Bulletin *of the* Green Section *of the* U. S. Golf Association

Vol. IV Washington, D. C., September 17, 1924 No. 9

A MONTHLY PERIODICAL TO PROMOTE THE BETTERMENT OF GOLF COURSES

CONTENTS.

Published by the Green Committee of the United States Golf Association, 456 Louisiana Avenue, Washington, D. C. Editorial Offices: P. O. Box 313, Washington, D. C.

Subscription price: To golf clubs that are members of the Green Section of the U. S. Golf Association, $4.00 per year (included in membership fee).

Entered as second-class matter December 16, 1921, at the postoffice at Washington, D. C., under the Act of March 3, 1879.

BROWN-PATCH

GIVE US YOUR 1924 EXPERIENCE WITH BROWN-PATCH

We are anxious to learn of your 1924 experience with brown-patch, both the large and small kind.

Please write us fully, giving us (1) the date or dates of appearance, (2) severity of attack, (3) measures used to combat, and particularly (4) the results you have gotten from any of the new fungicides.

It is planned to publish a full report on all the brown-patch data for 1924. Your cooperation is wanted in gathering information on which to base our report.

Strains of Creeping Bent

There seems much haziness in the minds of our readers as to just what is meant by a *strain* of creeping bent.

Many letters reach us, usually with a specimen of the grass, asking us to identify the strain. This is next to impossible without further data. We may hazard the statement that the specimen looks like the Washington strain, but to say it is identical with that, or with any other, is not usually possible.

In the work at Arlington we have tested more or less thoroughly about one hundred strains of creeping bent. There are in existence perhaps five times this number. They differ in color, texture, disease resistance, vigor of growth, etc. Many strains were discarded because they were too susceptible to disease; others because they lacked vigor; still others because they grew too fluffy.

Each one of the strains is the vegetative progeny of a single plant, and therefore "pure,"—that is, perfectly uniform. Such a *pedigreed progeny* is what we refer to as a strain. For example, the Washington strain is the progeny of a single plant, or rather of a plug out of its center, selected for brown-patch resistance from a putting green on the Washington Golf and Country Club course. The Virginia strain is originally from the same course. The Vermont strain was selected from a putting green on the Ekwanok Country Club course at Manchester, Vermont. Metropolitan bent is from a golf course near New York City. Columbia is a strain originally found on the Columbia Country Club course, and is the strain used to plant the famous No. 9 green. Seaside bent is from the salt marshes near Revere Beach, Massachusetts, where it occurs in large areas, perhaps all of one strain.

Growing side by side, either in rows or in turf plats, the differences in these *six* strains are striking. They have been saved as the best out of about 100 strains tested. If a club has nursery rows known to be of one or more of these bents, the strain can by careful comparison be identified. If it is a wild bent or one casually selected, it can not be identified at all, other than by pointing out its superficial resemblance to one of the tested strains. Two bent strains may look superficially alike and yet in actual tests prove totally unlike.

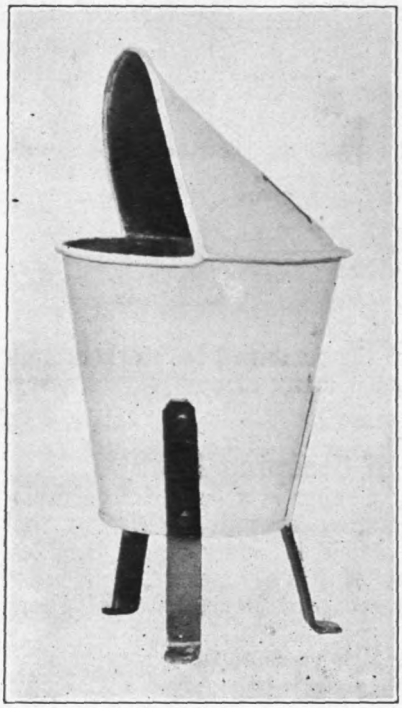
To summarize concisely, a strain of bent named by us is a thoroughly tested and pedigreed culture. It is only by keeping its pedigree straight that one can be sure of any strain.

Some of these strains may prove to come true from seed, but this is as yet uncertain. During the present season seed has been raised from each of several tested strains, and in two years' time it will be possible to determine whether or not any one strain breeds true to seed.

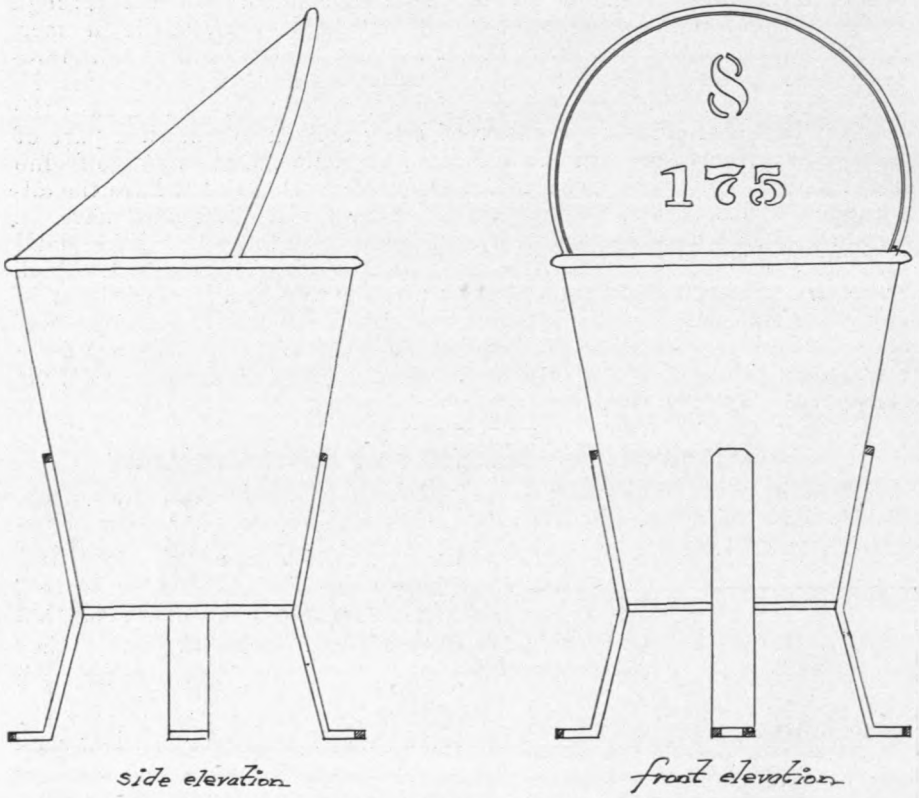
Getting Outside Employment for Your Men During the Winter.—We are believers in cheaply operated golf courses. It is well known that men will work for lower wages on an all-the-year-round job than on a seasonal job. We have solved the difficulty of carrying our good men through the winter in the following manner. One of our men runs a radio drill through the winter and at the same rate he gets for outside work in the summer. Another works in the paint-shop of our factory, and two others run elevators. Our greenkeeper joins our building-maintenance crew, as he thoroughly understands the mixing of concrete. So we do not have the trouble that most courses encounter of being obliged to put on a part of their crew green every season. I realize, of course, that every golf club is not tied up with a big corporation, as we are, and does not have the advantages in this respect that we have, but most golf clubs must have, as members, men who are connected with large corporations or have small businesses of their own, who, it seems to me, could be approached to give these men winter jobs. I do not know whether this idea is carried out in any other club, but it seems to me it would be feasible. It gives the golf club a chance to furnish satisfactory employment to its maintenance force during the winter.—*W. R. Hurd, 2d, United Shoe Machinery Athletic Association, Beverly, Mass.*

