**GOOD GREENS AND TEES ALL SEASON**

Experts all over the country are finding green and tee troubles stem from hard packing.

Bent roots must have oxygen and they can't get it thru a hard, fine packed top layer.

The answer is the use of a uniform coarse sand that is clean and free from hard packing fines. Spike tooth the green, clean, apply uniform coarse sand and drag.

We'll ship anywhere — bagged or bulk

**NORTHERN GRAVEL COMPANY**

407 East Front St. Muscatine, Iowa
BALLAD OF THE BIG STRONG PROS
(An earful of close-up on the boys at the PGA National course)
Reported by HARRIETTE W. CURTIN
(who is the ever-loving wife of Joe Curtin, professional at Indian Hill Country Club, Newington, Conn., and who tenderly dedicates her epic to the healthy merry and very active self-proclaimed invalids.)

There's winter of rest for the worn, weary pro
At Dunedin fair on the Gulf Mexico
Where the moss-draped trees and the tall palms sway
And the pro after summer can joyously play.

In the northland he labors at home club toil
On tee and course where a chop would broil.
There his every aim is his members' fun;
No play for him 'til his work is done.

Then comes welcome winter down Dunedin way
Where I listen to him, hoping he'll say
That he's found the secret to make my golf great,
But that I've not heard, most sad to relate.

Each gorgeous morn each relaxing brother
Will come to the club and all to each other
Will recite a long list of pitiful ills,
Too bad for a surgeon, too bad for pills.

An athlete confesses in accents forlorn
"I'm not very fit this beautiful morn,
"Painful bursitis is killing my shoulder,
"It really is hell when a fellow gets older."

Then the keen competition really gets hot
And each pro will relate the ills that he's got:
"I've phlebitis real bad in my only good leg;"
"Each finger I grip with is merely a peg."

"I'm woefully ailing from a horrible hook;"
And all other maladies found in the book;
Slichtis, topitis, missitis, rhinitis, arthritis,
Shankitis, neuritis, St. Vitus, putitus!

Through the medical catalog I hear them cry
And I wonder why they don't lie down and die.
Yes, and so help me, that's just how it goes
As they moan of themselves as the broken-down pros.

But hold, my good friend, shed not your hot tears
For these sportsmen famed, these poor aching dears,
Feast and they sing and gay stories they tell
And play their sick rounds remarkably well.

All summer long no pains have they had
But in winter at rest they get illness bad;
All are seven aches up on each other one
And enjoying themselves in the Florida sun.

SOIL CONDITIONER SOLVES
(Continued from Page 44)
good structure and porosity of this soil were stabilized.

Meanwhile, we aerified the green, using plug-type aerifier with hollow tines. Aerifying in two directions we put a ½-in. hole, 4 in. deep, every 8 in. all over green.

The soil treated with chemical conditioner was then applied to the green at the rate of one cubic yard per 5000 sq. ft. and matted in with a commercial metal foot-scraper mat so all "aerified" holes were well filled with treated soil.

In practice we found that this procedure actually entailed less labor than the older methods in which we had prepared and transported mixtures of soil, sand, peat, manure and other additives.

Improvement in 60 Days
Watering and fertilizing were then carried out regularly, as the green demanded, based on periodical soil tests.
What happened?
By September the verdict was in. In just 60 days grass roots had improved noticeably, and not just in the holes made by aeration. They had grown down below the compacted area and were spreading out. Water infiltration was visibly improved; standing water was no longer a playing hazard. Movement of fertilizer, with water, was markedly increased.

And I have since learned that scientists at Ohio State University earlier proved that fertilizer benefits are greatly increased in treated soil. The Ohio State scientists, in replicated tests, have shown that fertilizer benefits are sharply reduced in compacted soil. The fact is that fertilizing compacted soil is often a relative waste of money.

Time and labor demands on the treated green were much less than on other greens, because more water could be applied at one time—and gotten into the root growth zone of the soil. Thus, deeper root growth was encouraged.

