

Care of Bent Grass Golf Greens

Climatic Zones, Soil and Drainage

By O. J. NOER

The turf on a well kept putting green is as near perfect as man can produce. Skill is needed to obtain and keep it that way. Success depends upon selecting a grass adapted to the local climate, of following maintenance practices which are suited to it and of being prepared for spells of bad weather.

Weather and Climate Affect Turf on Bent Greens: An understanding of the distinction between weather and climate, and of their effect upon turf is essential. Weather refers to the atmospheric condition at a particular moment with respect to heat or cold, humidity, wetness, drought, clearness or cloudiness, etc. Climate is the average condition of weather in a particular spot over a period of time, usually many years. It is the summation of day by day weather.

The geographical distribution of grasses is a matter of climate. The bent grasses grow best in regions of temperate climate and prefer moderately cool, moist weather. They can withstand considerable heat, provided humidity is low and especially where nights are cool. Bent greens fare badly in wet hot humid weather. Brown patch and scald are very bad during rainy spells when the nights as well as the days are hot and humid.

The coastal regions of New England, and the Pacific Northwest, are the best places for bent grasses on this continent. Rainfall is plentiful and temperatures are always moderate. Elsewhere bent grass greens are found in the area North of a line from Washington to St. Louis and Oklahoma. From Washington the line dips South to include all of West Virginia, the mountainous areas of the western part of Virginia and North Carolina, and the eastern parts of Kentucky and Tennessee. Then it passes roughly from Chattanooga to Knoxville, Cincinnati, Louisville, Evansville, St. Louis and on thru Springfield, Missouri to Oklahoma. Golf courses with bent greens are scattered throughout Oklahoma, North and West Texas, and the states of Arizona and New Mexico. Southern California has had good bent greens for many years. Daytime temperatures in the southwest are high in summer, but nights are cool. Humidity is low, and rainfall is negligible. Greens never become waterlogged from natural precipitation.

Temperate Climatic Zone Consists of Three Belts: The temperate zone of the

United States and Canada can be subdivided into three belts; based upon the effect of climate and weather on bent grass. The southern belt reaches from Philadelphia and Washington to Kansas City and includes Cincinnati, Louisville and St. Louis. The northern belt extends from northern New England and Quebec to Minneapolis, Fargo and Winnipeg. The central belt embraces the region in between and is typified by New York, Boston, Buffalo, Cleveland, Detroit, Chicago and Denver.

Turf maintenance must be designed to fit the local climate. Difficulties multiply when the climate is not ideal, and become impossible when the region is wholly unsuited to the grass. The program must be designed to meet any variation from the normal, because day by day weather vitally affects maintenance. Difficulties arise during periods of unseasonable winter or summer weather. Selection of a suitable grass, fertilization, watering and disease control are the important factors which spell the difference between success and dismal failure.

Southern Belt: The climate is not ideal for northern or for southern grasses. The summers are too hot and humid for bent, and the winters are too cold for bermuda grass. It is the most trying and difficult region for bent greens. Maintenance is extremely difficult and hazardous during the hot humid period from June to September, when brown patch and scald are rampant. Dollar spot is rare in summer but is the principal disease in spring and fall. Winter-kill and snow mold are almost unknown.

Excellent drainage and a well ventilated soil are indispensable in this zone. Without them it is impossible to cope with adverse rainy weather. The need for good natural or artificial subsoil drainage is obvious, but ideal surface drainage is even more important. Surface run-off is the quickest way to remove surplus water during and immediately after heavy summer rains.

Northern Belt: Mild daytime weather and cool nights simplify maintenance during most of the growing season. Dollar spot is the principal disease, yet many clubs have not learned the secret of its prevention and control. Greens do not receive enough nitrogen to keep the grass healthy and in active growth. Fungicide is not used regularly to prevent, rather than cure, dollar spot. Brown patch and scald

are rare. Snow mold and other types of winter-kill are the chief menace. Badly damaged turf recovers slowly because spring weather is too cold for seed to germinate, or growth to start from the few nodes that survived.

Central Belt: This is an intermediate belt, a transition zone with moderate weather the rule in summer and in winter. Maintenance is a matter of being prepared for unfavorable periods. Troubles arise during occasional spells of hot humid weather in the summer, and an occasional bad winter.

Soil for Greens: Soil is not just so much dirt, but consists of solid, liquid and gaseous matter. It is half solid by volume with about 70 to 80 percent minerals which is a mixture of sand, silt and clay particles. The other 20 to 30 percent is organic matter or humus. The non-solid half, or the voids between the particles, is half water and half air. Stated another way, a cubic foot of soil should contain one half cubic foot of solid matter, one quarter cubic foot of water and one quarter cubic foot of air. Such a soil is well ventilated, and an ideal medium for the growth of grass, or any other crop.