Combined Tee Marker and Sand Container

Messrs. O. S. White and W. J. Rockefeller, of the Inverness Club, Toledo, Ohio, have furnished THE BULLETIN with the accompanying photograph and drawing of the combined tee marker and sand container in use at the club. They write that the marker is made of galvanized sheet iron and that the supports are 1-inch strap iron. They were made by a sheet-iron worker at a cost to the club of $1.60 apiece. They are large enough to contain sufficient sand for the play on Saturday and Sunday and small enough not to be unsightly. They have to move their markers at the club every day and replenish or moisten the sand if necessary, but the containers can be moved by one man easily and do away with much hard lifting. They keep no water at the tees, using about nine ball washers scattered around the course and endeavoring to encourage the use of individual ball washers. Mr. White adds: "The expense of upkeep is lessened materially, doing away with the cost of expensive sand and water tee boxes, as well as the tee plates. They also do away with towels, which item alone in laundry and lost towels amounts to a considerable sum during the season. From a sanitary standpoint, they eliminate foul water, which accumulates in the tee boxes, and fouler towels, which are apt to spread disease. We



have had this brought home to us this season very forcibly, as we are having a smallpox scourge in this part of the country. They have value from an artistic viewpoint, as our tees are free from all unsightly encum-



brances. The members of the club take to the combined tee markers and sand containers like ducks to water. A great many of our players carry their own ball washers.''

A Reporter's Weird Tale of Creeping Bent

The following item from a western newspaper is a beautiful example either of the difficulty of getting information straight or else of the reporter's tendency to exaggerate. The article is really funny, besides being remarkable in that nearly every statement is erroneous. Evidently the reporter imagined we belonged to that group of freaks termed ''plant wizards.''

''A new variety of lawn grass which is said to combine the beauty of blue grass with the hardiness of Bermuda or buffalo grass is being given a thorough test by Mr. A——— at his home, ——— street. The new plant, which is cross between blue grass, buffalo, and Berumda, is called creeping bint*, and is being

*The word ''bent'' is spelled ''bint'' throughout the article.

distributed to a few persons throughout the country, by the United States Department of Agriculture.

"Mr. A——— is one of the two men in Kansas to get samples of the grass from the department, and it was by an odd stroke of good fortune that he happened to be one of the two. Some three years ago, seeing in an agricultural journal an account of the government's project of crossing the three grasses, he wrote to Washington, asking for some of the roots.

" 'I went out and dug up my parking and got ready to plant the stuff,' said Mr. A———.

"Three years later, or early this spring, he received the coveted roots, together with instructions as to how to plant the grass. Creeping bint was not ready to distribute when Mr. A——— first wrote to the government, and even now the government does not have any more of the roots ready to give out.

"When the cross was made between the three grasses, it destroyed the seed producing ability of the plant, and so the roots are the only means of propagation. In five years' time, however, the grass will start producing seed again. It takes that long for regeneration.

"Mr. A——— is very enthusiastic about the new sort of grass. It grows much more thickly on the ground than does blue grass, and yet has the same deep, rich color. So thick does creeping bint cover the ground that it absolutely chokes out all other forms of vegetation.

"But one of its best qualities is its ability to withstand both the shade and the sun and to grow profusely even in a semi-arid climate. The cross with buffalo grass, the native vegetation of this part of the country, gives it this last mentioned quality.

"An odd quality of the grass is that it is elastic. A strand of the plant stretches much like a rubber band, showing its tough fiber.

"Creeping bint remains green until Christmas time and freshens up again early in the spring, thus retaining the good qualities of blue grass.

"Mr. A——— intends eventually to plant his entire yard in creeping bint. He plants it in rows and it spreads over the entire plot quite rapidly, each joint forming a root and growing into the ground. After Mr. A——— gets his own plot well started, he intends to sell the roots to others who wish them. He has already had considerable demand for samples. Anyone who wishes to see the new grass can do so by going to Mr. A———'s house. The parking already bears a thick mat of grass, although it has been only a couple of months since the roots were set out.

"It is believed that creeping bint will prove a wonderful boon to towns in semi-arid climates—towns which wish to have pretty lawns in spite of the hot sun and dry weather."

Mixed Fertilizers

Mixed or so-called complete fertilizers contain all three of the food elemets regarded as most desirable to add to the soil. These are nitrogen, phosphorus and potash. In the work of the Green Section the nitrogenous compounds have been found the most effective; indeed, no conditions have yet been encountered where it seemed at all desirable to use either potash or phosphorus. The Green Section has consistently urged against the purchase of mixed fertilizers. The reasons for this are four: (1) The formula is usually not given to the purchaser; (2) the potash and phosphorus contained in the mixed fertilizers are not needed—usually, at any rate; (3) fertilizers that are acid in character are most desirable for turf; and (4) mixed fertilizers are usually more expensive.

Recently several manufacturers have put out mixed fertilizers acid in character, containing a high percentage of nitrogen and a low percentage of both potash and phosphorus. The argument for the use of such a mixture is that it guards against any possible harm resulting from a deficiency in either potash or phosphorus. Theoretically the argument is valid, but, as before stated, the Green Section has not as yet found any cases where good responses on turf were obtained from either potash or phosphorus.

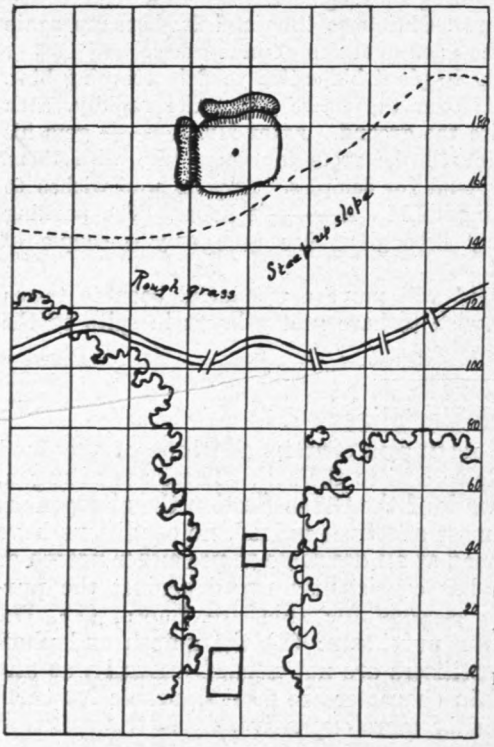
If you do use mixed fertilizers, it is urged that you use one that is acid in character and contains a high percentage of nitrogen or "ammonia" and a low percentage of both potash and phosphorus. The Green Section thinks that every manufacturer should be perfectly willing to tell the purchaser exactly what his mixture contains from both chemical and physical standpoints.

It is altogether likely that such mixtures as are described above will be entirely satisfactory on the fairways. For the putting greens the Green Section can not, in the light of present knowledge, advocate the use of either potash or phosphorus even in small percentages.

Boosting the Green Section—The Mankato Golf Club, Mankato, Minnesota, prints on its score cards the words "Member, U. S. G. A. Green Section." We hope other Green Section clubs will do the same, so that the players may at least learn what the Green Section is, as they will be pretty sure to ask.