These improvements were so striking that we decided to use almost 2500 lbs. of conditioner in September when our building of 13 new holes was begun. Here again the record speaks for itself:

On September 8, 9 and 10 (1953) 13 greens, tees and aprons were treated. On the greens conditioner was incorporated at the rate of 2 lbs. per 100 sq. ft. to a depth of 6 inches in the original soil. No new soil was brought in. On tees and aprons conditioner was applied at the rate of one
The Smallest Slice of your course expenses can make The BIGGEST difference

Do your golfers wind up every round praising your turf? If you're not getting your share of compliments, you ought to check that vital 5%—the average course budget expenditure for seed. It's mighty important to spend that slice wisely for top quality.

Call upon Mock's for the newest developments in turf grass seed, sold either pure, or mixed to your special formula. Your inquiry will receive immediate attention. Your needs will have Mock's specialized service.

MOCK SEED COMPANY
PITTSBURGH 30, PA.

Men Who KNOW Specify MILORGANITE for Better Turf!

Greenkeeping Superintendents, who know the score when it comes to the successful development and maintenance of exceptional greens and good fairway turf, specify and use more MILORGANITE than any other fertilizer. A carload a year usually takes care of the requirements for a well-kept 18-hole course.

MILORGANITE produces vigorous, healthy, weed- and drought-resistant turf that keeps your Club membership and guests both happy and enthusiastic.

The services of our Agronomists and Soil Testing Laboratory are available for the asking.

THE SEWERAGE COMMISSION
MILWAUKEE • WISCONSIN

pound per 100 sq. ft., to a depth of 3 inches. This was our procedure:

Conditioner was spread on the dry surface soil and roto-tilled once to proper depth. The area was then wet down, roto-tilled once more when soil was workably moist and allowed to stand. All grass areas, including fairways, were fertilized equally with a 16-20-0 mixture and rolled. Fairways were then seeded to a mixture of Highland Bent and creeping red fescue. Greens, tees and aprons were seeded to straight Highland Bent. All seeded areas were again rolled.

It is important to add that seeding was started on September 17 and finished September 25. There was 0.87 in. of rain September 26, with 0.23 inches falling in one hour. Almost 4.5 in. of rain fell between September 26 and October 10 (U.S. Weather Bureau figures). So it is obvious that the conditioner was given a severe test.

I should also add that the conditioner used was a professional-type formulation of "straight" conditioner, not the diluted formulation for treating smaller home garden areas. In treating larger areas the professional-type formulation is a good deal less costly than the diluted, home-garden formulation.

Erosion Controlled

Despite the heavy rain within 10 days after seeding, we had no erosion on any treated area, including the 30 degree approaches to the greens, but on the untreated fairways, despite much less slope, we had considerable erosion and had to use straw to combat it.

The greens were and are much firmer than the fairways and have a much heavier stand of grass, though both greens and fairways received the same amount of fertilizer.

In a couple of months after seeding, grass on the greens achieved a 4-to-5 in. root depth, though in previous years grass had never gotten below the 3-in. compacted layer.

Our soil was never slick or muddy, nor did it have a crust.

Putting the project on a dollars-and-cents basis, I am almost sure that, with the heavy fall rains in 1953, we would not have been able to get in last fall to re-seed the greens. Resultant heavy erosion would have demanded re-seeding this spring, and we probably could not have played on the new course until the fall of 1954. As it is, we will be able to play on the new nine months earlier. Putting it bluntly, that's money in the bank.
This report has been substantiated by an inspection November 10, 1953, by Byron Reed, president of the Oregon and Washington Golf Course Superintendents Assn. and by four other course superintendents.

Byron visited us again January 22, in the midst of a heavy snow. Snow was cleared away and soil plugs were removed from two untreated greens and one treated green. Not only was root growth well down beyond the 6-in. level on the plugs removed from the treated green, but these plugs were not even muddy. Definite layering, shallow root growth and muddy condition were shown on the plugs taken from the untreated greens. Byron was further surprised when he learned that we had just lost a 15-in. snow the previous week.

Byron said: "The four greens superintendents and I who visited the Forest Hills course in November, during a heavy downpour of rain, noticed immediately that we could walk on the treated greens and could not walk on the untreated fairways. We could not even inspect all treated greens, because we could not travel from green to green on the fairway.

"On the treated greens, despite the

A Great Water-Saver
...because it's just a single, rotating line of water

The water pressure turns the wheel. The stream is broken up into rain-like drops which penetrate the soil like a gentle shower. The head revolves slowly, delivering the water in a long straight line which allows all the water to soak in before the line passes over again.

