation tires. A wide range of accessories is available.

J.M. Huber Corp.*

Kem Mfg. Corp. offers a complete line of turf maintenance chemicals featuring the "one shot" turf treatment containing nutrients, micro-nutrients and soil conditioners in a stable homogenized blend.

Norkem 100, 200 and 300 are compatible chemicals that can be blended to rate desired. In addition, there is a selection of herbicides for weed control, grass control and soil sterilization.

Also developed by Kem is a line of preventative maintenance materials as well as protective coatings for all equipment used by superintendents.

Mallinckrodt Chemical Works introduces the Spray-Hawk mobile turf sprayer with positive on-off spray with pistol grip control. No-drip nozzles automatically close when pressure falls below three psi. Made of corrosion-re-

sistant steel tubing, it cuts misting and wind drift to a minimum.

Also offered are turf chemicals: Kroma-Chlor broad-spectrum turf fungicide with mercury, Ultra-Chlor broad spectrum fungicide without a color ingredient, Kromad broad-spectrum fungicide, Calo-Chlor mercuric-mercurous chloride fungicide, Calo-Gran dry granular mercurial fungicide, Cadminate cadmium fungicide, Thiramad-Plus fungicide combining 75 per cent thiram component and 10 per cent iron sulfate, Thiramad 75 per cent thiram fungicide, Phenmad 10 per cent PMA organic mercurial fungicide, Spring-Bak for control of spring dead spot of bermudagrass.

Millburn Peat Company will exhibit its peat moss for new green construction, top dressing and landscaping.

Milwaukee Sewerage Commission offers Milorganite Fertilizer, a standard organic fertilizer for golf courses.

The F. E. Myers & Bros. Company introduces the model series 7020 turf sprayers. This series consists of six trailer models with electric start engines or power take-off drive. Models are available in 300 to 400 and 500 gallon tanks with 20 gpm Myers spray pumps or the optional 10 gmp piston pump for pressure ranges to 800 psi.

Additionally, Myers will show for the first time, Mity-Mist PTO air sprayer designed for multiple chemical applications in turf club maintenance.

National Chemsearch Corp. introduces its new Computerized Soil Analysis Program designed to provide fertilizing tailored to specific turf and soil needs. Soil analysis results from its agronomist are fed into National Chemsearch's IBM System 360 Computer to determine specific turf

*Information was not available at press time

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requirements and assure more dramatic results with whatever labor and time a turf care program now has available.

In addition, National Chemsearch offers a complete line of liquid fertilizers, herbicides, fungicides, penetrants and supplementary fertilizers.

Northrup King & Co.*

Occidental Chemical Company, makers of turf products and custom-formulated fertilizers, introduces Zipp, a turf fertilizer using polyphosphate. It also contains chelated iron and zinc plus sulphur.

**Information was not available at press time*

Oil Dri Corp. of America introduces Terra Green Special Top Dressing in addition to its Terra Green Soil Conditioner.

Pen-Gro Sales Company*

Plant Marvel Laboratories makes 100 per cent water soluble and liquid fertilizers.

Rhodia, Inc., Chipman Div., has a wide variety of dry and liquid products for use on golf courses and other turf areas. Chipco products include fungicides, insecticides, weed killers and wetting agents.

Rogers Mfg. Company, subsidiary of Jacobsen, offers the Sprayer, featuring a 130-gallon tank, high pressure centrifugal pump powered by a shock mounted five hp engine. The 15-foot spray boom comes equipped with 18 spray nozzle assemblies.

Scotts introduces four new Polyform fertilizers—ProTurf Fertilizer for balanced feeding, Nitrogen Fertilizer for an all-nitrogen feeding, Nitrogen Plus Plant-Available Iron for iron-deficient soils and Super Fertilizer for extra-long lasting feeding. Other Pro-Turf products include weed controls, insecticides, fungicides and seeds. In addition, Scotts also makes the Model 100 and Rotary type spreaders and the Silent Scotts handmower.