The subsoil need not have organic matter, but it should be well ventilated to facilitate drainage, and speed the removal of surplus gravitational water. A system of tile drains should be installed in all greens having a subsoil which does not meet these specifications.

A putting green is more than a place to grow grass. The surface must have enough resilience to hold the ball of a pitched shot and yet be firm enough to have billiard table trueness. Over-watering is one way to make a green hold a pitched ball. The better way is to have a good soil structure. The surface will have sufficient resilience to hold the ball, irrespective of its moist content. Then it will not be necessary to resort to the bad practice of over-watering.

The surface soil on a putting green should be not less than 4 to 8 inches deep. A medium sandy loam containing 20 to 30 percent organic matter, but no more, is best. This soil has enough sand, with particles varying in size from coarse to fine, and has the right amount of silt and clay to impart the desirable qualities these colloidal substances possess. They give the soil body, enable it to retain and release available plant nutrients, and enhance the water holding capacity. Too much silt or clay makes for excessive compaction due to heavy traffic, the puddling effect of frequent watering, and the compressing effect caused by constant mowing. Compaction deprives the soil of air, and then the root system becomes shallow because feeder roots breathe. They must have oxygen to live, otherwise they perish.

The presence of some organic matter in the surface soil is essential to make it slightly resilient and perform other func-

(Continued on page 50)





**ROYAL
GOLF CLUB
OF BELGIUM**

The American Revolution was not to occur for 27 years, but the game of golf was well over 300 years old, in 1748, when the seigneur of Terweynt, Charles Henri Francolet, placed the cornerstone of what is now the club house of the Royal Golf Club of Belgium at Tervueren, near Brussels. Seventy-six years later the Prince of Orange bought the estate, and in 1832 the state took over. Fifty years later the property was ceded to King Leopold II. With this historical background, the Royal Golf Club became the owner on May 1, 1906. • Whether golf is played in the United States, Belgium, or any country in the world, well trimmed fairways, carpet-like greens and cared-for rough are of the utmost importance for maximum enjoyment of the game. • Famous clubs in every country where golf is played use Worthington mowing equipment. Before World War II, the Royal Golf Club of Belgium used a 7-gang Worthington mower and a Worthington "Chief" tractor—and now that the club has re-opened, it still uses these same rugged Worthington machines to keep the course in the best playing condition.

For further details of the various types of Worthington mowers, call your nearest distributor, or write direct to:

WORTHINGTON MOWER COMPANY

STROUDSBURG, PENNSYLVANIA

Division of Jacobsen Manufacturing Company

Established 1914



Look From Members' Viewpoint in Planning the Pro Shop

By **GEORGE KNOX**

Professional, Calumet Country Club, Homewood, Ill.

There is an important point to be considered when the pro is considering all possible improvements that can be presented in his shop to attract and serve his members. In trying to do his utmost the pro may make his establishment look like just another golf department in a sports good store and sacrifice the distinctive and powerful selling force the pro shop should have.

The pro shop should, in my opinion, plainly reflect the expert and conscientious service of the master pro rather than an effort to adapt all the fancy beguilements stores are compelled to use because of the high-pressure and often cut-throat competition in which they are engaged. Volume must be the stores' one big objective and they can go after it in a different manner than the pro for the simple reason they have a big and shifting market to sell to. The pro has to intensively develop a comparatively small field of customers and make sure of repeat sales by giving the most highly personalized expert service a buyer of golf goods possibly can get.

Consequently the pro shop should always reflect the pro's personality. It must be bright and clean, and although limitations of space in which the shop is housed may

prohibit any elaborate displays, the merchandise must be presented in a way that invites examination.

In Business for the Member

The pro has to run his shop more emphatically for the customer than the store does. In this way the pro makes his member feel that the member is part owner of the shop.

So the problem of getting the most suitable pro shop is by no means a problem of what the pro wants, but primarily one of what the member desires.

In the first place the members prefer a shop that is located near the first tee, and one which has a porch on which the members can relax and visit as they await their turns at the tee. That works out fine for the pro as it locates his shop where members can be served readily and where they can look over the stock while they are killing time.

The scoreboard should be located in this area so scores may be entered conveniently and readily seen by all players in the events.

Telephone service and a message board should be provided for members' convenience. This is especially serviceable if the

Veteran George Knox tested sales appeal of merchandise on top of display case and in case. By changing items on top and seeing how they outsold stuff in showcase he became advocate of tables for pro shop merchandise display.



NOW AVAILABLE WITH HOOD!



