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Scioto Country Club

By George Sargent

All eyes of the golfing world will be focused on the Scioto Country Club, Columbus, Ohio, during the three days July 8 to 10 this season, when the National Open Championship of the United States will be in progress. From the present outlook the Open this year will be more popular and full of excitement than ever.

The majority of the golfing public are under the impression that the club which is to be host to a national tournament has a big and costly job on its hands in preparing for an event of that importance; but this is a mistaken idea.

At Scioto plans for reconstructing the putting greens were adopted and under way some months before any thought of holding the National Open was conceived, after being invited to put in a bid for this event and knowing that it was fairly sure to be held at Scioto. These plans were in no way elaborated; in fact, the only extra construction we have undertaken because of the National Open was to extend two tees and build three others, at a cost of about one hundred dollars. All other work that has been done or is being done is routine work, which would have been done regardless of the National Open Championship.

Players who take part in the National Open Championship are not looking for anything impossible or extraordinary. All they ask is a reasonably good test of the game, and conditions fair, so that the element of luck be not too great a factor in deciding the winner of the event.

From a golf course standpoint, the dates July 8 to 10 are somewhat problematical. Nature is beyond the power of man; and conditions may be such at that time that the fairways will be a trifle faster than we would wish. Scioto has wintered very well, and at the present moment everything seems favorable for its being in pretty good condition for the Open.

The putting greens are creeping bent, of the Columbia strain, seven of which were planted by the vegetative method and eleven of which were sodded with bent sod which had been grown by the vegetative method. Bent putting greens that have been grown by the vegetative method have been roundly criticized on account of a tendency to form a grain which runs in all directions and makes it difficult to putt over. Playing the National Open on this type of green is surely putting them to the acid test; but we do not believe they will be found wanting.

The fairway at Scioto is about 50 percent red fescue and 50 percent Kentucky bluegrass. There are a few patches of creeping bent here and there, which are slowly becoming more numerous. Originally the fairways were almost solid red fescue, and were among the best I had ever seen. Scioto, however, is situated on a stratum of lime rock, which is encouraging to bluegrass, and it is gradually crowding out the fescue, and no doubt in the course of a few years bluegrass will be the predominating grass.

The rough is largely of fescue, where it apparently thrives better than in the fairways or putting greens, due to the fact that it is not cut so close. Fescue makes a rather severe rough; and unless Scioto is badly burned out by a long siege of hot, dry weather, we are advising the boys playing in the Open to stick to the fairways.

Eighth hole, Scioto Country Club, viewed from back of green. Length, 480 yards. A fine 2-shot hole. As the green is at a slight angle to the left with a water hazard behind it, lots of courage is required to go for the green on the second

The course was designed by Mr. Donald Ross in 1915 and was built during the years 1915 and 1916. There was a lot of rain during the construction period, which made it imperative to particularly well drain the wet spots in order to go ahead with construction work. This resulted in Scioto being a very well-drained course, and it can be played on at almost any time of the year; even after an extremely heavy rain it is in good playing condition very shortly after the rain ceases.

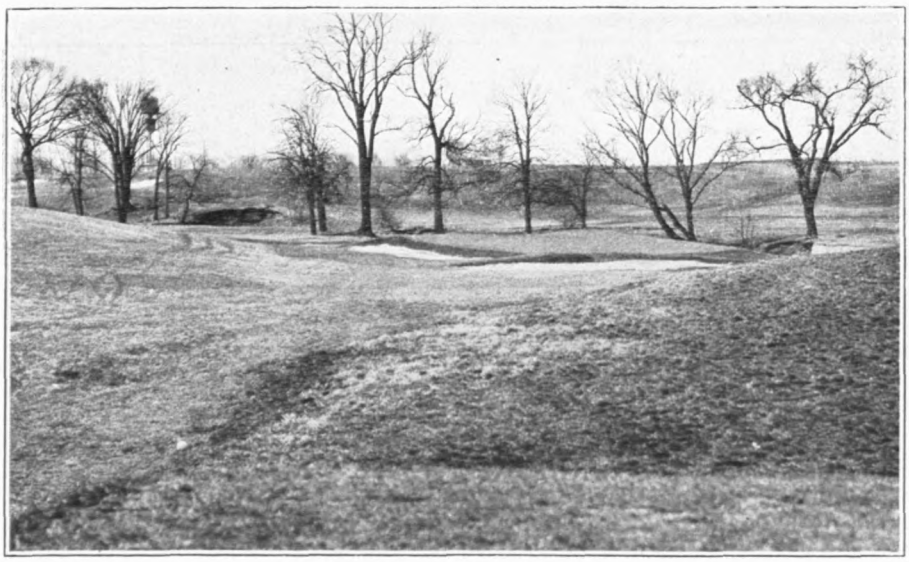
The course was very well laid out, and little or no changes have been found necessary from the original plans. The topography is rolling without being severe enough to make playing laborious. Splendid advantage was taken of the natural hazards of the rolling ground and of the creek which zigzags through the entire length of the property.

Scioto at first glance presents a very different appearance from most of the well-known courses. Altogether there are not more than seventy artificial hazards or sand traps; and in this day and age,

when we are apt to rate courses by the number of its sand traps, Scioto, until after it has been played a few times, might appear as minus a few teeth.

All the holes are of fine length, and call for good second shots, which must be accurately placed. The total length is close to 6,700 yards, from the center of the back tees to the center of the greens. There are four one-shot holes, varying from 135 to 235 yards, all of which are greatly diversified and very interesting.

In conditioning Scioto for the Open we expect to follow more or less the well-known methods in caring for the bent putting greens—topdress lightly each 30 to 40 days and frequently fertilize with ammonium phosphate or ammonium sulfate.



Seventeenth hole, Scioto Country Club. Length, 115 to 150 yards. A postage-stamp type of putting green. The angles are such that a practically unlimited variety of shots is possible. Behind the green is a sand-trap, and at the right a water hazard

The fairways have been well topdressed the last two winters. This was not done especially for the National Open Championship, but is part of the program to rejuvenate the fairways, which became thinned out because of lack of fertilization and a severe drought which visited this section three years ago. Fine results have been obtained from this dressing, and it should be a big help in retaining the moisture next summer and thus stopping the fairways from becoming too fast. In addition to the manure, we have also for the last two years fertilized the fairways with sulfate of ammonia; this is for feeding and stimulating purposes, and we also find it has been discouraging to weeds such as dandelions. Teeing grounds have received the same treatment as the fairways, with the addition of a little sulfate of ammonia during the playing season.