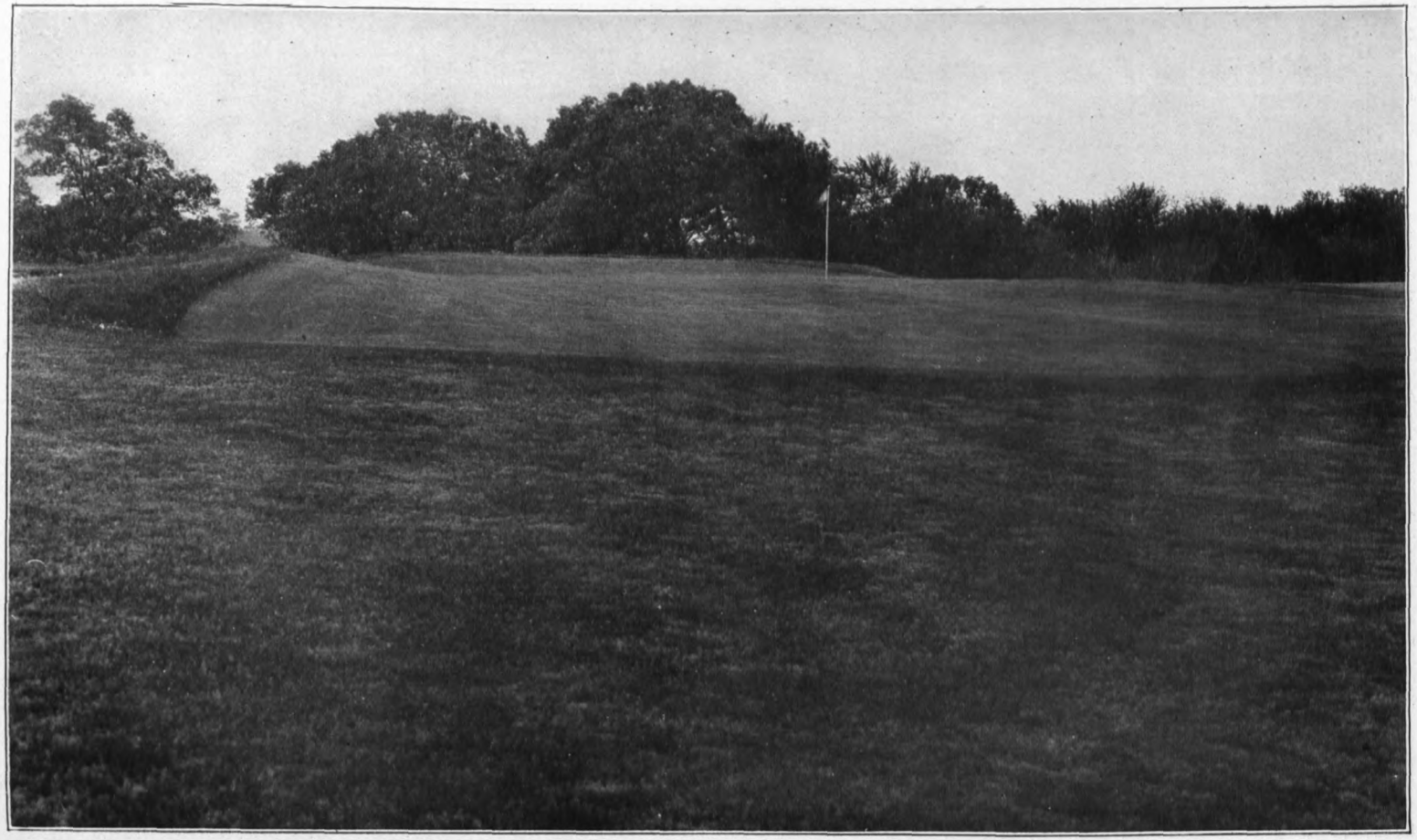
Instructive Golf Holes XII

No. 2, Agawam Hunt Club, Providence, R. I. 164 to 195 Yards



An impressive hole, in which the shot from the tee is over the deep valley of a brook fifty feet lower than the tee. Both slopes of the valley or gorge are steep, the putting green lying just past the rim of the gorge. The hazards are all natural except for a sand bunker to the left of the green and a similar one back of the green. In playing this hole the shot must carry to the green, or nearly so, as the steep slope of the gorge effectually cuts out a running-up shot.

Hole No. 2, Agawam Hunt Club. View from tee.



Hole No. 2, Agawam Hunt Club. Close-up view of putting green.

A Plea for Better Care of Equipment

By William M. Noble, Chairman of Green Committee, Woodland Golf Club, and Chairman of Massachusetts Golf Association State Green Committee

The most important business department of any golf club and of most country clubs is the department having charge of the golf course. A good greenkeeper, efficient and contented men, and good equipment in good condition are the essentials of this department. However well chosen may be the greenkeeper and his men and equipment, really satisfactory course conditions can not be maintained unless the equipment itself is of the proper kind and kept in prime condition. It is to this subject that the present article relates.

Let us consider, first, ordinary hand tools as distinguished from grass cutting apparatus, machinery, and rolling stock. Assuming that no greenkeeper would endeavor to work his men with broken or rickety tools, we come to the everyday condition of ordinary implements, such as spades, forks, rakes, and hoes. It is probably fair to say that ordinarily no attention is paid to the working edges of such tools, and yet a great deal of labor is wasted by lack of such attention. To illustrate, take the ordinary spade. Two workmen are sent out to turn over a piece of turf or loam. One of them has put the edge of his spade against a grindstone or emery wheel and given it a chisel bevel, so that the cutting edge, instead of being perhaps a sixteenth of an inch or more in thickness, is nearer a hundredth. The other goes out with a spade which has been used for some time but had no such attention. Obviously the sharpened spade can be driven down with less power than the other. The difference will show plainly in a day's work, and, multiplied throughout a season, will show in real money.

The same point carries through similar tools. Oftentimes it becomes advisable to rake putting greens preparatory to surface seeding and dressing. A rake, the teeth of which are so blunt that a considerable pressure upon the rake stale is required to make them bite, is a labor-wasting tool compared with a rake having sharp teeth, and it does poorer work. Carried through several days upon the greens, this means a substantial loss which new rakes or a bit of attention at the emery wheel would avert. I am not suggesting knife edges nor needle points, but I mean edges and points which are normal for such tools.

Now let us look at cutting tools, such as sickles, scythes, and mowing machines. Every one has a general feeling that such implements should be kept sharpened, but it too frequently happens that men do not take pains to examine the tools or machines carefully and give the proper attention where necessary. Hand mowing machines may be sent away to be overhauled and sharpened once or twice during the season. They come back and we say "that's that" and pay no further attention until the next fixed time for overhauling. It is forgotten that from the time such blades are sharpened the edges begin to go back and continue going back. Some knives become dull more rapidly than others, on account of differences in steel or the amount of grit encountered while at work; but they all travel the same route more or less rapidly. The only sound policy is to have such edges examined frequently and to have every blade of every machine kept keen all the time. Here again the result will be less fatigue and better spirits on the part of the men, a more even carpet of grass upon the greens, and reduced expense.

Furthermore, there is too much carelessness in accepting results when the machines have been supposedly overhauled and sharpened. Great care should be taken by the greenkeeper to examine every blade of every mach-

ine whenever it has been sharpened, whether at his workshop or at the shop of an outside mechanic. Every machine should be known to be right before it is put into use. It is often of value to take several mowers to one green and try them out side by side. One will do better work, another can be pushed with less effort, and so on. Such comparisons will speedily show the way to valuable corrections.

The same things are true regarding power mowers for fairways; but they need even more careful and constant attention, because they are drawn over rougher ground by heavier power, which necessarily wears the machinery more severely. The difference between good fairways and poor ones may often be traced to the single fact that the cutting edges upon one course are kept clean and well adjusted while those upon another are allowed to become dull or poorly adjusted, or both. A fairway well mowed does not need to be mowed as much as one poorly mowed, and it will always be in better condition. In short, sharp blades save waste and create values.

If men are sent to putting greens with dull weeding knives, they will not do as much work nor will their work be done as neatly as if those knives were sharp. A hole cutter will make poor cup holes if the edges of the cutter are not properly beveled and sharpened. A hand turf cutter which is dull compels a man to step on it twice to sink it through the turf where, if it were sharp, once would send it to the hilt. Any workman must waste an hour or more per day with such a tool. That hour costs fifty cents or more. In a week, the loss is three dollars per man. Multiply that by your number of men and by the number of days in the season. Your figures will be fallacious, because turf cutting does not go on all the time; but they will show something, because the principle does go on all the time in all kinds of work. Why use a breaking-up plow with a dull colter? It means a clogging plow, exasperated men, nervous horses, poor work, and wasted money. Why make two strokes with a dull hoe when one stroke with a sharp one would do the same work?

