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. Fall, winter, and spring seeding of fairways.—The construction work on our new golf course has this fall progressed to such an extent that we shall probably wish to seed our fairways in the spring, as we expect to have water available for sprinkling them. Do you not think it advisable to seed in the spring rather than allow the ground to lie idle until next August? It appears to us that if we are ready it would be to our advantage to seed in the spring and then go over the job in August and reseed the thin spots that may not have taken hold. (Illinois.)

ANSWER.—The question you bring up is a very difficult one, and one on which we are frank to say we do not have a sufficient amount of experimental data. Unquestionably the end of August or the first of September is the best time to plant any of the perennial turf grasses. Under your conditions it is difficult for you to do anything but try seeding in the spring, unless you care to try winter seeding, which might possibly yield better results. The earlier you get the seeding done the better. Unfortunately, the ground is usually wet in the spring, with the result that considerable delay is encountered in getting the seeding done. For this reason we would advise you to try winter seeding, if the ground is in condition to seed. The soil should first be carefully harrowed, and after the seed is broadcast the area should be gone over with a weeder. If the seed is sown at any time during the winter it will be ready to germinate promptly in the spring and will easily get two or three weeks start over any spring seeding you could possibly do after the ground is ready to seed in the spring. From the data we have, your chances of success in winter seeding are very large. Even if the stand should be thin in spots you would lose nothing if those spots could be reseeded in the spring. Under ordinary conditions we recommend a mixture of 4 pounds of Kentucky bluegrass and 1 pound of redtop seed for fairways, sown at the rate of not to exceed 150 pounds per acre. For winter seeding, however, we would advise the use of a larger proportion of redtop, say 1 pound of redtop to 3 pounds of bluegrass, as the redtop seed germinates sooner and its seedlings are more vigorous than is the case with Kentucky bluegrass.

2. Controlling mole crickets and ground crickets.—We are having trouble with ground crickets under the turf on our greens. What is the best means for exterminating them? (Texas.)

ANSWER.—The following poison bait is recommended for controlling the ground cricket: 100 pounds ordinary wheat bran, 5 pounds white arsenic, and 1 small jar of beef extract. Sufficient

water to wet the bran will also be required, which is usually about 15 gallons. The beef extract should be dissolved in the water before being mixed with the bran. The bait should be scattered uniformly and rather plentifully where the crickets are feeding. As the crickets feed mostly at night and are attracted to the bran bait principally while it is in a damp condition, it would be better to scatter the bait during the early evening hours.

Thinking possibly what you have reference to may be the changa, or West Indian mole cricket, and not the common ground cricket, we are giving suggestions also for the control of the mole cricket. This insect was described and illustrated on pages 104 to 106 of the June, 1921, number of THE BULLETIN. In that article the following poison bait was recommended for the mole cricket: "Ordinary low-grade wheat flour, with which was mixed 3 percent of Paris green. This was distributed broadcast at the rate of 300 pounds per acre and resulted in a fairly satisfactory control. * * * White arsenic may be used in the place of Paris green where desirable, as it usually may be obtained much more cheaply. There is a bare possibility that the tender grasses of greens may be burned by the application of the arsenicals as recommended, and in this case hydrated lime may be added to the bait in sufficient quantities to overcome the trouble. * * * Since the burrows of the insects are often but a short distance beneath the surface of the soil, it may be found possible to reach them successfully with soil fumigants. The use of carbon disulfid may be attempted in cases where the infestation is of limited extent and injury is severe, in the following manner: Inject about 1 teaspoonful of the liquid into the soil at intervals of a foot or two over the surface, by means of a long-spouted oil can, and cover the same for an hour or two with large pieces of heavy canvas or burlap which have been previously wetted with water."

3. **Winterkilling.**—For several years we have noticed dead patches of turf on our greens at the end of winter, and the same condition has occurred during the past winter. In fact, we find from an examination this spring that they have been very badly attacked by this disease. Have you had any experience with this winter form of brown-patch? (Ontario.)

ANSWER.—We are certain that the trouble you refer to as brown-patch is not a disease. Brown-patch is notoriously a disease of hot weather, especially the large brown-patch, though the small brown-patch frequently occurs as late as October. We have never seen a case of brown-patch occurring during the winter. We suspect that what you call brown-patch is really winterkilling. This injury often occurs in the North, but in 99 cases out of 100 it is found only where the soil is waterlogged at the time of a freeze; that is, if there is a basin in a putting green which holds water, even temporarily, the grass will be killed when a freeze occurs. Even on the slope of a steep hill below a snowbank, where the soil has temporarily become waterlogged, winterkilling will occur. We can offer the following suggestions for preventing winterkilling. The most important consideration is to have better drainage, both subdrainage and surface drainage. Furthermore, it would be well to watch the putting greens during the winter to see that big snowbanks do not form which will keep the soil waterlogged just below the snowbanks during periods

of thawing. Where an entire green is covered with snow or ice no harm will ensue. It also helps to protect the greens with some sort of covering, such as branches or tobacco stems. Of course, there is this objection to such a covering, that as the wind blows the material about, bare spaces will be left. Nevertheless, it can not be expected that such a covering will materially overcome the effects of water-logging due to poor drainage. Some work of this last type has been done around Minneapolis, but its efficacy is still doubtful.