THIS
MAKES IT
BALANCE



U. S. Patent No.
2364223

The Lightweight Balanced Golf Bag

Chalk up *another* first for Lightweight BALANCED GOLF BAG—it's the first and only lightweight bag with a hood! And what a hood—it protects the club heads; holds them snugly so they won't rattle; can be used as a carry-all for practice balls, shoes, etc. And it folds up to neatly fit into the bag pocket when not in use.

Yes, it's another first for BALANCED GOLF BAG—the *first* balanced lightweight bag—the *first* full-size lightweight bag—the *first* nationally advertised lightweight bag—the only lightweight bag that won't sag or spill clubs.

Now BALANCED GOLF BAG will be more popular than ever. Better have a supply on hand for *your* customers. Order now from your jobber.

Nationally Advertised



Retail Price

Standard Model, \$6⁰⁰
... with hood, \$7⁰⁰

- Finest quality duck.
- Sun-tan or White—
- trimmed in olive green.

BALANCED GOLF BAG, INC., North and Noble Streets, Chicago 22, Ill.

February, 1947

FOR THOSE WHO DEMAND THE FINEST

Hagen golf equipment is distinguished for its fine design and master craftsmanship. The pride of ownership experienced by those who possess Hagen equipment and the playing pleasure derived from its use are a true gauge of its superior design. Hagen Strata-Bloc woods are not affected by changes in humidity or temperature. Hagen irons are Tri-Balanced for distance, direction and "sweet feel." Hagen Golf Balls are uniform and unfailing in top performance.

Walter Hagen Golf, Grand Rapids 2, Michigan, Division of Wilson Sporting Goods Co.

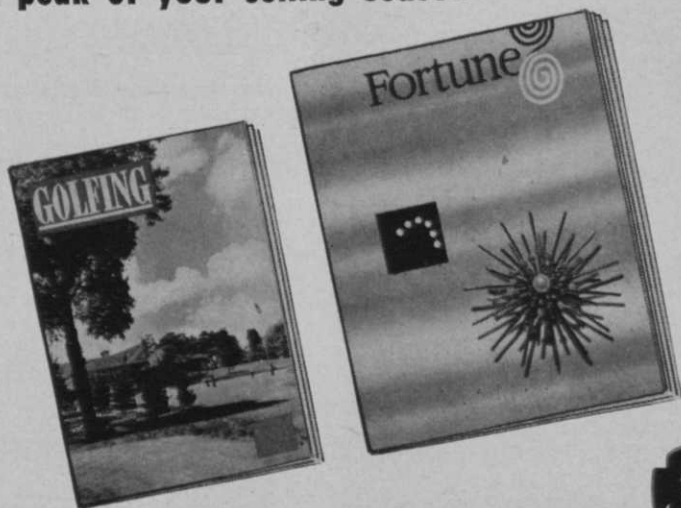


This full page advertisement appears in the March issue of Fortune Magazine

NATIONAL ADVERTISING

**where and when
it counts most...**

**in Fortune Magazine
... Golfing Magazine
at the peak of your selling season**



WALTER HAGEN GOLF
Grand Rapids 2, Mich.
Division of Wilson Sporting Goods Co.



first and 10th tees are alongside each other as they are at Calumet.

Of course a major reason for the pro shop being located near the first tee is because the pro often has to supervise entries and starting of events and in such intervals as may arise, be wanted in the shop. Frequently the members want a pro to be several places at once and a pro shop near the first tee comes as near as possible to an arrangement that will help the pro to please them all.

I believe that a pro show room 24 x 24 is large enough for most clubs. This gives ample space in which a member can swing a club and there certainly are going to be a lot of "practice swings" in shopping for the new clubs. Club display racks should be of steel, preferably, and along 2 walls. Part of the wall display space should be racks for bags.

One case for balls and small accessories, in my opinion, is enough for a shop. Tables are best for sweaters, caps, shoes and other items. Have the wearing apparel that's liable to get soiled displayed in cellophane wrappers so it always will look good.

I would like to have a large plateglass show window on the porch facing the first tee where I could show merchandise to catch the eye of players who need to be reminded.

Planning Club Storage Room

The club storage and cleaning work should be done in a room entirely divided from your show room, but so arranged that a man working in the back can see the sales area. Storage racks should be of different sizes to care for the many shapes and sizes of bags without injuring them in storage and for saving space. The size of the storage and cleaning room depends, naturally, on the size of the membership of the club.

Cleaning facilities and workbench should be incorporated into the layout so work can be done without unnecessary handling of the bags and clubs and without spreading dust.

The window used to pass out bags to the caddies and for receiving bags from the caddies should be in the cleaning room and located to eliminate running and delay in swift smooth handling of bags.

To my way of thinking not much lounging space for members is required in a pro shop. One or two chairs are sufficient in the showroom.