There has been a lot of discussion among players regarding bunker treatment. Some clubs believe in filling the traps with grooves for important events. Worcester last year during the National Open left the traps smooth, and the players were apparently more puzzled

than if they had been grooved. As a matter of fact, traps that are left smooth require a greater variety of shots than traps that are ridged or grooved. If the traps are left smooth, the player may be faced with any one of three shots; the ball may be lying perfectly clean, where it can be chipped out; it may be under the face of the bunker, when a cut shot would be required; or, as is very often the case, it may be resting in a footprint, where an explosion shot would be demanded. With the grooved or ridged type of treatment, it is invariably an explosion shot that is required, and variety is almost entirely eliminated. The British rarely, if ever, smooth or manipulate the sand traps, preferring to let the element of luck be the deciding factor. Nothing has been definitely decided as to how the bunkers will be conditioned at Scioto for the National Open Championship. In my own humble opinion, however, any hazard, no matter what its nature, if well placed is, regardless of conditioning, perfectly able to give a good account of itself.

Seed of Common Grasses Sold Under New Names

In THE BULLETIN for September, 1923 (page 234), the Green Section warned golf clubs against purchasing meadow fescue seed under the name "Turfing Fescue," which was then being offered under that name. Again in THE BULLETIN for January, 1924 (page 19), a warning was issued against purchasing seed of the same grass under the name "Herbae Prati." It is now learned that a Southern golf club has recently made a purchase of a seed mixture which is being marketed under a name perhaps still more attractive than "Turfing Fescue" or "Herbae Prati." An analysis of this new mixture made by the United States Department of Agriculture indicates that it consists of Italian rye-grass, timothy, and meadow-fescue. It is indeed true that each of these three grasses is a turf former. For certain purposes Italian rye-grass forms a suitable temporary golf turf. Turf of timothy and of meadow-fescue would be a disappointment on any golf course even for fairways. Moreover, from information received it would appear that the price at which this new mixture was sold was triple the actual market price of the several ingredients.

The Green Section for five years has been giving readers of THE BULLETIN full information on all of the known golf turf grasses which can grow in the United States and Canada. It has tested these and observed them to determine their relative merits. Botanists know of thousands of species of grasses, of which a dozen or so are adapted for use on golf courses, and many of these only under restricted conditions.

In the purchase of seed, as in the purchase of anything, quality is what you want, and not a trade-name. Buy pure seed and make your own mixtures.

Do the chairman of your green committee, and your greenkeeper, get The Bulletin? Frequently these men change, and we are not notified of the change, so that the new occupants of the positions do not see The Bulletin.

Yellow Foxtail—a Dangerous Turf Weed

Yellow foxtail (Chaetochloa lutescens). Plant, about one-third natural size; seeds, much enlarged

Yellow foxtail (*Chaetochloa lutescens*, or *Setaria glauca* of most authors) is a coarse introduced grass which is abundant over most of the territory east of the Rocky Mountains. It is a dangerous turf weed, and particularly so in the northern Mississippi and Missouri Valleys, the Ohio Valley, and the Great Lakes Region. In one case considerable damage to fairways was reported in the summer of 1925 by a golf club in the Chicago district, and to such extent that three fairways had to be reseeded. In its habits the grass behaves much like crab-grass. The plants are annual, appearing as seedlings in spring, growing vigorously and maturing much seed in summer, and dying in the fall, leaving bare spots in the turf. Left undisturbed, it will tend to crowd out other grasses. It can be distinguished from crabgrass by its smooth, shiny leaves, and compact, cylindrical, foxtail-like seed heads, which turn yellow as the seeds ripen. Under continuous close cutting it seeds close to the ground. If allowed to grow uncut, the seed heads will be produced sufficiently high above the ground so that they may be cut off.

Where this grass is found invading putting greens it should be weeded out by hand and never allowed to produce ripe seeds. In the fairways and rough it may be allowed to grow taller, until the seed heads are formed, and then cut while the seed heads are still green; this should effectively prevent its seeding and thus reappearing the following year. For cutting the grass at this height a scythe or mowing machine may be found necessary. In areas where the infestation is heavy, the foxtail should be kept constantly mowed. Its presence, especially if it is abundant, may with a degree of certainty be attributed to the use of fresh manure or to a lack of sufficient fertilization of a suitable character. Seed heads of yellow foxtail are rather abundant in many kinds of hay, and in this way may be introduced on a golf course through the use of fresh manure. Manure a year old may however be used with reasonable safety. Furthermore, where turf is kept well fertilized and watered, thus affording conditions under which the desirable turf grasses may thrive, the yellow foxtail will to a large extent be crowded out.

Although the grass may not in itself be objectionable in the rough, yet it should not be allowed to remain anywhere on a golf course, as from the rough it will spread to the fairways and greens.

Some U. S. Golf Association Decisions on the Rules of Golf

On the twelfth hole are white stakes indicating an area out-of-bounds, between the twelfth and fourteenth fairways, between which fairways are rough and water. Player A drove over the white stakes and beyond them into the fourteenth fairway, which is parallel. He claimed that his ball on the fourteenth fairway was not out of bounds. Player B claimed to the contrary. Which player was correct?

Decision.—Under definition 8, "Out-of-bounds is all ground on which play is prohibited." In this case the player's ball rested on playable ground and was therefore not out of bounds. It is obvious that the intent of the stakes placed between the two holes was to mark out certain ground on which play was prohibited.

Is there a rule prohibiting a player's playing with a golf professional in the qualifying round of a golf tournament?

Decision.—Section 2 of Rule 1 under Special Rules for Stroke Competitions covers this point. "Competitors shall play in couples" means that a competitor must play with another competitor; and unless there is no such partner for the player and special permission has been given to play with a marker (professional) before starting, the player is disqualified.

In a championship match play are players privileged to stop play until the following day in case it begins to rain after the match is in progress and a number of holes have been played? Is there anything which may delay or stop a match already begun and not result in a default?

Decision.—Provided the competition is not delayed and both competitors have given their consent, the match may be postponed.

Important Northern Golf Grasses

By R. A. Oakley

One of the most important considerations in the starting of a golf course is the selection of turf for the golf course. The September, 1922, number of THE BULLETIN contained an article entitled, "Some Simple Facts About Our Northern Golf Grasses," by Dr. Piper and the writer. Interest in this subject made it necessary to reprint the information contained in the article, in the December, 1924, number. We are now making the third reprint, because of the demand for information on turf grasses best adapted for Northern golf courses. There are some slight changes in the text from the previous issues based on our more recent investigations and observations.

The only grasses of outstanding importance for our Northern golf courses, by which is meant, broadly speaking, those courses lying north of the 37th degree of latitude, are Kentucky bluegrass, redtop, the bents, red fescue, and *Poa trivialis* (or bird-grass, as it is sometimes called). Sheep's fescue, Canada bluegrass and the rye-grasses may be added to this list, since the first two are used for the rough and are very valuable for this purpose, while the latter are in a way emergency grasses, particularly for the fairway. There are a few other species used occasionally but they are of so little importance that they will not be discussed here.