There is nothing new in all this; the point is, that many of us are careless about using the knowledge we already possess. Our attention needs sharpening.

Another place where we need tuning up is in the matter of keeping machinery lubricated. A greenkeeper may be well judged by the condition of his oil bearings and cutting edges. Indeed, if the chairman of a green committee considering candidates for a position as greenkeeper would examine the equipment which the candidates had been taking care of and learn the condition of their cutting blades and machinery bearings, it would be of greater value than to do a lot of running around in looking up references as to personal character, although both points ought to be investigated.

In too many golf shops, the arrangements for keeping machinery oiled are haphazard. One finds a much dented oil drum in a dirty corner and a few dirty oilers on a window sill from which oil is dripping to the floor. Where such conditions are found, it may be taken for granted that the machinery itself is not being kept properly cleaned and lubricated. If a man is sent out with an oiler the nose of which is gummed with dust and stale oil or pinched flat, the machinery with which he is to work will ordinarily show corresponding dirtiness and bad conditions. Every such condition means waste of man-power, needless destruction of machinery, inferior turf condition, and overcost of course upkeep.

Machinery can not take care of itself. It must be looked after in every way. Close attention should be paid to keeping the cylinders and

carburetors of motors clean and well adjusted. Every knock and rattle should be promptly taken out, every worn or broken part should be promptly replaced. This is essential work and can not be neglected without inevitable waste and damage. Why use a fertilizer spreader which has been allowed to rust so that instead of doing crisp work it drags and bungles the job? A pinch of dry graphite between the slides would probably reduce the operating power by half and improve the results proportionately. Why keep on using a putting green roller that has picked up moist worm casts which have rusted on and made the surface of the roller bumpy? Such a roller is on the way to ruin; and so are the putting greens which are in charge of a man who permits such conditions.

Why push valuable equipment into a heap in a shed to rust and dry out through the winter when with a little labor those same tools can be cleaned up, the metal parts oiled, and the woodwork painted so that in the spring the workmen will have bright, clean, keen tools with which to work, and be benefited by the good influence which tools in good condition inevitably produce?

I sometimes think that next to a good greenkeeper, the best single individual employee a golf club can have is a man who has the knack of keeping tools well repaired and well sharpened and who loves to do that work. In practical experience, it has been found of great advantage to arrange the working time of such a man so that when the workmen deliver their implements at the end of the day he can spend some time in going over them and bringing them all up to the standard of good working efficiency. Two or three hours per day spent by one efficient man in this way tells through all the work of all the men all the time.

The loss to golf clubs resulting from neglect of tools and machinery, with attendant labor discontent and necessity of renewing equipment too often, is really serious. Having in mind conditions I have seen when nosing around in greenkeepers' sheds and watching men at work outside, I can not believe that this loss averages less than two or three per cent of the budgets. This means a clear waste of $500 or $600 per year to clubs having green budgets of $20,000. I believe that in some clubs the loss approaches five per cent, or $1,000 per year. These figures look large on paper; but let the man who doubts get into direct contact with the workmen and machinery and expense bills of several clubs, comparing the poorly managed ones with the well-managed ones, and he will soon become convinced that a substantial and avoidable waste is going on all the time.

The whole matter comes to this, that it is not enough for us to realize in a vague and general way that tools and machinery should be kept sharpened and oiled and in good repair. We must get down to actual daily conditions and see to it that everything is actually right all the time; and therein lies a pressing duty upon all green committees and greenkeepers.

Golf Turf in Britain

By C. V. Piper

The beauty of British grass turf is proverbial. Rural England is a lovely country, which has often been likened to a great park—a large greensward with noble trees and scattered groves. This is the impression that Britain makes on the minds of most travelers, and with them we agree. On the whole, the grass turf of Britain is far more beautiful than that of the United States. There is a notable absence of areas of land

covered with coarse grasses and weeds, the unkempt sort of places so familiar to us.

When, however, one studies the turf critically, there are other things to be said. On pasture lands, parks, lawns, etc., where the turf is kept short, the dominant grasses are English common bent and red fescue, or in the highlands often sheep's fescue. The two former grasses get along well together on all kinds of soils, in marked contrast to their behavior in this country. The English common bent is a different grass from Rhode Island bent and apparently is not introduced into the United States. On the heavier acid soils of Britain, in old grass turf the bent tends to be dominant, but there is always more or less fescue. On the lighter, sandy soils there is a larger proportion of fescue, but rarely more than half of the total grass. Other turf plants that in places at least are common include crested dog's-tail, sweet vernal, white clover, and very often *weeds*.

The natural grasslands nearly anywhere in Britain will, if mowed, make good, playable golf turf. In fact, on many courses, both seashore and inland, the turf is purely natural in the sense that the land was not plowed nor sown to produce the grass. It is probably on account of this fact that relatively little study has been given to the growing of superior turf in Britain. Broadly speaking, the turf is that which nature provides, not only without aid, but in some cases at least, in spite of poor greenkeeping.

The pure or nearly pure fescue turf, of which so much has been written, does not exist except naturally in highland areas or on some of the newly built courses on sandy land. Some of the latter have very excellent young turf, which with intelligent care can doubtless be thus kept indefinitely.

One of the surprises in studying British putting greens was the rarity of velvet bent and of creeping bent. Only four small patches of the former were seen. Creeping bent plants were observed on some of the greens on three courses. Apparently South German bent seed has never been much used in Britain, otherwise the scarcity of the splendid strains of velvet bent and creeping bent which come from the Rhineland seed would seem impossible.

In general, greenkeeping in Britain seems to consist mainly of mowing and watering. Occasionally a top-dressing or a little fertilizer may be used; but on many courses the greens are starved and the turf so thin that the soil can be seen thorugh the grass. This starving is done on the theory that it makes the grass tough and deep-rooted and also that it discourages the weeds, especially *Poa annua*. In May, however, this latter grass formed a solid blanket on most of the putting greens, even where the base of the turf was bent and fescue. Pearlwort is an exceedingly common weed on the putting greens, as a rule making up 10 per cent of the turf, and occasionally as much as 50 per cent. It seems not to be so obnoxious in Britain as in America, though it can scarcely be deemed a desirable turf.

Nowhere was a putting green seen as good as the better greens in America seeded to German bent, let alone those developed by the vegetative method. This is certainly not due to the conditions, as they seem to be much more favorable than are American conditions. Rather it seems to result from the fact that playable turf is easily secured and, in consequence, there has been no urge to secure the best possible. It may, indeed, be a debatable question whether British golf clubs should spend more money to secure ideal turf, or rest content with such turf as Nature and present greenkeeping methods produce.

On many courses the putting green turf contrasts most unfavorably

with the fairway turf. The latter is often extremely good, but the greens are usually very weedy. This points to something being wrong in the greenkeeping methods. The commonest weeds are *Poa annua* and pearlwort; but white clover, hop clover, chickweed, etc., are far from rare. Systematic weeding scarcely exists in British greenkeeping except for such taprooted weeds as starweed and plantain.

The golf leaders of Britain are deeply interested in the subject of turf and keen for the best information. Their courtesy was very marked and is deeply appreciated. As an earnest of their interest, it is worth noting that a meeting was held during the amateur tournament at St. Andrews looking forward to the establishment of an organization in Britain somewhat similar to our Green Section. Some of the American results will doubtless prove at least of suggestive value.

It would perhaps be unsafe to use American methods in Britain without first testing them on a small scale. Because certain things give good results in America is no criterion that they would be equally satisfactory elsewhere.

