

It should not be necessary to warn the readers of THE BULLETIN against advertisements of this kind. Surely, if they would stop to think, they would shy at the name "Herbae Prati" with no common name accompanying it, or, if not at the name alone, then at least at such statements as these: "The world's greatest lawn grass." "This grass will grow where all others fail." "A lawn in thirty days anywhere." "It will grow in the shade, and heat or cold does not affect it."

Possibly the offering for sale of meadow fescue as "Herbae Prati" might be overlooked, but the offering of it as seed of a high-class lawn grass and at \$1.50 per pound makes the case reprehensible beyond defense. Meadow fescue is a good constituent of pasture mixtures in parts of the country, particularly in the northeastern part of the United States, where moisture and other conditions are favorable; but in no sense is it a lawn grass, and under no conditions should it be sown where fine turf is desired. The price, \$1.50 per pound, is exorbitant. Good seed of it can be obtained from reputable seedsmen at \$12 to \$15 per 100 pounds f. o. b. point of destination.

If the readers of THE BULLETIN will write to the Green Section when in doubt as to statements made regarding grasses or grass seed, they will be given promptly useful and authentic information.

The editors of The Bulletin are always glad to publish contributions from greenkeepers, chairmen of green committees, or others having information of interest to present to its readers on the subject of turf maintenance.

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. Preparation of soil for new greens.—We have a variety of soil on our property with quite a little quantity of muck which was formerly under water but is now drained, also clay running to sand, and a considerable quantity of a fair sandy loam. How would you advise us to use this material in the building of new greens? (Michigan.)

We would advise you to be careful in making use of the muck which you mention. More putting greens have been ruined by the use of commercial humus, which is perhaps similar to your muck, than by any other treatment in the last several years. Try to get the soil for your putting greens as nearly as possible in the condition of a good garden loam. This can be done by working in quite a liberal amount of well-rotted manure. If you can not get well-rotted manure, use fresh manure. It is well to

have the greens constructed a few months before you plan to seed them, as in this way any weed seeds present will germinate, and the manure will have a chance to rot and settle.

2. Renovating Bermuda greens; winter greens for the South.—Our course is a nine-hole course, all completed, with the exception of two greens. These two greens were built with the other seven, but the grass (Bermuda) did not grow, and the greens had to be reconstructed. They were just surface greens having about 6 inches of top soil. Our 9th green is situated in a cove of large oak trees, and the Bermuda grew on it for a few months, but then died out; coco or nut grass, as it is called, then predominated over the whole green. This green receives very little sun. We have rebuilt the green and banked it up about 2 feet. Is it possible to grow Bermuda grass on it, or will it be necessary to sow some other grass? All our other greens are of Bermuda grass, but the grass turns brown in the winter. Would you advise us to sow some winter grass? If so, what kind would you advise, and when and how would you advise our sowing it? The course is used all the year. Will it be possible to continue to play while the greens are being sowed? What fertilizers would you advise using? (Louisiana.)

We are not sure whether your course is on heavy soils or on sandy soils. Exquisite Bermuda turf can be grown on heavy soils, but not nearly so good on sandy soils. Therefore, if the soil is sandy be sure that you have the top 3 inches of a loamy or clay-loam consistency. Bermuda grass does not succeed well in the shade; in fact, it will not grow in heavy shade at all. We rather suspect the trouble with the two greens you mention has been too much shade, although there is a possibility that your drainage is not what it should be. If it is shade, the obvious thing to do is to correct that feature by chopping out some of the trees or some of the limbs so that you can get a reasonable amount of sunlight. There is no good putting green grass for the South that will grow in the shade, and therefore your only remedy will be to provide for the necessary sunlight. To have your greens nice and green during the winter, seed them about November 1 with Italian rye-grass or redtop, or the two mixed. We prefer the redtop alone. We doubt whether in your latitude you will be troubled with the brown-patch disease, which is very serious in Florida. Should that prove to be the case then the best way out is to use bluegrass and white clover instead of redtop, as these two plants are immune to brown-patch. After the Bermuda begins to grow in the spring, the winter grasses quickly disappear. You can continue to play on Bermuda greens on which grass is sown for winter grass, without any harm to the latter. The Bermuda is not at all injured by the winter grass and will take care of itself without any special attention. In the matter of fertilizers, those containing nitrogen are most valuable, such as cottonseed meal, bone meal, etc. If you want to use chemical fertilizers, use ammonium sulfate preferably. This should be used at a rate not to exceed 5 pounds per 1,000 square feet, preferably mixing the ammonium sulfate with sand, so as to scatter it evenly, and then watering it into the ground thoroughly. If you do not water it into the ground you will get some burning of the leaves. This would also be true in case you use sodium nitrate, which can be substituted in place of ammonium sulfate, in the same manner and same amount. Do not use ammonium sulfate at the time of seeding nor for two or three weeks after the seed has germinated.