THE BLUEGRASSES

The grasses belonging to the genus *Poa* are commonly called bluegrasses. There are many of them, but only one (Kentucky bluegrass) is purposely cultivated to any considerable extent on our Northern golf courses. Canada bluegrass, however, is valuable, but only for the rough, and *Poa trivialis*, or bird-grass, has a limited place particularly on fairways. Annual bluegrass (*Poa annua*) is a very common species on putting greens, where it volunteers abundantly and is largely regarded as a weed; however, it is not without merit.

Kentucky Bluegrass.—Because of its wide range of adaptation and the character of its turf, Kentucky bluegrass tops the list of fairway grasses for Northern courses. It requires fairly rich soil for its best growth, and when given such soils it makes very excellent fairway turf. Kentucky bluegrass should be used as an important constituent of fairway mixtures on all Northern golf courses. On very sandy soils, red fescue may sometimes do better, but such soils, to produce really good turf, should be topdressed with clay and manure; when so treated they will produce better turf of Kentucky bluegrass than of red fescue. The bent-grasses make excellent fairway turf, particularly in parts of Pennsylvania, New York, and the northeastern states, but usually the seed of the bents is too high-priced to permit their use except in mixture with Kentucky bluegrass.

Kentucky bluegrass seed should not be sown alone, since it germinates slowly. Furthermore, it usually requires a year or more from the time of sowing for the grass to make good playable turf.

This fact has given rise to the well-known bluegrass-redtop mixture. These two grasses make an almost ideal fairway combination. Redtop is an excellent starter but a poor finisher. Kentucky bluegrass is the reverse—it starts slowly but finishes well, provided reasonably favorable conditions are given it. The first year from time of seeding, redtop is the dominant grass; after that, Kentucky bluegrass characterizes the turf. It is a vital mistake therefore to sow Kentucky bluegrass seed alone on fairways or lawns. Redtop seed should always be sown with it. Three to four pounds of seed of Kentucky bluegrass to one pound of recleaned redtop seed is a very satisfactory proportion for a mixture of these two grasses. On a well-prepared fairway seed bed, 100 to 150 pounds of seed of such a mixture is an ample quantity for sowing one acre. In the Northeast, especially in New England, some bent seed, as much as 10 pounds to the acre, should be added if available, since conditions there in general favor the ultimate dominancy of the bents. Seeding should always be done in the late summer or early fall.

It is popularly supposed that Kentucky bluegrass is a lime-loving grass and requires a sweet soil for its best growth. This opinion probably is due to the fact that it is found in greatest abundance on limestone soils. In general, these are rich soils. Really poor soils must have added to them something besides lime before they will grow bluegrass; but rich soils will produce excellent bluegrass turf, other conditions being favorable, even though they be low in their lime content. There is evidence to indicate that Kentucky bluegrass can be grown on acid soils if such soils are fairly rich, especially in available nitrogen. Kentucky bluegrass is not at its best during the hot, dry periods of summer, but over much of the area where it is used as a fairway grass, summer annual grasses, including crabgrass, come in to produce playable turf. When the short days and cool weather of fall arrive, bluegrass asserts itself and produces turf of almost ideal quality, so that the weedy summer grasses often really are a benefit rather than a detriment.

Good Kentucky bluegrass seed should weigh approximately 22 pounds to the bushel and should not have more than 13 percent of inert matter (chaff and trash). It should have less than two percent of weed seeds, and it should germinate not less than 80 percent. However, new-crop seed, as it is called, may be potentially viable, but because of its freshness may not germinate as high as it will one year later. Conditions of harvesting and curing being satisfactory, seed one year old, if properly stored, will usually germinate appreciably higher than new-crop seed. Even under ideal conditions its germination is slow, two or three weeks usually being required from the time the seed is sown until the seedlings are much in evidence.

Canada Bluegrass.—While often recommended for the fairway and frequently included as a constituent of fairway and putting green mixtures, Canada bluegrass has no place on the fairway proper in any part of this country. The stubbly, rather thin character of its turf makes it undesirable as a fairway or putting green grass. For the rough, however, it is very good, especially south and west of New England, on clay soils. Canada bluegrass does not require as rich soil as does Kentucky bluegrass; in fact, it will make better rough on poor clay soil than on good soil. It fits in well with sheep's

fescue, and the combination makes an almost ideal one for the rough. For original seedings of the rough, 30 to 40 pounds of Canada bluegrass and 40 to 50 pounds of sheep's fescue are sufficient for one acre of well prepared soil. The seed of Canada bluegrass closely resembles that of Kentucky bluegrass, but specialists can easily tell one from the other.

Poa Trivialis (Rough-Stalked Bluegrass, Rough-Stalked Meadow-Grass, or Bird-Grass).—There is a distinct difference in color between *Poa trivialis,* the name commonly used in the trade for this grass, and Kentucky bluegrass. The former is shiny and apple-green in color, while the latter is a deep blue-green. *Poa trivialis* is much more spreading in its habit of growth than is Kentucky bluegrass, and when grown in mixtures with other northern turf grasses it has a tendency to form definite patches, as do creeping bent and velvet-bent. It is an excellent northern shade grass, especially for lawns, and is found in considerable abundance on fairways and somewhat sparingly on putting greens on many golf courses in the New England states. On fairways it will apparently withstand poor drainage better than Kentucky bluegrass and probably quite as well as redtop or the bents, but its vitality is seriously reduced by hot, dry weather. On putting greens it is not nearly so satisfactory as either creeping bent or velvet-bent. It should be sown in mixture with redtop and at approximately one-half the rate recommended for the Kentucky bluegrass in the bluegrass-redtop mixture. The present market price of the seed is somewhat less than $1 per pound. In its germination characteristics it is much the same as Kentucky bluegrass seed but requires less time to germinate.

Redtop

In the language of Ingalls, redtop is a "valuable servant." In making turf on Northern golf courses its chief function is to supplement other grasses. Although very closely related to the bents botanically, it is quite different from them in its turf-forming habits. Used alone it makes good turf only in the early stages of its development. After the first year it becomes too coarse and open in its habit of growth to make turf of satisfactory quality. Redtop should never be sown alone on the fairway or elsewhere where permanent turf is desired. It is an ideal grass to mix with bluegrass for seeding fairways, since it makes up the turf for the first year, or until bluegrass becomes established. Usually after the first year it gives way almost completely to bluegrass where the conditions are even fairly well suited to the latter.

The great value of redtop is the ability of its seed to germinate quickly and produce vigorous seedlings. It is because of this that it should be used extensively with other grasses, particularly Kentucky bluegrass, for the original seeding of fairways. The bents have the same characteristic, but their seed is too scarce to be used extensively on fairways at this time. One pound of recleaned redtop seed to three to four pounds of Kentucky bluegrass is the standard mixture; but considerable latitude may be allowed in the proportions.

