

within the proper limits, counting the stroke he has already played from outside the limits.

Is there a rule which permits one to loosen a ball which has become embedded in soft mud or earth on the fairway?

Decision.—There is no rule in golf permitting a player to loosen a ball which has become embedded. Situations of this character are covered under Recommendations for Local Rules. It is the duty of the committee in charge to formulate local rules to cover unnatural conditions that interfere with the proper playing of the game.

A player in addressing a ball on the fairway accidentally touched it. It moved upgrate four or five inches, and then ran downgrade and came to rest in its original position. The ball moved completely over, and we do not believe this should be considered oscillation. Would this entail a stroke penalty?

Decision.—The ball left its original position and is therefore deemed to have moved and must be penalized under the rules.

Greenkeepers' Register.—We shall be glad to list the names of greenkeepers available for employment and refer these names to golf clubs who may have occasion to request them.

All applications from greenkeepers seeking employment must give the age, experience, and names and addresses of references.

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. Quantity of bent stolons necessary for planting a green and a nursery.—We want to get sufficient creeping bent stolons to plant a putting green of 5,000 square feet and a bent nursery of about 10,000 square feet. What quantity of stolons will be necessary for these purposes? (West Virginia.)

ANSWER.—You can figure on the basis that 1 square foot of sod from a creeping bent nursery will furnish sufficient stolons to plant 10 square feet of putting green surface; thus 500 square feet of nursery sod would be required for planting a putting surface of 5,000 square feet. As for your bent nursery, if you plant the stolons in rows 6 feet apart, so that the rows can be cultivated for keeping down weeds and furnishing a better soil bed for the stolons to spread in, 3 square feet of nursery sod will, under ordinary conditions, plant a nursery row 100 feet in length. Your 10,000-square-foot nursery would require 17 of these 100-foot rows, to plant which 50 square feet of nursery sod would be ample.

If, however, you have facilities for giving your nursery especial attention after you plant it, the quantity of nursery sod required to

plant your nursery could be reduced to one-third the proportion we recommend, or 17 square feet. That is to say, it is possible to produce a good nursery by planting the stolons from 1 square foot of nursery sod in a row 100 feet long. In this way the development of the nursery row is somewhat slower, and as results do not appear so quickly there is generally a tendency to neglect the row. Moreover there is a likelihood also to cover the stolons too deep, and this further tends to retard their development. By especial attention to the nursery row, we mean planting the stolons carefully and covering them lightly (not over one-fourth of an inch deep), watering carefully, and weeding carefully, until the new stolons have begun to make a good growth.

If you expect to produce sod in your nursery, the same amount of stolons would be required as for planting a putting green.

2. Winter greens for the South.—At a neighboring club in Virginia they sow their Bermuda putting greens, just before the last topdressing in the fall, to a mixture of Kentucky bluegrass, redtop, and white clover, and seem to have excellent greens throughout the winter. Would you recommend this as a general practice? (Virginia.)

ANSWER.—The practice you refer to has been reported in some cases to give excellent results, but there are two objections to it. First, many golfers object to white clover in greens. Second, the general experience in the South seems to be that seeding Bermuda greens to winter grasses retards the return of the Bermuda grass in the spring. It is likely that this latter objection can be overcome by stimulating the growth of the Bermuda in the spring by including a liberal amount of ammonium sulfate or ammonium phosphate in the topdressing, and topdressing at about the time the Bermuda should commence to grow. As regards bluegrass, this is very slow in growing, and more rapid results are obtained by sowing a mixture of redtop and Italian rye grass on the Bermuda in the fall. These are both rapid-growing grasses. Possibly better results may be obtained by sowing the redtop alone, or the rye grass alone, and it might be well for you to test this out on different greens, sowing one to redtop alone, another to Italian rye grass alone, and a third to the two grasses in mixture. For quick results, heavy seeding is advised, redtop at 5 pounds, Kentucky bluegrass at 7 pounds, and rye grass at 15 pounds per 1,000 square feet.

3. Reseeding greens heavily infested with crab grass.—Our greens, which were reseeded last fall, have been in excellent condition this summer until the first of August, when crab grass came in very thick. The crab grass plants have killed all the other grass for a space about 3 inches in diameter under each plant. It is almost impossible to cut this grass so as to afford a smooth putting surface. We now have a force of men digging out the crab grass and filling up the holes with topdressing in which grass seed has been mixed. A number of our members object to incurring the expense of this work, stating that the crab grass will not go to seed but will disappear as soon as the hot weather is over. We shall appreciate your advice in this matter. (Illinois.)