It is not a mist, to evaporate; not a too-heavy shower to run off, wasting water and packing or washing the soil. Covers 90 feet in diameter under good pressure. Can be reduced to as little as 15 feet with a turn of the faucet.

MODEL H
Single spout (not illustrated). Up to 80-foot diameter.

$18.75

DOUBLE SPOUT
(illustrated). Up to 90-foot diameter, with slightly less volume.

$19.50

At Most Leading Dealers, or
DOUBLE ROTARY SPRINKLER CO.
422 Admiral Blvd. Kansas City 6, Mo.

WIN
"BEST TURF" HONORS WITH
PURATURF #177
(a cadmium fungicide)
The proven cure for DOLLAR SPOT COPPER SPOT and PINK PATCH

PURATURF #10
(a soluble phenyl mercury) eliminates crab grass and controls dollar and copper spot, pink patch. Most effective for snow mold and helminthosporium leaf spot.

Gallowher/ Chemical Corporation 801 Second Avenue New York 17, N. Y.

STUBBORN GREENS & FAIRWAYS

TRIAL OFFER
Gal. with automatic spray gun.
Reg. $6.90 $4.95

Keep your course in tip-top condition with easy-to-apply Gro-Green.

30 gal. drum $2.08 gal.
55 gal. drum $1.98 gal.

Liquid Gro-Green contains all essential Trace and Micro-elements, hormones, and vitamins that provide balanced plant diet without waste. For greens, use handy spray gun (shown below). Fill glass container with undiluted Gro-Green and connect to hose. Spray gun automatically mixes 1 pint Gro-Green to 15 gallons of water. 1 pint covers approximately 2000 sq. ft. For fairways, use ordinary mounted sprayer. Mix 2 gallons Gro-Green with 8 gallons water, use 10 gallons per acre nozzle. Weed killer may be mixed with solution and both sprayed on at one time.

Wire or write for price list. Dealer inquiries invited.

H. D. CAMPBELL CO.
ROCHELLE ILLINOIS

July, 1954
rain, no water was standing; on untreated greens and fairways water was plainly standing. We especially noticed the difference in grass growth and lushness, both on the surface and in plugs taken from various greens, between old greens and new, treated greens.”

This evidence was recorded photographically, as I am skeptical enough myself by nature to know that golf course superintendents are a skeptical breed. We have to be. There is little room in our operations for casual, do-it-and-hope use of either time or money.

We have now definitely decided to use only conditioner-treated soil in topdressing the remaining old greens. I am sure that in a season or two the condition of these greens will be vastly improved. Since our own project was completed, we have been visited by as many as 50 golf course superintendents at one session. Among those who, I understand, are now using conditioner on their courses are Henry Land, president of the Northwest Turf Assn. at the Tacoma (Wash.) CC, and Glen Proctor, secretary of the association, at the Ranier G&CC, in Seattle.

I repeat that this report is not an attempt to “prescribe” conditioners, on a general basis, for any course. I certainly realize the great regional diversification of problems which confront golf course superintendents.

But it is time that a report of the practical application of these materials is made available to the many superintendents who try to keep abreast of new developments and techniques. It is time that the much-discussed “expense” factor is brought into proper perspective. With the background of the problems inherent in management of the Forest Hills course, and with time now elapsed for putting into the record the scientifically and practically measurable results of the use of a conditioner in our case, I feel that this report will be useful to members of our profession.

It is in that spirit that this report has been made.

NEW GOLFERS PAVILION

(Continued from Page 50)

display rather unusual and unique in design in the use of a combination of materials and finish.

The cocktail lounge has three sides facing the golf course and are composed entirely of stationary and vented glass extending from convectors height to the ceil-
ing; thus allowing full vision of a large portion of the beautiful course. The fourth side has a bar of used brick and redwood. The floor is of craborchard flagstone and the plastered ceiling is dotted with recessed spotlights. Interior woodwork of antiqued redwood blends nicely with the field stone pilons that protrude into the Lounge at the two entrances.

Directly behind the bar and connected thereto is a modern kitchen, equipped for short orders and furnished with stainless steel fixtures. These units combine to form one large recreational unit, completely segregated from the Pro Shop with its auxiliary units.