Where red fescue is used either on the fairways or greens, redtop helps out greatly. Red fescue does not form close turf quickly and needs a grass of the habits of redtop as a temporary filler. The

usual proportions of the red-fescue-redtop mixture, either for fairways or greens, is approximately four pounds of the former to one pound of the latter. While redtop alone will persist for a relatively long time under putting green conditions, it soon gives way to creeping bent where the two are sown together.

In the South redtop seed is sometimes sown in the fall for winter putting greens. This is usually done on newly prepared seed beds and sometimes on old Bermuda turf, but it does not appear to be as satisfactory as is Italian rye-grass seed for sowing on Bermuda grass turf. Redtop seed is abundant, relatively cheap, and of good quality. Recleaned redtop seed should weigh approximately 40 pounds to the bushel.

THE BENTS

The correct common names for the bents, seed of which is now on the market, are (1) German or South German mixed bent (this is still sometimes erroneously called "creeping bent"), (2) Rhode Island bent or Colonial bent, depending upon whether the seed is of domestic or of New Zealand origin, and (3) seaside bent. Seaside bent is botanically known as *Agrostis maritima*. There is apparently more than one strain of it. Seed of it is now being harvested in the Pacific Northwest and in Prince Edward Island, so that it may be regarded as a commercial commodity. The commercial strain from the Pacific Coast is apparently somewhat different from that now harvested on the Atlantic Coast. Both strains appear to be good turf-producing grasses but their value for fine turf making is yet largely to be determined. Seed of South German mixed bent comes mostly from the Rhineland region. Some, however, is produced in Holland and elsewhere in Continental Europe. Average lots contain approximately 10 to 15 percent of seed of velvet-bent, usually only a mere trace of seed of true creeping bent, and the remainder, exclusive of weed and other seeds, is seed of the same species of grass as is commonly known as Rhode Island bent. There is no seed of true creeping bent or of velvet-bent on the market.

Rhode Island bent seed at present is harvested only in Rhode Island, although the grass is very abundant in much of the northeastern part of the United States. Colonial bent seed comes from New Zealand, and botanically is the same as Rhode Island bent—that is, it produces the same kind of plants and turf. However, the seed of Colonial bent as it is now on the market contains very much less chaff and other inert matter than does commercial seed of Rhode Island bent.

The bents taken collectively are by far the best of our northern putting green grasses. There are few who will dispute this. They make playable turf quickly from sowing and produce permanent turf that maintains itself better under unfavorable conditions imposed by soil, climate, disease, and play than does red fescue, their closest competitor for putting green honors. There is scarcely a place where red fescue does well that the bents will not do equally well or better, and there are many places where the bents thrive but where red fescue practically fails. The bents will withstand poor drainage better than does red fescue, and likewise continuously high temperatures; consequently, they can be used farther south than can red fescue. Furthermore, the bents seem to be more resistant to the brown-patch disease, which is a very important characteristic.

The supply of the various kinds of bent seed appears to be adequate for present needs.

Preference has been expressed for German bent seed as compared with seed of Rhode Island or Colonial bent. This is due to the fact that it contains a small percentage each of creeping bent and velvet-bent seed, while commercial seed of the other bents does not contain them. Creeping bent and velvet-bent are regarded as exceedingly valuable in putting green turf. On old greens that have been sown with German mixed bent seed there will be found distinct patches of creeping bent and velvet-bent a foot or more in diameter. Some greens are made up almost completely of these patches. On some of the New England courses velvet-bent constitutes most of the turf of the greens, and also covers large areas of fairway. The reason for this is not known. Southward creeping bent predominates over velvet-bent where the two are found together.

The species of bent commonly known as Rhode Island bent, the seed of which makes up the great bulk of seed of all commercial bents, makes an excellent turf for putting greens and fairways. The plants of this species spread, but not so rapidly or in quite the same manner as those of creeping bent or velvet-bent.

Trained seed analysts now can tell the seed of the bents from that of redtop. The ultimate user therefore may be fully protected if he will take the trouble to have samples properly examined before he makes his purchases.

Creeping (or carpet) bent and velvet-bent can be propagated vegetatively. The former lends itself better to this method than does the latter, because it spreads much more quickly by runners or stolons. The vegetative method of propagating creeping bent is becoming very popular for the making of putting greens. Runners or stolons of several strains are now commercially available. These strains differ in the character of turf they produce and also in disease resistance, particularly their resistance to brown-patch. It is suggested that prospective purchasers inform themselves at least in a general way of the differences between the commercial strains so that they may order the one that suits them best.

The Fescues

The common fescues of our Northern golf courses are red fescue and sheep's fescue. There are several others that occur to some extent but they are relatively unimportant. In the past considerable quantities of meadow-fescue seed were used in fairway mixtures, and even now there are some who recommend this grass for the fairway. It is a serious mistake to use meadow-fescue on any part of the golf course, since it is a relatively coarse, tufted grass and not a turf former. The name "fescue" doubtless has aided in placing it among the golf turf grasses, where it clearly does not belong.

Red Fescue.—Seed of red fescue is on the market under two designations, namely, European red fescue and Chewings (or New Zealand) red fescue. The former is produced mostly in Germany and the latter in New Zealand. Whatever their botanical differences may be, they appear to have essentially the same characteristics so

far as their turf-making habits are concerned; therefore the single designation "red fescue" is used here to include both. The seed of the variety known as Chewings fescue (named for a Mr. Chewings) is the kind now most abundant on our market. A careful, extensive, and unprejudiced study of golf grasses in America leads to the definite conclusion that red fescue is a much overrated grass so far as its use in this country is concerned. The reputation which it enjoys abroad and the shortage of good bent seed doubtless have helped to make it easily possible to extend the use of red fescue here. Those who are making a careful study of golf turf grasses are coming to realize that it is not all that its advocates have claimed for it. Red fescue, under the best conditions, makes excellent turf. Its leaves are usually fine, but they are somewhat wiry in texture. This is particularly noticeable in hot, dry weather of summer, and although not seriously objectionable it is not a very desirable characteristic. Red fescue is capable of making both good greens and fairways. It can withstand more shade than can our other common golf turf grasses, and it has the ability to grow on very sandy soil in the northeastern part of the United States. This, however, is not a great asset, as the turf it forms on such soils is not first-class fairway turf. The chief objection to red fescue is that it forms close turf very slowly; and on poor soils, especially poor sandy soils, it has a decided tendency to become bunchy. It is largely because of this fact that Kentucky bluegrass and the bents are very generally preferred to it. Where red fescue has made cuppy or bunchy turf it is a very difficult matter to get it or other grasses to fill in successfully. Hot weather affects red fescue much more adversely than it does Kentucky bluegrass, redtop, or the bents; therefore it can not be used successfully on courses as far south as Washington, D. C., and at that altitude. Brown-patch also seems to attack it more severely than it does the bents. Kentucky bluegrass, it will be remembered, is practically immune to this disease.