4. Kelp as a winter covering and compost ingredient.—One of our fairways is on clay soil evidently deficient in humus. It was planted two years ago with bent and redtop. Would an application of kelp to this fairway during the winter improve its quality? I have found in my pastures on soil of the same character that a topdressing of kelp during the winter is a decided benefit. In the spring we propose to topdress this fairway with a compost of manure, top soil, and seaweed. (Rhode Island.)

ANSWER.—We have never tried kelp as a topdressing for fairways but have had reports to the effect that unless properly used it is inclined to mat down on the turf and smother out the grass to some extent. If you decide to use kelp we would suggest that you distribute it in such a way that large amounts of it are not allowed to remain on any given area of the grass. Since you propose to topdress your fairways in the spring with a compost made of manure, topsoil, and seaweed, we are inclined to think that this will be all that will be necessary to bring about sufficient improvement. We are sure that kelp composted with manure and soil would be of appreciable value. On the other hand, we are equally certain that the potash contained in kelp is not needed to any considerable extent by your turf. You should bear in mind that potash added to clay soils is inclined to encourage the growth of goose grass and other weeds. On sandy soils we think it would have less of a tendency to do this.

5. Winter applications of manure.—Taking as a basis 10 feet square, or 100 square feet, please advise how much pure sheep manure can be safely used for winter topdressing of German bent greens. Should this manure be mixed with sand and soil? (Washington.)

ANSWER.—Although it is not necessary to protect bent turf from cold by a winter topdressing or otherwise, yet where the soil is poor it will be benefited by an application of fertilizer during the fall or winter. Where, however, the soil is in good condition our advice would be to avoid heavy fertilizing with manure of any kind, as certain troubles, particularly grubs, are apt to follow. If you think that manuring is necessary, we would suggest that you apply it very lightly, so lightly that if the material is ground fine it will not interfere with putting; that is, so that it will all brush into the grass. Broadly speaking, we would say that when it is necessary to use manure on a green the quantity of well-rotted barnyard manure or finely ground sheep manure used should not exceed one-half ton to 6,000 square feet. This material can be applied as often as it may seem necessary; but in any event we advise light applications at a time. If sand is required as a part of your topdressing it is all right to mix the manure with sand, though it is probably less expensive

to apply them separately. A discussion of the subject of fall and winter topdressing of putting greens will be found in THE BULLETIN, Vol. IV (1924), page 248.

6. Watering greens in fall when freezing is likely to occur.—I would like to have your opinion on watering greens in October. In this region the weather is generally very cold at nights in October, followed by warm days. Dew is on the grass almost all day. Heavy frosts occur at night, water freezing in buckets. The dry warm days make the greens hard. Some of our members think the greens should be watered to soften them so that a ball will lie where pitched. I have, however, always thought that water was not necessary for plant life during its dormant period. (Pennsylvania.)

ANSWER.—We have found it necessary to water our greens here at Washington frequently in October on account of the exceedingly dry weather. The grass in October is not completely in a dormant state, and therefore needs moisture. We believe you will find no bad effects from watering in October, but we would suggest that you water sufficiently long before evening so that the excess water may be absorbed by the soil and none is left on the grass to freeze during the night.

7. November planting of bent stolons.—Would creeping bent stolons sowed here in early November live through the winter and make growth early in the spring, or would you advise waiting until spring to plant? (Ontario.)

ANSWER.—We consider the first of November too late to plant stolons in Ontario. Plantings at Washington, D. C., made at that time have, however, been known to live through the winter. Bent will stand rather hard winters provided the soil is well drained.

8. Bent as a southern putting green grass.—Will creeping bent grow satisfactorily in Florida? Will it live there throughout the year? (Florida.)

ANSWER.—Creeping bent is useless in Florida except as a grass for making greens in winter, and for that purpose it is too expensive to use. Your best scheme for putting greens in Florida is to use the Atlanta strain of Bermuda grass as the base of your greens, and in the fall sow redtop or Italian rye grass on the Bermuda turf. The latter two grasses will give you good winter turf.

9. Temporary winter greens in the South.—What is your advice in regard to sowing rye grass or redtop on Bermuda greens for purposes of winter play? (North Carolina.)

ANSWER.—In your latitude it does not seem advisable, in the light of our present knowledge, to use any temporary winter grass on top of Bermuda grass. For winter play, separate temporary greens should be planted apart from the Bermuda greens, and for such temporary greens either rye grass or redtop is excellent.

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