## 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. Sowing Bermuda seed; rate and method. Fertilizers for Bermuda turf.**—What rate of seeding would you advise for Bermuda putting greens and fairways? Would you recommend bone meal or ammonium sulfate for use in fertilizing Bermuda grass? (Virginia.)

ANSWER.—For putting greens a rate of 5 to 7 pounds per 1,000 square feet is advised in sowing Bermuda grass seed, and for fairways 75 to 100 pounds per acre. For Bermuda putting greens a top soil of fairly heavy clay loam seems to give best results. On the putting greens it is advisable first to rake the top soil, then sow the seed, and then roll lightly. On the fairways it is best to sow the seed on a firm seed bed, then harrow or brush it in lightly, and then roll again. Bermuda seed should not be sown until the weather is warm; say the first of May in your location. For fertilizing your putting greens, use only ammonium sulfate, and use it as often as desired. Occasional topdressings with a loamy soil or with compost should be made, especially for the purpose of burying the runners and keeping the surface of the green smooth. You can use the ammonium sulfate mixed with the topdressing, or you can apply it as a liquid, or dry mixed with sand. In any event it must be watered in thoroughly after it is applied, or burning is apt to result. Bone meal is a good fertilizer for the fairways, but as it contains considerable lime it is not desirable for the putting greens. Bermuda grass is notably a warm-climate grass, and the seed will not germinate until the soil has become thoroughly warmed.

**2. Liming bluegrass fairways.**—Our fairways consist mostly of bluegrass but have a little bent and some redtop also. Soil tests taken throughout the course show a slightly acid condition. The stand of grass on the fairways is not satisfactory, and a number of our members are strongly urging that they be given an application of lime to counteract the acidity and thus thicken the stand of bluegrass. We should like your advice in the matter. (Missouri.)

ANSWER.—What bluegrass needs most is an abundance of fertilizer, and where this is furnished it will thrive as well on acid soils as on alkaline. In parts of the Pacific Northwest bluegrass thrives admirably on acid soils, but the soils there are at the same time rich. The fact that bluegrass thrives generally on limestone soils is probably due more to the fact that these soils as a rule are very fertile. There is abundance of evidence, moreover, to indicate that lime encourages the growth of weeds. In our opinion, you will get better results by fertilizing your fairways than by liming them.

**3. Value and use of a chain harrow.**—What is your experience with regard to the use of a Scotch chain harrow on the fairways? (Ohio.)

ANSWER.—The chain harrow, or, as it is commonly called in this country, Scotch harrow, is an old implement which has been used in Europe for a great many years to harrow their pasture lands. It is a splendid implement for work around golf courses, especially for spreading manure or topdressing on fairways. It breaks the clods and drags the material into the low places without damaging the turf. With this harrow, material that is coarser than would be safe to use ordinarily can be applied to the fairways without leaving them too rough for play. It is also good for putting the finishing touches on a newly constructed green or bunker, or wherever a gently rolling surface is wanted rather than sharp edges.

**4. Breaking down fresh manure with ammonium sulfate.**—We are told that fresh manure may be used as a substitute for rotted manure if ammonium sulfate is added to it, as the ammonium sulfate will break it down quickly. If this is the case, kindly advise in what proportion the ammonium sulfate should be mixed with the manure. (New York.)

ANSWER.—It would be well to apply about 50 pounds of ammonium sulfate to a ton of fresh manure. This should help to break it down quickly.

**5. Unsuitability of Rhode Island bent stolons for vegetative propagation.**—We are offered Rhode Island bent stolons at a low price. We have seen Rhode Island bent greens which were excellent. Are stolons of this grass suitable for vegetative propagation? (Ontario.)

ANSWER.—Rhode Island bent grass does not produce stolons, and its stems would be useless for vegetative propagation.

**6. Covering bare spots in putting greens.**—Our greens were sowed last year with German mixed bent seed. Naturally, a perfectly uniform stand of grass was not secured, and during the winter, for some reason, some of the grass has died, leaving patches. What are your recommendations as to the quickest means of filling these patches? (Wisconsin.)

ANSWER.—The quickest way to fill these patches would be by planting them with pieces of sod taken from near the edge of the green. The bare spaces then left near the edge of the green could be planted with bent stolons, or if stolons are not available they could be sowed with bent seed. To hasten the knitting of the turf where the pieces of sod have been inserted, use fertilizer freely.

**7. Reseeding fescue greens.**—Our greens of red fescue, which are now three years old, are in excellent condition, except that there are some spots, probably due to winterkilling, which will have to be reseeded. Would you advise the use of bent seed in reseeding these spots? (Maine.)

ANSWER.—If your fescue greens give promise of maintaining their general good condition we would not advise you to seed anything but fescue in them. Bent and fescue are of different textures and a mixture of the two makes a green which is difficult to maintain and unsatisfactory from a putting standpoint. If you fear the fescue is

not going to continue, we would recommend that you change to bent by the addition of seed of Rhode Island, Colonial, or German mixed bent as soon as possible.

**8. Keeping qualities of corrosive sublimate solution.**—We have found that corrosive sublimate does not dissolve readily in water and wish to know whether it will deteriorate if allowed to remain in solution for a considerable time. (Minnesota.)

ANSWER.—Corrosive sublimate will not lose its strength by being kept in a water solution. It will dissolve much faster if ammonium chlorid is added, and as less water is thus required to dissolve the corrosive sublimate a more concentrated solution may be kept.

**9. Removing tree stumps.**—It has been suggested to us as an economical means of removing tree stumps, the saturating of the stumps with saltpeter, and then burning them. Would you recommend this process? (New Jersey.)

ANSWER.—None of the chemical methods used in getting rid of stumps are satisfactory. The best means we know of for removing stumps is the pulling of them out by powerful tractors.

**10. Building a putting green on clay soil.**—In building a green on clay soil, how would you proceed so as to do the work most economically? If well-rotted manure is not available would you use eight or ten inches of the regular stable manure? How much top soil should be used after the manure is thoroughly mixed with the clay? (Ohio.)

ANSWER.—Our present opinion is that if the top four inches of a green on clay soil is good rich garden loam, as good results will be derived from it as if the rich top soil were deeper. If you are going to make this top soil in place, we would advise you to scatter the manure and sand on top of the clay soil and keep harrowing them in until your top three or four inches is of the nature of a good garden loam. This will not require as much manure as it will sand; but of course the amounts of material vary somewhat with the character of the soil.

**11. Texture of old creeping bent turf.**—I have been informed that the Washington strain of creeping bent after five or six years becomes coarse and woody. Can you verify this? (Pennsylvania; Colorado.)

ANSWER.—Up to this date there are no greens of Washington creeping bent which have reached the age of four years. However, the original plot of the Washington strain at Arlington Experimental Farm is now about six years old and its texture is as fine and soft as it ever was. The indications point strongly to the fact that if creeping bent turf is properly cared for it will retain its fine texture indefinitely. Moreover, we know of some bent greens seeded 20 years or more ago and which are now in fine shape. Under normal conditions and with reasonable care creeping bent will maintain its fine texture indefinitely.