What One District Greenkeepers' Association Is Accomplishing

By John Morley, President, Cleveland District Greenkeepers' Association

The Cleveland District Greenkeepers' Association was formed in the spring of this year as the outcome of a suggestion made by a greenkeeper in attendance at a meeting of the Cleveland District Golf Association on March 29, 1924. This suggestion was to the effect that vastly greater benefit would result to the greenkeepers from gatherings of this nature if it could be arranged so that the meetings could be held upon the golf courses themselves rather than in hotels or similar meeting places.

The course of the Youngstown Country Club was selected for the first meeting of the association. This meeting was held May 12. Notwithstanding a cold rain the morning of the meeting, there were forty greenkeepers or chairmen of green committees present. We were favored with a talk by Prof. Lyman Carrier at this meeting, on the subject of grasses, particularly as regards the names of the various grasses occurring on golf courses. Our last meeting was held at the Congress Lake Country Club, on August 4. At that meeting we had two of the leading makes of tractors working side by side, which gave us opportunity for a comparative study of the merits of both machines.

Our officers consist of a president and a secretary. Our meetings are held under the supervision of the District Green Section, in that the chairman of the District Green Section is asked to preside at each of our meetings. We assemble at the club selected for the meeting, at about 10.30 in the morning. A preliminary meeting is held in the club house. After that a lunch is furnished by the entertaining club, and then the members gather on the course to discuss the subjects of soil, grasses, fertilizers, etc., and to inspect working equipment.

There is much to be gained by having such an association in connection with a District Golf Association. Through these joint meetings of greenkeepers and chairmen of green committees, a brotherly spirit is imbued and a closer understanding reached. From an educational standpoint it is believed that gatherings of this sort are one of the best movements that the Green Section has fostered. They not only furnish the young greenkeeper with valuable information of a practical nature, but the older ones

also profit from the observations made while visiting the various courses. There are about thirty golf clubs in the Cleveland District, which includes a territory of approximately 75 square miles. The attendance at our meetings is growing larger at each club we visit. The clubs in the district are anxious to have us visit them. We meet once a month, on Monday, which seems to be the best day for a greenkeeper to absent himself from his regular work. We now have enough invitations scheduled to last the remainder of the season.

The Work and the Needs of the Green Section

The following resumé of what the Green Section is accomplishing and what is needed in order that its work may become of maximum benefit, as presented by Mr. John G. Anderson in The American Annual Golf Guide and Yearbook for 1924, will no doubt be of interest to the readers of THE BULLETIN especially as coming from so eminent an authority.

"Flourishing and prosperous in the number of clubs and their wholehearted support the Green Section lived up nobly to all the enconiums of praise which by now through frequency have become commonplace. The usual aid to clubs and sectional committee heads, the monthly reports in their BULLETIN, the many questions answered, the hundreds of satisfied, shall we call them customers, all tend to increase the importance of this body.

"But there is a limit to human ingenuity and spread. Three hundred requests to visit courses and give advice! How humanly possible to attend to regular scientific duties and travel fifty thousand miles! It is and was absolutely impossible. If the Green Section is to function as wished for then it must have more funds to procure proper teachers to send round the land and additional money to conduct experiments away from Washington. To secure this the golfers of America have been asked to raise a million dollars as a permanent fund for the Green Section Committee work. An organization duly incorporated has been convened. No cause is more worthy and no results will be more satisfying. There are today a couple thousand clubs which need the benefits of this organization and THE BULLETIN at least. * * * "

Golf, Grass, and Hay Fever

By Dr. B. T. Galloway

Golf, grass, and hay fever. What have these in common?

We can at least say that it takes good grass and plenty of it to make good greens and good fairways. Good grass and lots of it also make plenty of hay fever victims.

Then again, golf used to be considered a sort of high-brow disease reserved for the elite. The same erroneous opinion prevailed with regard to hay fever. We do not know how many addicts there are to golf, but on the last count there were something over a million annual hay fever victims in this country. Hay fever is an annual visitant, so that there is an increasing army of weeping, blear-eyed, sneezing folks each year. It is now known that the disease is caused by the inhalation of the pollens of certain plants. The grasses and the ragweeds are the chief offenders, so that in years like the present one, when we had fine grass crops, there has been an unusual number of cases of the spring type of hay-fever.

Contrary to the usual belief, roses and goldenrod do not cause hay fever. It is a case of being in bad company, for the roses bloom most when the grasses are spreading the greatest lot of pollen, and the ragweeds

are scattering their pollens far and near when the goldenrod is in bloom. Neither the rose nor the goldenrod produce wind-blown pollen; that is, pollen from the rose and goldenrod is heavy and is not carried by the wind. Grass pollen and ragweed pollen, on the other hand, are extremely light and are often carried long distances. When these pollens are inhaled by the susceptible person, an irritation is set up which spreads to the respiratory organs, often causing acute suffering, especially if asthma develops. The attacks last from five to eight weeks.

There are two general types of hay fever,—the vernal or spring form, and the late summer or autumn form. The first is produced mainly by the grass pollens, including sweet vernal grass, Kentucky bluegrass, orchard grass, timothy, and redtop. The sweet vernal grass is one of the earliest grasses to bloom and in the eastern part of the United States begins to shed its pollen early in May; Kentucky bluegrass follows and is a great pollenator. Closely following the blooming of bluegrass, orchard grass comes in, then timothy, and lastly redtop. Of course, there are numbers of other grasses and certain other plants, like the plantain, blooming throughout the season, but it is believed the four grasses named are the chief offenders.

There are two common species of ragweed known to cause hay fever. The botanical name of the genus to which these belong is Ambrosia; the two species are *Ambrosia trifida* and *Ambrosia artemisiaefolia*. The first is a tall, coarse plant which grows abundantly along roadsides, particularly in low places. The second is the so-called hogweed or Roman wormwood. This grows in waste places along roadways and in vacant lots and grain fields and is one to three feet high, with finely divided leaves. Both ragweeds are enormous pollen producers and come into bloom about the middle of August and continue their blooming and pollen shedding until frost.

The pollens of the grasses, ragweeds and other plants causing hay fever are known to contain active protein-substances, and it is these which produce the harmful effects. Much progress has been made in the last few years in the treatment of this annoying disease. The treatment consists of pre-seasonal and seasonal injections of the pollen extract responsible for the attack. The first step is to determine what particular plant causes the trouble. This is highly important, for without a proper diagnosis, treatments, no matter how carefully made, are likely to be of little help. Recent work has shown the very specific nature of some of the plant pollens. This makes it all the more necessary to determine the actual pollen causing the trouble. The diagnostic work should be done by a competent physician, preferably one who has made a specialty of hay fever and who will take the time and trouble to study the entire history of the case. Diagnostic tests with raw pollens and pollen extracts aid in this work. When it appears certain that the specific pollen has been discovered, treatments with the extract of that pollen begin.

For the spring form of hay fever, treatments should begin early in April and continue through June. For the autumnal form, treatments should begin early in June and continue until frost. It is necessary to give two to three treatments a week for about five weeks before the disease usually appears, and the same number of treatments during the pollinating season. The treatments gradually induce a tolerance on the part of the subject to the pollen causing the trouble, so that when the big mass of pollen comes no harm is done.

Just as one's system may gradually become tolerant to many drugs, so it may be made tolerant to large doses of pollen. Treatments, therefore, do not produce immunization, they merely induce tolerance; hence

they must be repeated each year. Treatments are comparatively simple and, if properly made, are entirely devoid of danger. The injections are made under the skin of the arm and, as a rule, produce temporary local redness, swelling, and itching. When the plant and pollen responsible for the trouble are once definitely known, the person affected can, as a rule, materially aid in preventive measures by avoiding, as far as practicable, contact with such plants. It would be inadvisable, in other words, for a person suffering from hay fever produced by the pollen of orchard grass to walk through pastures or meadows or along roadsides where this grass is blooming. Another point is the fact that most of the grass pollens are shed early in the morning, and it is therefore highly undesirable for patients subject to the attacks of grass pollens to go among the grasses at this time of day.