Everything considered, red fescue is decidedly second to Kentucky bluegrass as a fairway grass, and to the bents on the putting greens. The cases where it is superior to these grasses are very few indeed. It is by no means uncommon for the bents to crowd out red fescue on the greens and for Kentucky bluegrass to overrun it on the fairways; but no cases have been noted where red fescue has replaced either the bents or Kentucky bluegrass.

Red fescue will not withstand as close cutting as will the bents, because of the structure of the individual plants. The close cutting that will produce the best bent turf is quite too close for red fescue. The germinability of red fescue seed is not very dependable. The seed loses its vitality quickly. It does not remain viable as long in storage as does seed of the bluegrasses, bents, or redtop. Every lot, therefore, should be tested before it is sown. Most of the seed that is on the market is relatively free from other seeds and inert matter; this is particularly true of seed of Chewings fescue.

Sheep's Fescue.—As a grass for the rough on Northern golf courses, sheep's fescue is nearly ideal, especially if it is grown upon poor soil. It forms just about the right kind of bunches to afford the proper penalty to the player. It is also useful on bunkers to produce what are commonly called "whiskers." On most of the older courses in the North there is more or less sheep's fescue on the fair-

ways and some even on the greens. Many of the fairway and putting green mixtures formerly used contained seed of it. It should never be sown on either fairway or green, as it is not a turf-forming species. The use of sheep's fescue should be confined strictly to the rough and bunkers. For the rough it should be sown at the rate of about 50 to 70 pounds to the acre. Seed of Canada bluegrass can be sown with it to advantage. The commercial seed of sheep's fescue is difficult to distinguish from that of red fescue.

RYE-GRASSES

Grasses which grow quickly and seed of which germinates quickly sometimes have a place in the making of golf course turf. The best of such species for Northern golf courses are the rye-grasses—perennial or English rye-grass, and annual or Italian rye-grass. Neither of these is of value permanently; in fact, neither, strictly speaking, is a turf-forming grass, but each is useful as a temporary turf maker in mixtures with other grasses.

Perennial Rye-Grass.—Although resembling Kentucky bluegrass in certain characteristics, including color and texture of herbage, perennial rye-grass (*Lolium perenne*) is very unlike Kentucky bluegrass in its habits of growth. While this seed has been frequently included in putting green mixtures, it has no place on putting greens of Northern golf courses. Its use is confined to certain situations on the fairways and newly cut or filled areas elsewhere that need quick protection from washing. While perennial rye-grass is a tufted grass, it is known to persist for a number of years under putting green conditions, and on lawns it lasts indefinitely. It closely resembles Italian rye-grass in appearance and general habits of growth. The under surface of the leaf in both species is bright green and shiny, thus characterizing and distinguishing them from the other common golf turf grasses.

Heretofore most of the seed of perennial rye-grass was produced abroad. A considerable quantity is now being produced on the Pacific Coast, particularly in Oregon. The seed weighs approximately 24 pounds to the bushel and usually retails at a price appreciably lower than that of Kentucky bluegrass.

Italian Rye-Grass.—In general appearance Italian rye-grass (*Lolium multiflorum*) resembles perennial rye-grass very closely. Furthermore, it serves much the same purpose on golf courses. Although it is an annual species, it nevertheless commonly has a tendency to persist for more than a year under conditions such as are found on fairways. Where quick-growing emergency grasses are needed on the golf course to provide a grass covering for any reason whatsoever, Italian rye-grass is better than perennial rye-grass. In the South, Italian rye-grass is very useful for making a winter covering on Bermuda grass putting greens and lawns. Seed of it is sown on Bermuda grass turf in the fall, and in a short time a very good putting surface results if proper care is given. Heretofore the supply of seed of Italian rye-grass has come from abroad. Recently a considerable quantity has been produced in the Pacific Northwest, which section promises to become the important source

of supply for our American golf courses. The seed resembles that of perennial rye-grass in general appearance but has an awn at the tip which is not completely removed even in carefully milled commercial stocks. In the weight per bushel and price per pound there is little difference between the seed of Italian rye-grass and that of perennial rye-grass. Seed of neither species should be used as an important constituent of turf grass seed mixtures on Northern golf courses.

The Relationship of the United States Golf Association Green Section to the District Green Sections

The success of the local green sections established within the last few years has been such as to induce the United States Golf Association to take active steps in organizing others. The district sections have been of great assistance to clubs in matters relating to their local problems. In this field they have rendered real service. It is hoped that it will be possible to establish district green sections in all of the important golf sections of the country in the near future. Mr. J. K. Bole has been engaged by the United States Golf Association to do this work, and those who are interested in it should correspond with him, in care of Mr. J. E. MacCloskey, Farmers' Bank Building, Pittsburgh, Pa.

The relation of the United States Golf Association Green Section to the district green sections is solely a cooperative one. The former organization exercises no administrative control over the latter in the way of dictating policies or programs or in supervising their activities. It neither selects nor controls their personnel. Experience has shown that the local organizations can render certain kinds of service which it would be unwise, if not impossible, for the United States Golf Association Green Section to render. The United States Golf Association Green Section, however, will keep closely in touch with the district green sections and will cooperate with them in every way not in conflict with its established policy. Clubs should understand clearly that there is no overlapping of ground by these two organizations, that one does not replace the other, and that the district green sections, while assisting in applying locally information sent out by the United States Golf Association Green Section, are not to be regarded as performing the functions of the latter organization.

W. D. VANDERPOOL, *Chairman, Executive Committee,* United States Golf Association Green Section.

R. A. OAKLEY, *Chairman,* United States Golf Association Green Section.

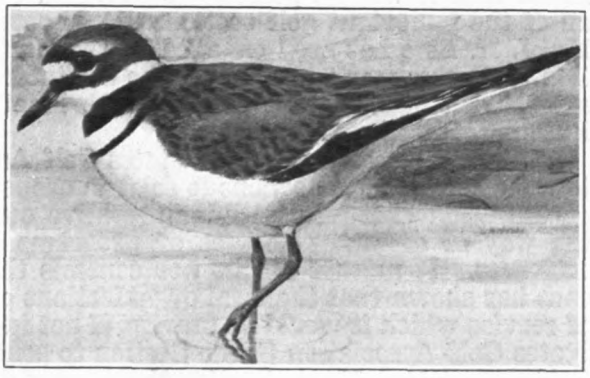
Crawfish abounding in soil are an indication of defective drainage. The best remedy for crawfish is drainage. Where the installation of drainage is impracticable, the crawfish may be kept below the surface by underlaying the soil with 3 by 3 mesh galvanized wire mats at a depth of 16 to 18 inches. The crawfish may also be killed by squirting carbon disulfid into the burrows and closing the holes. The use of wire mats and carbon disulfid is described in THE BULLETIN, Vol. III (1923), page 241.