The Pro Shop, located next to the kitchen, has two opposite exterior walls of glass which permits a clear view to both the practice green and the eighteenth green. Against the remaining walls are display cases to accommodate all types of merchandise arranged in accordance with suggestions by Druid Hills pro Charlie Miller. This room has a Green deep pile Rayon carpet made by E. T. Barwick Mills of Chamlee, Ga.

This is a most interesting room with its walls and cases of North Georgia Birch trimmed in redwood. Troffer and eyeball lights are recessed in an acoustical ceiling.

Ample space is provided for a customer to swing any club without danger to the fixtures.

Adjoining this shop on one side and connected, is the Pro's Office with ample storage, a cleaning room (with a Fred Haas machine), repair room and club storage room. These utility rooms are arranged in order to permit the caddies from the 18th green to pass the clubs through a copper-clad dutch door into the cleaning room. A similar exterior door is provided in the club storage near the practice green and first green. The storage room has steel bins made by Berger Mfg. Co.

This two story structure, approximately 60 ft. by 112 ft. erected at a cost of $132,-892, also provides a suspended gallery at the second floor level extending from the Lounge entrance along the Pro Shop unit, facing the 18th green.

As work progressed on the golfers pavilion, another sorely needed facility began to take form. Due to the overall layout of the Club, the Caddie House was located on the edge of the parking area in rear of the main Clubhouse.

This so-called Caddie House was composed of two separate dilapidated wooden structure. One housed the caddie-master and 15 ft. away was the other which housed the caddies. Time had arrived to eliminate these eyesores and plans were prepared for a fire resisting structure to consolidate both old structures. This new caddie house was placed on the site of the old caddie-master's Office at a cost of $6,465.

Masterson, Muny Golf
Director, Ingenious

P. M. (Pete) Masterson, Seattle, Wash., Director of Municipal Golf, is one of golf's busiest inventors. Pete invented a cushion cup for fitting over sprinkler heads, and is bringing out a theft-proof ball washer. One of Masterson's ideas which got him a special award of $250 from the Seattle City Council, as one of its awards under the council's "Suggestion Award" program is a device for injecting solid in semi-liquid form under 2000 lbs. pressure to fill depressions in turf.

The device saved the city $8,000 on its muny courses and has been used with success and saving at other courses.
**KIWI SPORT IMPORTED AS LEATHER WATERPROOFER**

Kiwi Sport, a leather waterproofer made in Australia, now is being marketed in the U. S. by the Kroydon Co., Maplewood, N. J. The material is greaseless and waterproofed leather without taking from it the natural rigidity necessary to comfort and performance. It does not soften leather so it stretches under strain.

It has a world-wide reputation for weatherproof shoes for golf and other sports, luggage, leather jackets, etc.

William C. King, Sales Mgr., National Die Casting Co., manufacturers of the Nadeo line of caddy carts, announces the appointment of two new salesmen, Francis Hudak and Harry Schilling.

Hudak will cover the states of Michigan, Ohio, Western Pa. and Western New York. Schilling will cover New England, New York, Eastern Pa., Maryland, and Washington, D. C.

**SPEEDY MOWING BY ALLIS-CHALMERS MODEL 18 TRACTOR**

Mowing 350 acres of fairways and park land at Wood, Wis., has been reduced to a minimum by teaming up the Veteran's Administration's two Allis-Chalmers Model 18 tractors. Operators of equipment report efficient handling and flexibility of 18 tractors provides short-turn radius reducing mowing time around trees, undergrowth and other stationary objects.

**WHITE'S "AID" HELPS PUPILS TO LEARN HEAD STEADINESS**

White's Golfing Aid is a foam rubber pad held between the chin and the chest as a practice reminder to keep in balance with the head steady but not dead stiff. It is kept from falling off between practice shots by an elastic band loosely placed around the neck.

When the head is raised during the swing the Aid falls out of position. It promotes correct shoulder action.

The Aid is the invention of an army colonel in active service. It looks weird but is comfortable and it works, according to testimony of pros who have used it in effective instruction. Fairley Clark and Paul Hahn, particularly, have found White's Golfing Aid astonishingly successful in helping pupils to quickly learn the feel of a well balanced swing.

The device is distributed by Pines Golfing Co., Spring Lake, N. C.