The most common fault of the pro shop is poor location. Often shops are located where they are convenient only to men. Others are located where they are out of the way for men and women and caddies



Knox says get metal wall display racks, if and when you can, for neat, simple and easily-maintained shop display.

are sent in to buy balls and tees. If the member is to be properly served these mistakes of location must be corrected. The pro, of course, is seriously handicapped in earning opportunities by these poorly located shops, but it's the failure to provide for the member's convenience rather than the pro's earnings that will produce enough pressure to get this error of location corrected.

But regardless of the location of the pro shop there is absolutely no excuse for the pro allowing it to be untidy and dingy. He can make it bright and cheery and keep it immaculately or he'll be sidetracked for some fellow who will.

In the wave of postwar remodeling and improving that is coming to golf clubs there is going to be a great deal of long over-due relocation and new design of pro shops, but this will be prompted by members' needs of more convenient and complete service rather than by the pro's knowledge that he can get a better income and serve his members better in a more suitable shop.

If members knew how much well located, properly designed pro shops and pro department work facilities would serve them the pro wouldn't have to plead to get the right sort of shops.



LEO

Wonderful New TEE-OFF MATTING

... Here's the skidproof, slipproof, easy-on-the-arches rubber link tee-off matting that'll bring new popularity to your driving range.

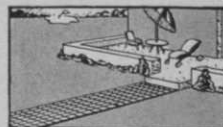
Resilient "live" rubber links are of the same tough rubber-fiber compound used in heavy duty truck tire sidewalls. This matting is virtually indestructible, reversible, and easily cleaned!

And this is the famous rubber link matting you've been hearing so much about as an unexcelled floor-covering ...available in any required size...ideal for locker rooms, lawn walks, club rooms, club porches, caddy house floors. Write for detailed brochure.

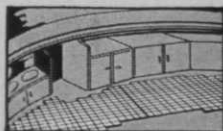
For Safe, Non-Slip
Footing on Locker
Room Floors!



For Neat, Grass-
Protecting Paths
Across Lawns!



For Club Room
Bartenders
...Lessens Fatigue



Since 1868

The **LOEWENTHAL COMPANY**
188 W. RANDOLPH ST. • CHICAGO 1, ILL. • FACTORY—AKRON, OHIO

Rhythm and Etiquette Featured in Timberman's Kid Classes

Wayne Timberman, pro at Meridian Hills CC, Indianapolis, Ind., has done a job of developing juvenile golfers that pros in the midwest who have had considerable successful experience of their own in juvenile golf promotion, consider an outstanding performance.

Prior to the establishment of Timberman's program in 1941, and at frequent intervals since, he has consulted school authorities for advice and checking on various principles and practices in teaching youngsters. Because of this adaptation of educational experts' advice the program at Meridian Hills goes into angles not often applied in golf instruction of juveniles.

The Timberman free classes are conducted during the season for youngsters through 14 years of age. In the summer of 1946 there were 64 boys and girls who took part in the classes and with surprising regularity of attendance. The kids practice, too, in a manner that Wayne says could very well be emulated by the older pupils of golf instructors.

The Timberman lessons and supervision include emphasis on this matter of practice. That's a particularly important phase of juvenile development because of the limited time and personal supervision that can be devoted to the classes when the pro's teaching schedule is tightly packed. Getting the kids to be joyfully eager to practice and knowing how to prac-



Wayne Timberman looks over a group in one of his classes.

tice correctly Timberman says is a very important part of the schooling.

Rhythm Learning Stressed

One phase of the instruction at Meridian Hills that has proved especially impressive to parents of the kids as well as to Wayne is the accent on rhythm. Timberman picked up this idea from school teachers who spoke of their work with the so-called "rhythm bands" for rather young pupils. Most of such teaching is done in kindergartens. It is basic in developing a sense of rhythm

and a quite tough job in the cases of kids who are inclined to be clumsy. Timberman, by applying fundamentals of this rhythm teaching to instruction in the golf swing seems to have implanted ease and grace into the manual performances of youngsters who apparently were destined to go awkwardly through childhood.

In the routine of his juvenile classes Timberman endeavors to give the pupils fundamentally sound performance with respect to grip, use of hands and forearms in developing clubhead speed, movement from the waist down to give leverage, and freedom of the hands and arms in manipulating the clubhead while keeping it under control. He explains the reasons so the pupils get in their own minds the foundations of the principles involved and have at least a fair notion of why and where their faults occur.

Accent On Etiquette

Discreet accent is given to golf etiquette by Timberman's explanations of the

Lads and lassies in one of Wayne Timberman's junior classes at Meridian Hills learn to take a good free whack at the ball, and how to play as top-ranking ladies and gentlemen.