Birds of the Golf Course

The Killdeer

By W. L. McAtee

A bird the size of a robin on stilts, and which, with those stilts, runs not hops, on golf courses anywhere in our country, is likely to be a killdeer. On closer inspection the bird is seen to be grayish-brown above, and white below, with a black collar, and a black band across the chest. In flight the reddish brown rump and white wing bars are conspicuous. The killdeer has suggested its popular name by its usual piercing cry, but it utters other calls, especially when flying. It likes to make long sweeping flights over its favorite fields and fairways, sometimes calling wildly, a pastime it resorts to by night, especially moonlit ones, as well as by day. On the ground the killdeer steps sedately, or can run swiftly. Single birds or small companies are seen at most times of year, but the parents with their three or four spotted, downy young, form charming family groups in midspring.



The Killdeer

One of the great group of shore birds, frequenters of beaches and shallow pools, the killdeer has so departed from the habits of its kin as to have become preponderantly an upland bird. The smooth sides of pastured hills attract it and golf fairways seem especially made to fit its tastes. It is more than a charming ornament to them also, for it is an active foe of many of the insects and other pests of golf courses.

Various forms of small animal life furnish almost the entire diet of the killdeer, the few seeds and other vegetable objects consumed being taken quite incidentally. Our long-legged friend feeds upon the dung beetles which dig holes and cast up heaps of earth on putting greens; it is fond of ants and earthworms with similar annoying habits; and dotes on white grubs which are anathema to the greenkeeper who is trying to maintain good putting surfaces. Grass-feeding insects collectively are a great drain on the vitality of fairway greenery and their work becomes especially noticeable and vexatious when combined with dry weather or some other destructive climatic influence. The killdeer busies itself more or less the year round in reducing the numbers of such pests, among them cutworms and other caterpillars, grasshoppers, leafhoppers, wireworms, and larvae of craneflies and March flies. Mole crickets which cause damage by their long runways like the moles for which they are named, and crawfishes whose holes and towers of earth can not be tolerated on golf courses, although the "crawdads" themselves seem supremely unaware of the fact, both have a foe in the killdeer.

In short, this bird is a good friend of the greenkeeper and should be protected and encouraged whenever possible. Killdeers are likely to lay their four large, speckled eggs anywhere on open ground, and when a clutch of eggs is discovered, it will help to place a screen over it that will protect it from flying balls or careless feet and yet give the birds free access to it. Preventing cats and dogs from overrunning the course, and checking predatory wild animals, will go far to assure the safety of killdeers and other bird friends of the golf course.

Harping on One String

Whatever its original meaning may have been, the expression "harping on one string" now carries with it an implied rebuke. Individuals are said to harp on one string when they indulge in the repetition of a statement or a thesis to the extent that it becomes tiresome or obnoxious to the listener. Generally speaking, those who harp on one string do so as a matter of habit and without a particular object in view. In such cases little or no good results from it, frequently much harm. Sometimes, however, it succeeds in accomplishing a real purpose regardless of the psychological or verbal protest of the victim.

The Green Section has been accused of harping on one string. It admits guilt, acknowledges the corn, but pleads justification. Time after time THE BULLETIN, in article or paragraph or meditation, has attacked useless, wasteful, and harmful practices and spurious products. Those who have ever essayed the role of educator know that educating the public is a slow process, and that to get a point thoroughly understood it is usually necessary to present it repeatedly and in many ways. There are several reasons for this. Only a relatively small number of individuals see the first presentation. Of those who see it a small percentage catch the full purport of it. A person is not necessarily dense if he misses the point on the first casual reading. Professional advertisers know this. Repetition emphasizes. In time the reader is likely to become impressed, with very little effort on his part. "Plum's Soap" before his eyes at every turn has even been known to improve the sanitary habits of the vagrant despite his predilections. The most highly intelligent reader frequently needs more than one statement of a case to convince him, and further justification for repetition is found in the fact that the personnel of the group to be educated is constantly changing. In the case of the group reached by THE BULLETIN we are pleased to say the number is constantly increasing.

The Green Section has attacked repeatedly and vigorously the use of lime on bent greens, the general use of red fescue as a golf turf grass, and the use of peat—frequently and improperly called "humus." The attack has been well worth while. It has done much to correct a bad condition. It has peeved some, but they have not been those whose interests are the Green Section's first concern. The Green Section has no desire to dogmatize; but dogmatism is a term which can not properly be applied to a proposition susceptible of scientific proof. If applications of lime make it more difficult to maintain good bent turf, or if humus is deleterious to it, these facts

are demonstrable. The repeated calling attention to them may be criticised on other grounds; but it is not dogmatism. No, THE BULLETIN will not discontinue its policy of harping on one string while by doing so it stands a reasonable chance of saving its readers from wasteful or harmful practices or from being imposed upon by the unscrupulous.

Thickening Bermuda Fairways

By C. G. Holland, Danville Golf Club, Danville, Va.

The basis of our fairways is Bermuda grass. As is well known, Bermuda grass spreads by sending out runners along the surface of the ground with joints or nodules every inch or so, which joints fasten themselves to the ground by tiny roots. Should one of these runners become severed from the parent stock, the roots by which the joints are fastened to the ground extend and grow, and the severed runner becomes a parent plant and sends out its own system of runners.

We take advantage of this characteristic of Bermuda grass to make two or more plants grow where only one grew before. Well into the growing season after the runners have become extended, we use an ordinary farm disc harrow to cut these runners off from the parent plant. The discs are set almost straight so that they will cut a gash about one-half inch into the surface of the soil but so that they will not turn over the sod. We then harrow over the surface of the fairway in four directions.

After cutting the land in this way it would be fine if we could topdress it; but as our club is always short of funds that is a luxury we can not afford; so we merely roll the fairway with our tractor equipped with wide wheels, which closes the gashes to a large extent, and we find that after the first hard rain no evidence of the harrowing is left.

We have used this method for three or four years and found it very effective in thickening up our Bermuda turf.

In this connection, we will say that the site for our golf club was selected because of its availability and accessibility, and a pretty grove of oak trees that would make a pretty site for the clubhouse. No thought whatever was given to the kind of ground or fertility of the soil, with the result that we bought "the poorest farm in Pittsylvania County." Our soil is a stiff, whitish, gravelly clay, known locally as "crawfish land," on which the best farmer in the country could not make a living.

After the first two years we almost despaired of ever being able to get even fairly good turf, but by a lot of hard work by a small force we have very creditable fairways, and we attribute a large part of our success to the above method of cultivation.