**RENOVATAIRE IS NEW FOR THATCH ELIMINATION**

A new combination aerating and renovating machine for getting air, moisture and fertilizer down to the roots of grass areas and for controlling the thatch that builds up on Bermuda, creeping bent or any running stem turf is now being produced by Soilaire Industries, Minneapolis 3, Minn.

Called the Renovataire, this machine has 22 in. aerating, renovating wheels with saw-toothed knives, adjustable in penetrating depth from 2-3-4 inches. These saw-tooth knives are shaped so as to perform a definite slicing action in controlling long step grasses and cutting endless number of slits 2 in. long in turf without tearing the surface.

A heavy-duty tubular steel frame with a hydraulic lift that will raise all aerating wheels off the ground provides easy transporting over roads or pavements.

**NEW ATLANTIC BAG WITH SIDE ZIPPER POCKET**

Atlantic Products Corp., Trenton, N. J. has a new golf bag with a special locker pocket large enough and so designed that the golfer can carry his raincoat, sweater, or other items.

Streamlined and full length, the locker pocket with its new side zipper arrangement will keep accessories fresh and clean. This new idea has been incorporated in Atlantic Products' popular Pro-Keystone model which also boasts of a large space-shaped ball pocket. The light weight Pro-Keystone features hand finished, tooled Parhyde trim and molded
GET greater value, protection and satisfaction with

PNEU-MAT-RUNNERS

DON'T wait for golf spikes to destroy your club-house floors.

PROVEN by clubs from Coast to Coast—PNEU-MAT-RUNNERS resist rough treatment from the sharpest spikes, last for years, provide soft rug-like cushion and are reversible for greater wear.

WIDTHS up to 48” — LENGTHS up to 100’ long

SUPERIOR RUBBER MFG. CO., INC., 122 East 25th St., New York 10, N. Y.

rubber non-skid bottom. Fabric is sturdy tent duck available in forest green, beige, MacArthur (green) plaid, or Wallace (red) plaid; with detachable matching hood.

COMPACT MAKES ATTRACTIVE GOLF PRIZE

The "Girl Golfer Compact" (#BL60) is a new creation of the Trophy and Medal Shop, 10 South Wabash, Chicago 3, Ill., which will please the ladies. Compact is made of lightweight Tu-Tone jewelers bronze of sturdy construction. Its size (3 in. dia.) and weight make it a practical as well as an ornamental item ideally suited as a golf prize or souvenir.

GOODYEAR AND CSI SALES CO. COLLABORATE ON NEW GRIP

Goodyear Tire & Rubber Co. and CSI Sales Co., Solon, O., have collaborated in making a new grip which requires neither listing material or adhesive.

Since first marketing the Dimpled and Dynamic flange grips several years ago the CSI Co. has been keeping close watch on the application and performance of the two grips and has consulted with many professionals and club manufacturers.

To the tension winding and feel of the original grips there has been added the factors of perfectly molded taper and greater ease and certainty of correct application, thru the Goodyear-CSI joint work. The new grip is wrapped directly on any standard-sized shaft. No underlisting is required.

The flange wrapping principle secures the grip to the shaft as well as to itself, when applied under tension. The new grip...
STANDARD NOW MAKING
"LAWN GOLF" SETS

Standard Mfg. Co., Cedar Falls, Ia., is making a "Lawn Golf" set of two regulation putting cups, with pins and markers of the type Standard supplies to most of the golf club practice putting greens. The ball is removed from the cup by lifting the marker. A weighted base holds the marker erect.

SPORTS AWARDS OPENS NEW SHOWROOM

Sports Awards Co., 429 West Superior, Chicago 10, Ill., announces opening of new showroom and extended quarters at the same address. Professionals, club officials and golfers are invited to inspect the large stock of carefully selected and designed awards kept on hand at all times. Heavy inventory assures immediate shipment and special service can be given on engraved orders when requested. Colorful catalog and prices available on request.

ROSEMAN'S NEW TOOL
FOR SEED BEDS

Roseman Tractor Equipment Co., Evanston, Ill., has a new patented Tiller-Rake designed to work with the Ford, Ferguson and other tractors having 3-point hydraulic-lift systems.

The Tiller-Rake does four turf installation operations in one. Scarifying, leveling, grading, and raking are all accomplished with the same implement, resulting in seed bed preparation in the short time. No hand labor or raking is required. Substantial savings in tractor operation and man hours are possible with the