ANSWER.—In your latitude crab grass is a very bad weed on putting greens. Here at Washington greens must be hand-weeded from

the time the crab grass starts, as otherwise the crab grass will kill out the bent or fescue in the greens. No matter how close you cut the crab grass, it will seed next to the ground and the following year you will have just as much crab grass as ever. All you can do is to weed out the crab grass as thoroughly as possible and reseed the bare spots, or else cut it close with a mower after raking it up, first in one direction and then in the opposite direction, so as to leave nothing but the stubs of the crab grass plants. This latter method will be cheaper than hand-weeding, and in our opinion about as effective. After you have reduced the crab grass to stubs, the new seed may simply be broadcast, using 2 to 3 pounds of seed to 1,000 square feet of surface, if you reseed to bent. We have found that the constant use of ammonium sulfate as a fertilizer almost completely prevents the growth of crab grass.

4. Converting redtop-fescue greens into bent greens by use of stolons.—A year ago we received from you a sample of creeping bent. From that start we developed sufficient material to put in a plot 25 by 25 feet, which we have cared for somewhat as we would a regular putting green, and we have secured a wonderful turf which has stood up exceptionally well with little care. In the meantime we have also developed a fairly large stock of the bent in nursery rows. From this stock we endeavored in various ways to introduce the stolons in our present greens, but have had very poor results. In fact, it is hard to find any bent in the old turf, which consists of Chewings' fescue and redtop and is about four years old. We consider it would take years to get solid bent greens with that method on our course. We nevertheless want bent greens, and in order to reduce to a minimum the time necessary for playing on temporary greens in converting our greens to creeping bent, we have decided on the following method. We shall broadcast the bent stolons on an area as large as the combined area of our putting greens. We shall grow this to an established turf, and when it is ready shall lift the turf and place it upon the grass of our present greens, thereby maintaining our contours on the greens. The old grass remaining beneath the sod will thus be converted to humus and serve as a fertilizer for the bent. We expect to accomplish this in about twelve months, and consider it practical from a standpoint of economy and convenience, as the greens will not be closed more than twelve days at the time we change the turf. Have you any suggestions to make in the matter? (California.)

ANSWER.—There appears to be no question that the plan you have adopted will work out satisfactorily. Other clubs have employed it with good results. Regarding the method you first tried, namely, the introducing of creeping bent stolons direct into your established fescue-redtop turf, this has also been done with entire success in many places. Your local conditions, however, may not be in its favor. Nevertheless we believe it would be worth while for you to try this method again.

5. Sodding as late as October.—We shall have this fall sufficient sod propagated from bent stolons sown last year to rebuild six of our greens. Ordinarily, of course, if we were going to rebuild these greens with bent stolons, we would plant the stolons about September 1. Our chief purpose in using sod instead of stolons in returning our greens is to interfere with play as little as possible. Would it be too

late to sod these greens about the middle of October? We rather suspect that on account of September in this part of the country being generally a pretty hot month, and in some seasons unusually dry, we would get as good, if not better, results if we wait until the latter part of October to do this work. (Indiana.)

ANSWER.—In our opinion you should get satisfactory results from sodding your greens during the first half of October. We would suggest, however, that you cut the sod thin, not over 1 inch thick, as it has been our experience that sod of this thickness takes root in the soil beneath quicker than sod cut thicker. See that the sod gets plenty of moisture after it is laid on the greens. Sodding can be done with creeping bent turf any time in the fall until frost.

6. Improving the rough.—Part of our rough is in such poor condition that we consider it necessary to harrow and smooth it and reseed it. What seed mixture should we use for this purpose, and at what rate of seeding? Would you consider a mixture of 80 percent sheep's fescue and 20 percent Canada bluegrass a desirable combination? (New York.)

ANSWER.—Harrowing the rough and putting on some additional seed should improve it greatly. Sheep's fescue is the best grass for the rough, and Canada bluegrass is often very useful. The mixture you suggest is very good. The rate of seeding will depend on how much grass there already is on the rough. If there is, let us say, half a stand of grass, we would advise you to seed this mixture at the rate of about 30 pounds per acre. In buying your seeds you had better buy them on the basis of samples and quotations. They should be purchased immediately so that they can be seeded about the first of September in your latitude.

7. Fertilizer requirements in planting creeping bent stolons.—We are building a new green and shall shortly have it ready for the planting of creeping bent stolons. We should be glad to have your recommendations as to the use of fertilizer in this work. (Pennsylvania.)

ANSWER.—It is not necessary to apply fertilizer to soil of ordinary quality in the planting of creeping bent stolons, neither to the soil itself nor to the topdressing to be used. The necessity for fertilizing will be determined by the character of growth made by the turf after it has become completely established.

8. Spring seeding as compared with fall seeding.—Will you kindly advise if, in your opinion, we could get satisfactory results by seeding the remaining nine holes of our golf course in the spring? We are unable to finish our entire eighteen holes for this fall and will only be able to finish and seed nine holes before the first of October. (Long Island, New York.)

ANSWER.—At your location the best time for seeding is between August 15 and September 15. Spring seeding, if done at all, should be done very early, but it is never as satisfactory as late summer seeding. Even if your results from spring seeding should not be entirely satisfactory, the deficiency can be remedied by further treatment the following fall.