Smithco, Inc., introduces the Spray Mate spray outfit for spraying greens and tees and other special turfgrass areas. It consists of a 65-gallon tank, a Hypro pump capable of developing 500 pounds pressure, a nozzle, hose and 15-foot boom. It is completely self contained on four wheels so that it can be pushed into the back of the

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 <p>GOLF BALL DISPENSERS</p>	 <p>U.S. RANGE BALLS</p>  <p>"SOLID" RANGE BALLS</p>	 <p>JUNIOR BALL WASHER</p>	 <p>GOLF BALL DISPLAY RACK</p>
 <p>JUNIOR GOLF BALL PICKER</p>	<p align="center">Buy The BEST Buy WITTEK</p> <p>World's largest manufacturer and distributor of the finest and most complete assortment of equipment and supplies for Golf Driving Ranges (indoor and outdoor), Golf Courses, Par 3 Golf Courses and for Resale.</p> <p align="center">Write for our Fully Illustrated 4-Color 1970 Catalog</p> <p align="center">Wittek Golf Range Supply Co., Inc. 3650 Avondale Chicago, Ill. 60618</p>		 <p>DISPLAY FIXTURES</p>
 <p>GOLF BALL ASH TRAY</p>  <p>UMBRELLA STAND</p>			

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Red Rider by one man. List price is \$750.

The Red Rider for 1970 has been completely engineered so that maintenance will be minimal.

Stauffer Chemical Company offers the following crop protection chemicals: Aspon, to control chinch bugs on lawns and turf; Betasan, for pre-emergence control of crabgrass and annual bluegrass; Eptam, for the selective control of several hard-to-kill perennial weeds, annual grasses and many annual broadleaf weeds; Trithion, a multi-purpose insecticide for lawns and turf; Vapam, a soil fumigant which controls weeds, weed seed and certain soil-borne diseases.

Swift Agricultural Chemical Corp. makes Par-Ex Supreme, a complete plant food for greens, tees and fairways which contains a patented source of nitrogen.

Swift also offers a complete line of Par-Ex pro turfgrass products and services for professionals.

Thuron Sprayer Mfg. Company introduces the Thuron Brama-25 for 1970. It has a 25 gpm at 800 psi featuring the Brahma-25 pump. It has a 300-gallon fiberglass tank with mechanical agitation and is powered by a balanced Wisconsin TJD, 18hp engine or tractor PTO.

Also new is the Thuron Super Lark, a 10 gpm at 400 psi with five hp engine and 110-gallon fiberglass tank with mechanical agitation. Easily loaded and carried by two men and fits all trucksters, trucks and pickups, it is available with 16-foot swing-away spray boom.

The Thuron Hawk is a 10 gpm at 500 psi with the Eagle-10 pump.

Tuco, Div. of The Upjohn Company, manufactures Acti-dione turf fungicides. The Acti-dione line of broad spectrum fungicides is recommended for the prevention and control of most turf diseases on bentgrass, Kentucky and Merion bluegrasses, fescues, bermudagrass and St. Augustine-grass.

USS Agri-Chemicals offers a complete line of Vertagreen turf foods and Vertagard turf protection chemicals. For tees and greens, Vertagreen offers Tee Green and Ureaform, for fairways there is Vertagreen Tournament Plus, Tournament and Weed & Feed, for special purposes there is Vertagreen fertilizer.

In the Vertagard line there are herbicides—MCPP, MCPP/2, 4-D, 2, 4-D, 4 Lb. Amine, Betasan 4EC and Betasan 12.5%; fungicides—Fore, Thiram-PMA, Liquid Cadmium, Mercurial Turf Fungicide (granular), Mercurial Turf Fungicide (wetable powder), Thiram W.P. 75 and PMA 10%; insecticides—Chlordane 8.0 E.C. (liquid), Chlordane 25% (granular) and Malathion 5 E.C.

In addition, there is the Vertagreen Rotary Spreader, made of a rust-proof stainless steel control wire, which is said to spread evenly without having to follow wheel marks or other guides.

Velsicol Chemical Corp. introduces two products—Banvel 4S for killing deep-rooted weeds and Banvel + 2, 4-D, which is said to control broadleaf weeds in turf with one application. Fungicides made by Velsicol include 2-1, Memmi .8EC, Thiram-PMA, Thiram 75 and PMA 10.