Dr. Oakley in Europe.—Dr. Russell A. Oakley, chairman of the Green Section, has been sent by the United States Department of Agriculture as a delegate to the International Institute of Agriculture which is convening at Rome. It is his hope, while in Europe, to visit the bent seed producing regions of Germany and also to study golf turf on courses in Great Britain and on the Continent.

The Relation of Mushroom Soil to Brown-Patch

By John Monteith, Jr.

Recently there has been advanced a theory which attributes brown-patch to the use of mushroom soil as a topdressing for putting greens. During the past two years this explanation of the occurrence of brown-patch has had a number of advocates, especially in the vicinity of Philadelphia. It is claimed that brown-patch, particularly the small type, is found on greens which have been topdressed with mushroom soil, but not on other greens. Greenkeepers explain that they have observed on piles of mushroom soil the same fungus which they have associated with brown-patch, from which they infer that if this soil is used for topdressing it will contaminate the greens with the brown-patch fungus.

To test this theory some mushroom soil which was said to have produced the disease was obtained from a club near Philadelphia and tried out at the Arlington Turf Garden during the summer of 1925. Small squares were marked off; half of them were topdressed with the mushroom soil and the others left untouched. A few cases of brown-patch developed in both. There was therefore no evidence that the disease was caused or carried by the mushroom soil. However, since these tests at Arlington were limited, they are not regarded as conclusive proof that there is no correlation between the application of mushroom soil and an outbreak of brown-patch.

Although the mushroom soil explanation of brown-patch has been supported by a few men who are careful observers and whose opinions are not formed without foundation, it is likely that some misleading conclusions were drawn due to the assumption that the fungus found on the piles of mushroom soil was the same as the one found growing over the grass blades at the edges of developing brown-patch, which is actually the cause of the disease. It should be remembered that there are thousands of different fungi which without the aid of a microscope can not be distinguished one from another. Most of these live on decaying animal or vegetable refuse and may play an important role in plant life by breaking down manures, dead leaves, and stems in the soil, changing them into a form which can be used as food by growing plants. Comparatively few of the fungi which grow in soil are able to injure growing plants.

The common edible mushroom is the fruiting body of a fungus. This fungus grows through the soil in the form of very fine threads (mycelium) which in a way act as roots. After considerable time, when the mycelium is sufficiently developed, it is able to produce the mushrooms. Mushroom soil, when discarded and sold to golf clubs, is therefore full of this cobweb-like mycelium. If left in a moist, shaded place, a fungus will grow out from the soil, and although very similar in appearance to that found attacking grass it is nevertheless perfectly harmless. The occurrence of a fungous growth on a pile of mushroom soil or other compost should not be considered dangerous. Of course it is possible that the one causing brown-patch occurs in mushroom soil, together with the common mushroom fungus; but this possibility is remote; and it is no more likely to be found in this soil than in any other soil used for topdressing.

Mushroom beds are made up almost entirely of stable manure in which the fungus is allowed to grow for some time. It may be possible that some of the applications of mushroom soil have been too heavy, and that the manure may have caused a burning, which has been confused with brown-patch.

The question as to what influence mushroom soil actually has on the development of brown-patch can not be answered finally at present. We do know that it alone is not the cause of brown-patch, for it need only be pointed out that the disease occurs on hundreds of courses where mushroom soil is never used. Under certain conditions there is a possibility that it may make grass more subject to an attack; but to just what extent this happens, is still a question. There is very little evidence available to justify any prejudice against the use of mushroom soil from the standpoint of brown-patch infection.

The Mosquito Menace

By J. A. Le Prince, Gorgas Memorial Institute

I am often asked if anything can be done to reduce the number of mosquitoes on our golf courses, and am glad to state that in many instances we can have freedom from this pest at a reasonable cost. The first thing to do is to determine the nature of the local problem. Although we have dozens of kinds of mosquitoes there are only a few that are a continuous pest, and with proper control measures the grounds of the country clubs can be kept relatively free. The owners of beautiful country homes, as well as members of golf clubs, have not yet given much thought to this subject, and consequently it is not unusual to find everybody unknowingly assisting the pestiferous mosquitoes to multiply more rapidly.

A few years ago at an estate on Long Island I found that the kind of mosquitoes that carry malaria were breeding near the residence, and the owner did not know how it happened that her mother came down with malaria. An investigation showed that each evening during the summer some Italians made a practice of resting under a tree near the lodge gate not far from the house. The local Anopheles were infected with malaria by biting these laborers, who were probably newly arrived from Southern Italy, and later transmitted the infection. It would have been very easy to eliminate the sources of these malaria-conveying mosquitoes, but nobody bothered about it until the lady was seriously ill.

Where sufficient local interest can be aroused, an active committee of workers can be formed to look into the local problem, to have a survey made, and to determine the source of the pest and the best means of its elimination.

It is not uncommon for the public to make a wild guess at the main source or sources of mosquitoes, and the larger and more distant they can make it, the more readily it is accepted as a fact.

In some instances along our coastal plain we have during the summer a series of visits in mass formation from the salt-marsh mosquitoes. This species breeds not in the salt water, but at the edges of the salt-marsh lands. Sometimes it ranges out for a number of miles from its source and travels with gentle air currents. This is

the kind that has given the public the impression that all mosquitoes are picked up and blown by the wind, a theory which sounds plausible but which has no foundation in fact. This mosquito is not found in fresh-water swamps, but appears to like certain alkali waters as well as the brackish sort.

Six years ago it was painfully prevalent at West Point, Va., which is a nice little town near extensive salt-marsh meadows. A survey of the salt-marsh lands indicated that its source was fortunately of very limited extent, and at little expense it was eliminated and has not returned.

For unknown reasons the counties in the eastern section of Long Island have not yet seen the wisdom of eliminating this mosquito; and consequently it travels voluntarily with light easterly breezes and worries the people in the western counties where its breeding places have been put under control.

If the golf clubs in the mosquito producing section or eastern counties of the island should get together on this problem of the elimination of the *Aedes solicitans* they would enhance property values and bring increased income into the county treasury from the development that would follow. They would then convince everyone that mosquito elimination is an excellent investment for the county to make.

Fortunately it is only in a small section of our country that we are bothered with the brackish-water-breeding, long-distance-flying mosquito. At most of the golf clubs I have visited the prevailing type of mosquito is of local origin and too frequently comes from man-made sources.

It is true that the quiet places of fresh-water streams and natural drainage valleys produce mosquitoes; but when we locate our homes and clubs near them we at once use them to carry away waste waters from buildings and then wonder why the mosquitoes begin to increase. The greater the pollution of the streams or other bodies of water, the more prolific become the *Culex* mosquitoes, which might be called the dirty-water variety.

Sections of slowly moving streams that formerly produced only a few mosquitoes will, after becoming polluted with stable or house wastes, produce billions of them.

