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.