3. Treatment of sandy soils.—Our course is very sandy and quite gravelly. At a depth of 4 to 10 inches there occurs clay mixed with a rich black soil. Where this rich black soil outcrops it is used for garden purposes, producing abundant crops; it is light and fibrous. When it rains fairly hard, the sand is

washed away from the roots of the grass, which is mostly red fescue, bluegrass, and crab grass, and as a result the turf is in clumps. When the course was built, in 1920, the plowing and harrowing was not well done. The harrowing was not crossed, and the rolling was against the direction of the harrowing. This has resulted in a furrowed condition of our fairways, which contain many pockets, a condition which is accentuated with the heavy rains. Our greens were sowed to * * * Green Mixture, which is supposed to be 80 per cent Chewing's fescue, 15 per cent redbtop, and 5 per cent bent. We have had beautiful greens, and they are still very good, but we have recently had much trouble with clover in the greens, which occurs wild here and tends to occupy the bare spots in the fairways. Formerly * * * Fairway Fertilizer Mixture was used on the greens, as it was \$25 a ton cheaper than the firm's Putting Green Fertilizer Mixture, which sells for \$90 a ton. It is thought that the fairway fertilizer contains more potash and less ammonia than the green fertilizer mixture, and that this fact would account for the encouragement of the growth of white clover in the greens. We are wondering whether we could not use some of the ordinary fertilizers without risk to our greens. We have no compost piles, but will start some at once. Tankage would cost us \$42 a ton delivered, and cow manure \$5.80 a ton. (New Jersey.)

It is possible to grow good grass under your conditions, but we do not believe that any treatment you would give your sandy soil would be of avail unless first an abundant supply of water were provided. A good clay loam is very helpful where sandy soils occur. Furthermore, we are not impressed with the kind of grass you have on your fairways. Fescue is an over-rated turf grass in this country, and golfers have been over-sold on it. You will find that other clubs in your locality have excellent bluegrass on their fairways. This result has been accomplished by liberal top-dressings with mushroom soil. A little bluegrass seed sown on the fairways in the fall will probably help to develop a stand, but it would not be advisable to attempt this unless you can make liberal applications of manure to the fairways. We do not believe the black fibrous soil which you have will be of any great help on your course, but the clay underneath might be; however, a little of the black soil mixed with the clay would probably put it in better physical condition for spreading and avoid caking on the surface. As for the fertilizers you have been buying, \$90 a ton is about twice as much as any good fertilizer is worth. In other words, you can buy the same grade of mixed fertilizers for from \$40 to \$45 a ton from regular fertilizer dealers. We favor the use of ammonium sulfate, because it discourages the growth of white clover and is a quick-acting fertilizer. It causes the grass to spread and thicken materially. Some phosphorus is advisable, and we recommend the use of bone meal for this purpose, as it is less objectionable from the standpoint of clover than is acid phosphate. The tankage you mention should be a very good purchase. From our own experiments with tankage and from observations where others have used it, good results are obtained. Commercial fertilizers can not however be compared with stable manure from a chemical standpoint, as manures give benefits that can not be determined from analyses. Our advice would be that you fertilize well with manure, either cow or horse, getting all of it you can and mixing it with the clay, and perhaps one part of the black, fibrous soil in four or five parts of clay and manure. When this is composted it should give you an excellent top-dressing for the greens, the coarser parts being used on the fairways.

4. Impracticability of starting a creeping bent nursery with seed.—How long after seeding a creeping bent nursery can we expect to have stolons from it for vegetative propagation? (Ohio.)

This is not practicable, as there is no bent seed on the market that contains more than a mere trace of the true creeping bent seed. Stolons of true creeping bent must therefore be used in starting a nursery. A turf bed for patching bent greens can be established from seed, but it will not be pure creeping bent; it will be mostly Rhode Island bent, and if seed from Germany is used it will have a considerable amount of velvet bent.

5. Treatment of greens injured by use of commercial humus.—In the fall of 1922 we built two greens, sowing them with mixed German bent seed. The seed germinated well, and by the middle of the following summer the greens were so well covered that we were able to use them. About the middle of this month (October, 1923), however, the grass on the greens began to become thin and unhealthy in color. Although it is true that we have recently had several killing frosts, these frosts have not materially affected the grass on our fairways or the other greens. In building these greens, we took out the soil to a depth of about 6 inches, and refilled with commercial humus, soil and sand in equal proportions. On four or five of our other greens which were built in a like manner but which are mostly redbtop and bluegrass with a sprinkling of bent here and there, we have noticed scattered spots where the grass has died and on which a green mold has appeared. In attempting to grow grass on these spots, we find it almost impossible to get seed to germinate. We are inclined to believe that all this trouble is due to the use of too much commercial humus. Is there any foundation for our belief? If so, what can we do to correct the condition? (Indiana.)

We feel sure that the trouble you are experiencing is due to the use of commercial humus. We have found the same condition wherever this material has been used. In fact, we have never seen a satisfactory green where a liberal quantity of this material has been used in the construction. It is one of the worst things that has been put over on golf clubs in the past few years. In a number of cases the only treatment which has proved successful was the reconstruction of the greens, discarding the humus. Without advising you to undertake this radical method, we would suggest that you try the use of top-dressings of compost containing a large proportion of manure, also the application of ammonium sulfate at a rate not to exceed 5 pounds per 1,000 square feet. The best time to start this treatment is early spring.

6. Less expensive fertilizers.—We have been using * * * Green Fertilizer on our greens and have very fine fescue greens upon sandy soil. This fertilizer costs \$90 per ton. To save money I would like to use some other fertilizer. We wish to keep out clover and keep the fescue as pure as possible. (New Jersey.)

The only fertilizer we know of that will discourage the growth of clover and promote the growth of grass is ammonium sulfate. You can buy it for less than \$90 a ton. It has been our experience that two applications of ammonium sulfate in the spring at not to exceed 5 pounds to 1,000 square feet for each application, is about all that is usually necessary in the way of artificial fertilizers. In addition, the grass should be top-dressed with compost, both to promote its growth and to obtain a true putting surface. Dried blood, bone meal, and tankage are also good fertilizers, and we are inclined to think that an application of one of these once a year is also advisable for the purpose of supplying the small amount of potash and phosphoric acid that is beneficial to grass.