With increasing knowledge as to the causation of the disease, much benefit will, no doubt, result from systematic reduction of sources of infection. Clean-ups of country roads, village streets, etc., of weeds and flowering plants will do much toward removing the cause of the trouble. Speaking from personal experience, it is a wonderful relief to be rid of the six weeks or two months of agony without having to go away from home or submit to any inconvenience except a very simple series of treatments.

Some United States Golf Association Decisions on the Rules of Golf

QUESTION.—Would working on the golf course as a laborer affect a player's amateur standing? I realize that a greenkeeper is classed as a professional but am not sure whether a man working on the course would come under the same heading.

ANSWER.—Section 7 of the By-Laws of the United States Golf Association covers the definition of an amateur golfer. A man working on a golf course would not violate this rule as long as he was not employed because of his skill and ability as a golfer.

QUESTION.—A player in match play struck the opponent's caddie, who was standing at the flag at the time. We applied Rule 18, under which the opponent loses the hole. The point was then brought up that the United States Golf Association made a ruling at Detroit a number of years ago to the effect that the caddie at the flag automatically becomes the caddie of the player making the shot, so that the player making the shot would lose the hole. Was such a ruling made?

ANSWER.—It is not recalled that the United States Golf Association ever made such a ruling. A caddie at the flag does not automatically become the caddie of the player making the shot. Many similar questions have been laid before the Rules Committee and they have always been decided under Rules 18 and 19.

QUESTION.—In a stroke competition, qualification round, is there any penalty for a practice swing taken in a sand trap or bunker, provided the player is more than a club's length from the ball and his club is not soled in the slightest degree? In a practice swing made under these conditions an attempt was made to penalize the player two strokes.

ANSWER.—There is no penalty for a practice swing taken in a sand trap or bunker more than a club's length from the ball, provided the club is not soled and the player touches nothing. The player in no way improves his lie and in no way tests the consistency of the soil with his club and conforms in every respect to the conditions laid down in Rule 25.

Recognition of a Notable Greenkeeper

We note with interest and satisfaction that Inverness Club, of Toledo, has elected William J. Rockefeller, its greenkeeper, an honorary member of the club. With the exception of a year or so, Mr. Rockefeller has been in charge of Inverness since it was first laid out as a nine-hole course, and he has seen and participated in the development of the course from a very crude beginning. Through his efforts the course has come to be recognized as one of the best-maintained courses in the United States.

In the early days and for a long time "Rocky," as he is affectionately known by the members, was obliged to get along and do the best he could with very little money, but by patient, conscientious attention to the work, following at all times a high ideal, he has achieved a result that is as near perfection as it is practical to bring it. He has not only brought his own course up to a point where it stands among the best in the country, to the satisfaction and pride of the members, but he has made many contributions to the art of greenkeeping. Instead of having a feeling of smug satisfaction that his course was as good as any or good enough, he was always striving to improve conditions and methods, and annually Inverness is visited by a great many greenkeepers and green-committeemen in search of information or the advice or suggestions of Mr. Rockefeller.

Green committees come and go at Inverness, but "Rocky" has always been a fixture; and during the incumbency of each committee he has taught them enough about the problems of greenkeeping so that no matter what comes up there are always a number of members in the club who understand the problems and questions from their practical experience; and any sound proposal having to do with the maintenance of the course is sure to have the backing and support of these men. Indeed, whenever any question is raised as to the maintenance or operation of the course (and questions arise at Inverness, as in every other club), the reaction of most of the members is, "What does Rocky think about it?"

We feel that the honor conferred upon Mr. Rockefeller by the Inverness Club has been earned and that the club has done exactly the proper thing in so expressing the appreciation of its members.

Hay Fever and Golf

Physicians very commonly recommend golf to their patients as a very desirable form of exercise. Without consulting the medical authorities, it is doubtless good for obesity, indigestion, lassitude, nervous troubles, melancholia, etc. Doubtless we would not be far wrong if we added, in the language of the patent medicine advertisement, pains in the back and sides, sore throat, cold sweats, chilblains, rheumatism, and cold feet. Except, indeed, in the few ailments where exercise should be abridged, it is probably as near to a general cure-all as exists.

However, a word of caution needs to be said for the unfortunates who are victims of hay fever. The common causes of this are the pollens of grasses and particularly of ragweed. No respectable golf club should allow any ragweed on the place to go to blossom. Indeed, with reasonably good greenkeeping, there should be no ragweed.

For the patient, we should strongly urge him to keep out of the rough.

A Beautiful Book.— The Minikahda Club, of Minneapolis, has issued a beautifully illustrated volume to commemorate its twenty-fifth anniversary. The plates are photographs 7½ by 9 inches, fully illustrating both the club house and the golf course. The text gives an interesting historical account of the club. This is by far the handsomest volume of the sort that has come to our attention.

Comment by a British Admirer

The following note by a member of the Rules of Golf Committee appointed by the Royal and Ancient Golf Club of St. Andrews, Fife, should interest our readers:

"I thank you most heartily for your kindness and courtesy in sending THE BULLETIN to me every month. I calculate that I understand completely about half the contents of each number, but I nevertheless read each one religiously from cover to cover with amazed admiration. It is amazing to realize that there is so much to be known about an apparently simple job like the production and culture of common or garden turf. And none can fail to admire the thoroughness with which you and your coadjutors observe and analyze particular phenomena, or to approve the logical method whereby you deduce from them an universal truth. It is not your fault that I do not always understand your premises. The argot of greenkeeping is not the same in this country as in yours. Notably the names of plants are different here and there. However, I learn enough from THE BULLETIN to make me a fluent, sometimes terrifying, critic of green-committees.

"Normally I pass my BULLETIN on to the secretary of the club on whose course I play most of my week-end golf. But I am sending the July number to one of our Cabinet ministers. All doctrinaires ought to read your leading article entitled 'The Error of Generalizing.'

"I don't agree with you about the use of spiked rollers, but I wish you all success, so long as you keep my name on your free list."

Back numbers of The Bulletin are available as follows:

Vol. I (1921). Reprint in paper covers; price, $2.25.

Vol. II (1922). June, July, August, October, November, and December numbers available, others exhausted; price, 35c per copy; index included.

Vol. III (1923). All months available except January and April; price, 35c per copy; index included.

Binders: price, 50c per set.

New Member Clubs of the Green Section—Ashland Golf and Country Club, Lexington, Ky.; Menomonie Country Club, Menomonie, Wisc.; Tekoa Country Club, Westfield, N. J.; Blue Hill Country Club, Canton, Mass.; Indole Golf Club, Au Sable Forks, N. Y.; Harlem Hills Club, Rockford, Ill.; McHenry Country Club, McHenry, Ill.; Calgary St. Andrews Golf Club, Calgary, Alberta.

Guano—Guano is the excrement of seafowls, obtained in large quantity along the west coast of South America. Analyses show that it averages about 12 per cent nitrogen, 10 per cent phosphorus, and 2½ per cent potash. At the present time it is used in the United States mostly in mixed fertilizers. The market price at present is about $70 a ton. Up to the present the Green Section has conducted no experiments with this substance, as its high price seems beyond any benefit that can reasonably be expected. Furthermore, on theoretical grounds, the high percentage of phosphorus and in addition the potash, will tend to encourage clover in putting greens. If you try it at all, do so in a purely experimental way until you determine just what it does to your putting green turf.

QUESTIONS AND ANSWERS

All questions sent to the Green Committee 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 Committee.