Verde Lawn, Inc.*

Vineland Chemical Sales Corp. offers a problem solver chart listing the type of turf problem and the turf product to use in order to solve the problem. Selected products include Dal-E-Rad, Super

Dal-E-Rad selective dallis grass destroyers, Vi-Par herbicide for control of broadleaf weeds in turf fairways and lawns, Thiram-M, a broad spectrum fungicide, and Vichem Green, which colors lawns a rich natural green.

Warren's Turf Nursery offers A-20 bluegrass. This stiff bluegrass is resistant to rust and striped smut and can be used for tees, greens and fairways. Available in sod or plugs.

ACCESSORIES

Container Development Corp.'s Lewis Line offers a wide selection of tee and green equipment. For ball cleaning, there are four models: the GF-68 Water Boy; the GF-52 deluxe washer with 36 square inches of nylon brushes; the compact GF-5 and GF-6 or GF-7, the Old Stanby. Lewis also makes brightly colored flags for every purpose; fluorescent poles, which can help the golfer spot the cup from 150 years out; cup cutters, the Chamfered Pole and cup, which can be used in heavy winds; practice tee and green markers in four colors; lightweight rakes; the Bulldog cleat cleaner; and the fiberglass Tee Marx.

Foley Mfg. Company offers the Rotary Mower Blade Grinder (model 398) featuring a blade balancer. It is designed to provide hollow ground cutting edges on all rotary mower blades. Equipped with an electric motor, it has sealed ball-bearing, produces one-third hp and operates at 3450rpm. Price: \$105, with motor. The Lawn Mower Grinder (model 388) performs all grinding operations necessary for reel mower maintenance without dismantling mowers. Price: \$498.50, with motor. The Modern Lapping Ma-

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**Information was not available at press time*



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chine (model 365) restores fast, even cutting to all reel type power and push mowers without removal of bed knife or reel blades. Price: \$100, with motor.

Fore-Par Mfg. Company makes golf course equipment that is durable and never needs to be painted. The flags are made of double-ply nylon, Indian Head cotton and vinyl-coated fluorescent nylon.

Par Aide Products Company makes accessories.*

Standard Mfg. Company recently developed SparKleen, the all-weather, golf ball cleaner.

In addition, there is the new Standard Console which cleans your golf ball and removes excess mud and grass from your spikes at a spot on the tee.

Also available is the Porta-Span pedestrian bridge, a pre-drilled and pre-finished unit that can be assembled in two hours.

OTHER

Bankers National Life Insurance Company offers officially endorsed pension and retirement plans to members of GCSAA.

Contours, Inc.*

Monsanto-Astroturf plans to build an AstroTurf golf tee. The underconstruction has a sand base over which the nylon AstroTurf is placed. A sharp tee can be put through the AstroTurf which comes in a standard width of 15 feet.

Mr. Chain Div. of M-R Products, Inc.*

Yazoo of Texas, Inc.*

*Information was not available at press time

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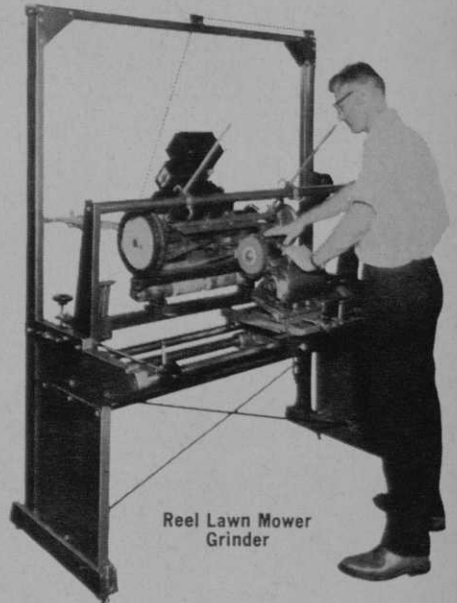
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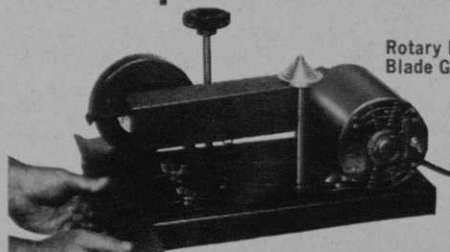


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