This species will also be found numerous in or near septic tanks. We can really call them man-created mosquitoes. We consider ourselves much more intelligent than they, and yet we continue year after year to make conditions much more favorable for their propagation, and then say things because they are with us.

If three barrels are placed together, with barnyard manure in one of them, it will be easy to see how many more mosquitoes come from the dirty water as compared to the number in the cleaner water.

The extreme flight range of the *Culex* is less than a mile, and as frequently noted is less than half that distance, so the control problem is often not as difficult as may at first appear.

In connection with many mosquito campaigns I have had occasion to visit the grounds of golf and country clubs; and the only part of the problems that I did not understand is why so many intelligent people continue to permit the mosquito to make life a burden, when in most instances visiting mosquitoes may be made scarce enough to be negligible.

At the present time it is safe to say that the pestiferous mosquito knows more about us and our habits than most of us do of hers. It is possible for any club to determine the exact nature, extent, and location of the source of mosquitoes that are a local nuisance. These places can be plotted on a map, and in most instances kept under control or eliminated at relatively low cost. Very frequently the greater the complaints the nearer is the mosquito source.

An organization in Massachusetts claims that there are three stages of emotional development in preparing to eliminate mosquitoes:

1. We just swear.
2. We swear somebody ought to do something.
3. We swear we are going to do something ourselves.

Twenty-five years ago there was a prominent citizen in Havana who told General Gorgas he thought the campaign against the yellow-fever mosquito was not lessening the number of mosquitoes, as there were as many as ever about his house. I found that this gentleman had a private mosquito hatchery in a water container in a box of books.

In one of our large southern cities, formerly a hotbed of pestiferous and disease-bearing mosquitoes (and where, by the way, the golf club was also raising a wonderful mosquito crop on their own grounds), there is now mosquito freedom, and the exorbitant maintenance cost is 4 cents per capita per year.

There are two steps necessary in all successful mosquito control campaigns: First, make up your mind the mosquito must go; second, find out what your local problem is and the quickest, cheapest, and best method of attack.

Foreign golf associations.—Recently the United States Golf Association has had requests from Japan, Mexico, and Argentina for copies of its constitution and by-laws and other data suitable for use as a basis for organizing golf associations. The Japan Golf Association is understood to be operating effectively already.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE BULLETIN OF THE UNITED STATES GOLF ASSOCIATION GREEN SECTION, PUBLISHED MONTHLY AT WASHINGTON, D. C., FOR APRIL 1, 1926.

District of Columbia, ss:

Before me, a notary public in and for the District of Columbia, personally appeared W. B. Lydenberg, who, having been duly sworn according to law, deposes and says that he is the business manager of The Bulletin of the United States Golf Association Green Section and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, United States Golf Association Green Section, Washington, D. C.; editor and managing editor, R. A. Oakley, Washington, D. C.; business manager, W. B. Lydenberg, Washington, D. C.

2. That the owner is The United States Golf Association Green Section, a corporation organized and existing under the law not for profit and having no capital stock.

3. That there are no outstanding bonds, mortgages, or other securities.

(Signed) W. B. LYDENBERG, Business Manager.

Sworn to and subscribed before me this 9th day of April, 1926.

(Seal) (Signed) BERNARD CONNOR.

(My commission expires August 6, 1927.)

QUESTIONS AND ANSWERS

All questions sent to the Green Section will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column each month. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Section.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

1. Poa annua; its behavior and control.—Are there different strains of *Poa annua* having different habits? Is it ever an annual plant in this latitude under putting conditions? Our greens seem to be about nine-tenths *Poa annua,* yet at no time during the past few years have they ever assumed a patchy appearance, such as would result in case a considerable proportion of this *Poa annua* should die off. In my own experiments with bent turf in its second year, there are clumps of *Poa annua* which at least lived through last summer and are still thrifty, having quite heavy stems and leaves, and its pale green color is a disfiguration in a dark green turf. If *Poa annua* dies off every summer there might be a chance of retarding its germination by a heavy growth of bent grass; otherwise there would seem to be no reasonable way to eradicate it. (New York.)

ANSWER.—Northward *Poa annua,* or at least some individual plants, behaves as a perennial, as a single plant will live one or more years, going through the entire summer season. This seems to occur also as far south as Washington, though rarely; where, however, the great majority of the plants behave practically as winter annuals, dying off in the summer. Where *Poa annua* is once thoroughly established we do not know of any method of getting rid of it except by hand-weeding at great expense. If, on the other hand, putting greens are weeded free of it at the beginning they can be kept free of the grass at very little expense for weeding. This has been done at the Old Elm course, near Chicago, and we have done the same thing on our experimental plots near Washington without any difficulty, although *Poa annua* is very abundant here.

2. Controlling Dallis grass.—We are troubled with Dallis grass in our fairways and immediately around our greens. This grass is coarser than Bermuda grass and very hard to control with the mowing machine. So far we have found no means of controlling it except digging it up by the roots, which is expensive and otherwise objectionable. (Arkansas.)

ANSWER.—In the area in which Dallis grass (*Paspalum dilatatum*) occurs, which is essentially the cotton belt, it is a rather undesirable plant on golf courses. This is true especially on the richer lands of the lower Mississippi Valley. We know of no other way of handling it except by cutting out the plants and as far as possible keeping the grass from forming seed both on and in the neighborhood of the course.

Meditations of a Peripatetic Golfer

Watch your step, or the man who says brown-patch did not exist before greens were planted by the vegetative method will sell you some Buncombe's Bunch Grass.

It has been said that, "It was about time the Green Section found a cure for brown-patch." By the same method of reasoning, medical science should long since have found a cure for cancer.

Better strains of creeping bent may be found, but be sure you test your selections for about four years under turf conditions before you conclude they are better than the best now available.

Lime has its uses in agriculture, but its place in greenkeeping is doubtful. Certainly it is not on bent greens, nor as a topdessing on fairways—even on bluegrass fairways.

Wrong methods in greenkeeping ultimately will abolish themselves. But what a loss and disappointment they cause in the meantime! Critical investigation will hasten their demise. The Green Section believes in giving them short shrift.

The lawn mower made modern greenkeeping possible, but the gas engine and recent developments in putting green turf have given the mower manufacturers something to think about.

Don't expect good greens unless your water system is adequate, for, after all, over 75 percent of turf's nourishment is derived from air and water.

Putting on a green too seldom topdressed might be likened to playing billiards on a table without a true surface under the cloth. There's a great difference between a real putting green and a soft, spongy mat of beautiful turf.

It is considered better sportsmanship to kill the worms in a putting green rather than the birds that feed on them.

He is a wise man who waters his greens today instead of waiting for the rain that may not come.

The successful greenkeeper never puts off until tomorrow what should be done today.

Planting stolons and seed together is like betting on both red and black at the same time.