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. Impossibility of Starting a Creeping Bent Nursery from Seed.—We have on hand a supply of German mixed bent seed. Could we start a creeping bent nursery from this? (Ohio.)

Answer.—Inasmuch as German mixed bent seed contains only a trace of seed of creeping bent, the bulk of the mixture being Rhode Island bent and velvet bent, it would be impossible to develop a creeping bent nursery in the manner you suggest. It will be necessary for you to start your nursery with creeping bent stolons.

2. Buffalo Grass and Grama Grass as Turf Grasses in the Dry Lands of the West.—We are contemplating seeding some new fairways. What seed would be the best to sow in this particular section of the country? Our ground is very moist up to about the first of June, but from then on in particularly dry seasons we have very little rainfall. The soil is excellent and needs but a small amount of moisture to produce good crops. There is a certain amount of subirrigation on a portion of the land, but the two streams running through the property flow very little water during the months of July and August, unless we have a particularly wet season, as the past one has been. We realize that possibly it is too late now to sow any seed this fall, but we are getting the ground in shape for the seed bed, and it will be ready in the early spring for sowing. This is a good buffalo grass country, but there is no such grass growing on this particular piece of land. It has been recommended very highly as a turf on account of its hardiness in this semi-arid country. Is it possible to secure buffalo grass seed? Where can it be obtained, and what is the best way to propagate this particular kind of grass? (Wyoming.)

Answer.—In the June, 1923, number of The Bulletin you will find in condensed form our recommendations for seeding new greens and new fairways in all parts of the United States. This is the article entitled, "Seeds and Seeding for New Greens and New Fairways." In other articles scattered through The Bulletin you will find these matters treated in more detail. Under your conditions spring seeding is satisfactory, although we would be inclined to think that late summer seeding —say the middle of August—would be even better. If you can irrigate your land the bluegrass-redtop mixture would be best under your conditions. If you can not irrigate so as to keep these grasses growing then you will have to rely upon the native grasses, such as buffalo grass and grama grass. Seed of neither of these grasses is handled commercially, and you will therefore have to take steps to gather it yourself. We imagine that where the seed is abundant you can gather it with a mowing machine and simply scatter the seed over the course, but if the grass is too short perhaps a fairway mower would do the work. At any rate, the problem for you to solve is as to how you are going to get this buffalo grass

seed and grama grass seed. Buffalo grass seed, in particular, germinates very poorly, and grama grass seed is not much better. Another method you can use, and particularly with buffalo grass, is the vegetative method of planting. We have known of this being done only by the plugging method, but we are inclined to think that if at the most favorable season of the year you could get a quantity of the sod and the roots of buffalo grass, scatter it over the prepared ground, and roll it in, you would get a good stand of this grass. This may be rather expensive, and perhaps it is a thing that you should test out before going into extensively. We know of one course in Kansas where they used roots of buffalo grass and stuck them in different places over the fairways, and in this manner they have increased the percentage of this grass very materially. You can get some extremely interesting data if at different times of the year you will plant small areas, say 6 or 8 feet square, with the roots, and watch the behavior of these plots. Is there not enough water in your two streams so that by damming them you would have sufficient water to irrigate during July and August? This would be the ideal thing to do if the club can afford it.

3. GRASSES FOR WINTER GREENS IN THE SOUTH.—We are contemplating sowing half of our putting greens in winter grass. Heretofore, we have used redtop and fescue. These grasses die out about the middle of May or the first of June, and the Bermuda grass comes out soon after, giving us good Bermuda greens by July 15. Do you think the redtop-fescue mixture best suited to our greens and climate? (North Carolina.)

ANSWER.—For winter grass on your Bermuda putting greens we would use either redtop alone or Italian rye-grass alone. Redtop makes a fine turf. Italian rye-grass grows more quickly than redtop and also gives a satisfactory turf. The use of fescue with either is not to be advised. The seed is expensive, slow in germination, and does not add materially to the turf. Indeed, it is nothing but an extravagance to use fescue. We prefer redtop alone, but some clubs still cling to Italian rye-grass alone. We have yet to see any merit in a mixture of the two, especially as Italian rye-grass grows more readily than the redtop.

4. TREATMENT OF CREEPING BENT IN THE NURSERY.—Should we allow our bent garden to grow wild with no attempt to top-dress or cultivate? (Kentucky.)

ANSWER.—The treatment we recommend for the creeping bent nursery is as follows: In your locality the rows should be planted in the fall, preferably about September 1. The rows should be about 6 feet apart. The following spring and summer, cultivate the rows with a single-row cultivator or a double-row cultivator, if the latter can be used advantageously, and remove the weeds not only from the middle of the row but also between the rows. Then with a rake comb out the stolons gently; this encourages their spreading. We do not advise top-dressing for nursery rows. Where seed stalks are formed, these should be cut off with a mower, scythe, or sickle. Apply water if the weather becomes very dry.

5. FERTILIZER AT $7.60 PER HUNDRED POUNDS!—I am sending you a sample of a commercial fertilizer which we have tried out with excellent results. This fertilizer is quoted to us at $7.60 per hundred pounds. Is that a just charge? (Kansas.)

ANSWER.—An examination of the sample you send shows that it is what may be considered a complete fertilizer. The price they ask is, however, much out of line with usual fertilizer values. If you want to use a mixed fertilizer we are sure you can buy it for less than one-third this price. We would advise you, however, to use only nitrogenous fertil-

izers, particularly ammonium sulfate, bone meal, dried blood, fish scrap, etc., as the potash and phosphorus in mixed fertilizers are of no value in growing fine turf.

6. WINTER PLAY ON PUTTING GREENS.—I disagree with the rest of our committee on the question of winter play on putting greens. Will you kindly give me your opinion on the matter. (New York.)

ANSWER.—There is no objection whatever to playing on putting greens throughout the year, provided the drainage is satisfactory, except during periods when they are freezing out and thawing. Low-lying greens, unless properly drained, are inclined to become more or less waterlogged, and it is harmful to play on them during periods of freezing and thawing. In general, it is safe to say that any putting green may be used any time of the year except when it is in a soggy condition.

7. CONVERTING MEADOWS OR PASTURES INTO FAIRWAYS.—Pending the completion of our new 18-hole course we have been playing a temporary 9-hole course. The fairways on these 9 holes were secured by rolling and close cutting of an existing turf, most of which had been used previously as a hayfield, and in some cases as cow pasture. The resulting turf, while playable, would not be good enough for our permanent course, but it so happens that our permanent 18 holes can be constructed so that we can use this temporary layout as the rough between and around the new holes. However, it is necessary to use part of the present fairways permanently. It would be of considerable advantage to us if we were able to convert this present turf for permanent use without the necessity of plowing it and seeding, as was done with the other fairways, and which of course would interfere with the present play. The grass now on the fairways is timothy. It has withstood close cutting, but of course is sparse. (New York.)

ANSWER.—We believe you can improve the turf on the areas you mention, in your locality, by sowing bent seed, particularly German mixed bent, especially if the seed is mixed with compost made as we have described many times in THE BULLETIN. Ordinarily we do not favor sowing seed on old turf, and it is nearly impossible to get results in this manner with seeds of grasses other than bents. We have, however, at times been able to get very good results from the sowing of bent seed on old turf. On account of the high price of bent seed we would advise you to try a mixture of redtop and bent, approximately half and half. Fifty pounds of this mixture to the acre should be ample. If well-rotted manure or compost can be used to cover the seed it will help, but if these materials are not available, seed may be sown after the soil is loosened somewhat by the use of a harrow or a weeder. Top-dress the areas if you can, since results are much more certain when this is done.

8. MULCHING TURF WITH STRAW OR HAY.—We have several fairways on our course which are quite sandy and on which the turf is sparse. Last fall we top-dressed these fairways with a liberal top-dressing and applied a good seeding of redtop and bluegrass. It was the opinion of some of the members of our committee that we should cover these fairways with a liberal covering of bluegrass hay, which we did. This hay was put on so thickly that it is impossible to see the grass beneath it. It is now (April 14) the belief of some of the members of the committee that we should allow this hay to remain as a mulch and that the grass will come through it and in a short time all of this material will disintegrate and disappear. Others on the committee believe that this mulch will have a tendency to smother or scald some of the grass and that the harm will more than offset any advantage. What is your advice in the matter? (Iowa.)

ANSWER.—The scattering of a mulch of hay on your fairways last fall was all right provided the hay was scattered thinly. Where it is scattered heavily the seedling grass beneath is practically certain to be smothered, and new grass will be slow to come through it in the spring. There is serious doubt whether in the case of grass turf it is ever desirable to mulch the fairways with straw, hay, or anything similar in the winter. Certainly it is never desirable to scatter it so thickly that the grass beneath is smothered. This is a matter in which you will have to use your own judgment, as there is no way in which we can state whether the mulch was put on too thickly or not. In any case, where there is doubt in your mind we would advise that the hay be raked off early in the spring so that the grass can be given a chance.

9. CONVERTING TURF OF OTHER GRASSES INTO BENT TURF.—We are thinking of sowing a bushel or two of bent runners on each of our greens as we do our top-dressing. Can we expect by this method to change the turf into bent turf? (Pennsylvania.)

ANSWER.—Greens can be converted into bent by sowing German mixed bent seed about September 1 right on the old turf, and then top-dressing. Bent will catch in the turf of any other kind of grass. The same thing can be done vegetatively by first cutting the turf closely, then watering the green thoroughly so as to get it good and moist, and then scattering cut stolons, rolling them in, and top-dressing. A very considerable proportion of the cut stolons will catch. We would urge if you adopt this method that you do it in late summer or early fall. Either seeding or planting in the spring is less satisfactory than in late summer or early fall.

10. CARBON TETRICHLORID IN THE CONTROL OF ANTS AND GRUBS.—What can you tell us concerning the use of carbon tetrichlorid as a substitute for carbon disulfid in the control of ants and grubs? A prominent chemist has expressed his opinion that it would be just as effective as carbon disulfid, and would have an advantage over the latter in that it is not inflammable. (Pennsylvania.)

ANSWER.—With regard to your inquiry we are advised as follows by the Bureau of Entomology, U. S. Department of Agriculture: "All the work done by the specialists of this bureau, including the chemists attached to the staff, indicates that carbon tetrichlorid has a considerably lower toxicity for insects than carbon disulfid and that for this reason it would prove considerably more expensive for use in this way. Apparently the only advantage it has over carbon disulfid is the fact that it is non-inflammable, and it seems doubtful if this is sufficient to render it a desirable substitute for use out of doors. We think there is very little real danger in the use of carbon disulfid except in buildings or other enclosed places where the gas is likely to accumulate in quantities."

11. GROUND PHOSPHATE ROCK AS A FERTILIZER FOR GOLF TURF.—We have had pretty fair results from the use of sand on top of our clay soil. We also put marl on our fairways, and last year sheep manure. This year we have had rain about every week since the first of July up to the middle of September. Our fairways are very heavily covered with white clover. We have again applied the sanding process during the past month (September) but are wondering if the application of ground phosphate rock would not be desirable in developing bluegrass and redtop. Is ground phosphate rock a good fertilizer to use under our conditions? (Illinois.)

ANSWER.—The use of phosphatic fertilizers, or at least most of them, on grass turf tends to encourage clovers, and this is usually considered undesirable. Our work shows almost without exception that the fertilizers

to use are the nitrogenous fertilizers, and, everything considered, we regard ammonium sulfate as the best, particularly because it tends to discourage clovers and weeds. There is no doubt in our opinion that what you need to do on your soil is to get the surface half-inch or inch more loamy in texture, and continued top-dressing with sand is the best method we know of to secure this result.

12. SEEDING REDTOP FOR WINTER GREENS IN THE SOUTH.—We had excellent success with redtop which we sowed the first part of December. Owing to the late cool season the redtop did not disappear until July. We are under the impression, however, that we sowed too heavily, using about 5 pounds of seed to a plot 16 by 16 feet, as on a couple of the greens this left some slightly bare places which did not cover up with the Bermuda grass until the latter part of August. We believe that you advised us to sow the redtop during the middle part of October. Is it best to do this before or after a rain, and how much seed should we sow to a thousand square feet? (Arkansas.)

ANSWER.—In regard to the seeding of redtop, it is our belief that you will get the best results by seeding it just as soon now (October) as you can. Before seeding you should cut the summer turf just as closely as you can, and after seeding the redtop give the greens a top-dressing. Sow the redtop seed at the rate of 3 to 5 pounds for each 1,000 square feet. Do not go beyond 5 pounds, as anything above that rate is a waste of seed. You ask whether it is better to sow redtop before or after a rain. Of course the best thing would be to have water at your putting greens so that you can regulate the moisture. At any rate, it is best to sow the seed, if you have to depend on rain, at a time when the rain is most likely to come.

13. INADVISABILITY OF USING CHEMICAL FERTILIZERS IN THE LATE FALL.—We bought some creeping bent stolons and planted and top-dressed them directly on one of our greens. Would it be advisable to use any ammonium sulfate on them as late as October to stimulate their growth? (Michigan.)

ANSWER.—We would not advise the use of ammonium sulfate as a fertilizer as late as October in your latitude. It would be better to defer the use of this chemical until the grass starts to grow in the spring.

14. CUTTING SEEDLING TURF.—We expect to seed a couple of fairways early in September and the question has arisen as to whether we should cut the grass this fall, and if so when we should begin and how close the grass should be cut. (New York.)

ANSWER.—Our advice is to mow the seedling turf as soon as the grass is 1½ inches high, and to keep on mowing it. In order to get good turf, grass must be mowed from the start.

15. PLANTS FOR HOLDING CREEK BANKS.—We have a creek winding through our property, the banks of which are full of springs and are subject to constant caving in. Can you suggest a plant which may be used in preventing these banks from washing away? (Nebraska.)

ANSWER.—The best plant under your conditions for holding the bank of a stream is the willow. Of course, a growth of willows would be objectionable anywhere near the line of play when the matter of lost balls must be considered. As a substitute for willows under such conditions the best means for holding the banks would be to seed them to redtop.

Meditations of a Peripatetic Golfer

According to the "master spot" theory of putting, you must aim for a spot near the ball in the line of the hole. There ain't no such spots on a good vegetative green.

Intelligence and care in greenkeeping are useful. Every good method can not be made "fool proof."

Change the cup as soon as the turf around it looks trampled. Still better, change it before that takes place.

If the back slopes of your bunker cops are gentle, the machine will mow them; if they are steep, hand work is necessary.

White clover on the putting greens should not be tolerated. With continuous use of ammonium sulphate it will disappear.

Top-dressing greens with coarse cinders or pebbles is a sure method of inciting the wrath of the players.

A French idea: Sodded walks from the bottom of a sand bunker to each back corner. A splendid plan that many clubs should copy.

Merely mowing, watering, and rolling grass for one hundred years will not produce good turf. It was a literary fellow, and not an investigator, who advised this formula.

Margins of the putting greens scarred by the mowers! This is a sure sign of a careless greenkeeper.

The list of honorary members of every golf club should include the robin; the song sparrow; the chippy; all the warblers; the flycatchers; the cardinal; the mocking bird; the Bob White, and most of the other birds. Enroll as many as possible.

Lines by a near-poet, with abject apologies to Wordsworth:

The bunker by the fairway's rim
A damned menace was to him,
    And it was nothing more;
His partner deemed it but a guide,
A thing to praise and not to chide;
    And this is true golf lore.