

## QUESTIONS AND ANSWERS

All questions sent to the Green Section 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 Section.

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. Swamp muck; its value and use.**—We have two or three acres of low land on our property bordering on a sort of swamp. The soil here is black and rich and from 6 to 12 inches deep. We are sending you a sample for examination. It is our intention to scrape together a large quantity of this soil, leave it in a pile to cure, and then use it in the construction of our second 9 holes about ten months hence. It appears to be the same thing as the "humus" which we bought in constructing our first nine holes, and for which we paid a large sum of money. The area is so situated that at a very small expense we could scrape a large heap of it together with our tractor, near the road, where it would be accessible for future use. We have a large compost pile already made, consisting of good top soil and horse manure, which we expect to use on our greens next year. The pile is large enough to last us at least two years in case we should use it on the greens alone. Do you think we would gain anything by using this muck in our compost? (Connecticut.)

**ANSWER.**—While your sample appears to be of a quality as good as that of much of the muck that is used, we have had such poor results from the use of material of this kind that we hesitate to advise its use even when mixed with manure and composted. We would suggest that you have your greenkeeper fill a small box with the muck and sow seed of redbot or some other grass in it, keeping it sufficiently moist for good germination and growth. Do not sow the seed thickly. If the seedlings grow well—that is, do not become yellow and sickly after a few days' growth—we believe you would get fairly satisfactory results from the use of the muck if you mix it with at least twice its volume of manure and the usual amount of loam or clay loam and leave it in the compost pile for six months or more. On the other hand, if the grass seedlings become yellow or have an unhealthy appearance after they have grown in the muck for a few weeks, we would advise you to have nothing to do with the material, even for making compost. Since you already have a good compost pile we are still more inclined to doubt the advisability of starting new piles with material such as you have sent us. To the layman such material looks excellent, but for some reason it has in many cases been positively injurious to turf when used even in compost as a topdressing. It may be that it is because these muck or humus materials are inert (that is, not susceptible to decomposition and thus not producing available plant food) that they prove in general unsatisfactory for turf growing. To illustrate, several years ago we topdressed one of our experimental plots with humus material such as you send us. Later we topdressed the same plot fre-

quently with compost. As a result, the thin layer of muck is now buried about an inch beneath the surface of the soil, and the material still remains there as we applied it, not in the least decayed or converted into soil. Moreover, the turf where this material was used is not as good as that on neighboring plots which were not thus treated. We have seen these mucks used on golf courses to a considerable extent, both on putting greens and fairways, and in all cases the grass presented a starved, stunted appearance.

**2. Restoring greens heavily infested with chickweed.**—We are confronted this spring with the job of killing the mouse-ear chickweed on 7 of our 9 greens. The weed is so general that the whole turf will have to be sprayed, and not simply the infested spots. To kill the chickweed we are planning to spray the turf with sodium arsenite, which will of course kill much of the grass also, and will make it necessary to replant the greens with seed or stolons. Our turf consists of bluegrass, redtop, and some bent. The soil of the greens is about 5 inches deep, and is about 65 percent muck and the balance clay top soil and sand. On this soil we have been able to produce wonderful turf of bluegrass, redtop, and some bent, but we fear it is so rich that if we attempt to replant with creeping bent it will produce a turf too coarse in texture. Besides, we feel that this muck soil will cause us much trouble from brown-patch if creeping bent is planted, as even the bluegrass, which suffers less than most other grasses from this disease, has been injured considerably from brown-patch. To attempt to change the soil this spring is entirely out of the question. Furthermore, due to the lateness of our springs, it would be after the middle of April before we could expect bent stolons to start growth in case we should decide to replant the greens with stolons. For that reason we are considering sowing the greens with bent seed, which can be planted earlier than stolons and which would not necessitate so extensive a tearing up of the soil. Seeding would enable us to save much of the present turf, and would require much less subsequent topdressing than would stolons. On the other hand, we recognize the superiority of a turf produced from stolons, and the use of stolons from our own nursery would obviate the expense of a large seed bill. We should like to have your advice in the matter. (Minnesota.)

**ANSWER.**—We would advise you to spray your greens as soon as possible with iron sulfate in solution at the rate of 1½ pounds to a gallon of water. Rake off the dead chickweed, scratching the soil thoroughly with rakes, treat the soil heavily with ammonium sulfate well watered in, and then sow redtop seed alone at the rate of five pounds to 1,000 square feet. This will give you a turf for spring and summer play. There will be plenty of weed seeds left in the soil, so that it will be advisable to keep your greens thoroughly weeded during the season. Topdress through the season with compost reinforced with ammonium sulfate. In late August or early September plow up the old greens, seeing to it that a good quality of soil is thoroughly mixed with the layer of muck lying under the surface. Then plant your greens with bent stolons in the way advised in the article in *THE BULLETIN*, August, 1925, pages 181 to 183. If however you can not see your way clear to rebuilding all of your infested greens in this manner, it might be well for you to sow stolons directly

on the established turf as advised in the article in *THE BULLETIN*, October, 1925, page 223. We would suggest however that you rebuild at least one green from the bottom up to give you an idea of how it will respond in comparison with the greens in which the large percentage of muck is allowed to remain in a layer under the surface.

**3. Bluegrass, redtop, and white clover as putting green grasses.**—We have a club whose members are of moderate means, and they wish to play golf and keep their expenses as low as possible. They have seeded the greens with redtop, but due to hot, dry weather, and no facilities for water, this redtop died. Now they want to seed this with bluegrass and white clover mixed. Our information in regard to white clover is that it will not stand trampling. Would you advise our using white clover? If not, what would you advise substituting that would be a moderate-priced seed? (Illinois.)

**ANSWER.**—We note that you have used redtop and have not found it satisfactory. This is universally the case where redtop is used as a permanent turf. In the seedling stage—that is, for the first year after seeding—redtop makes a very good putting turf, but afterward it is too coarse and uneven to be satisfactory. Bluegrass, while not a highly desirable putting green grass, has some advantages, especially where water can not be had for irrigation. It has also the advantage of not being attacked by brown-patch, a serious disease of turf, which is very destructive in the summer time. If you decide to use bluegrass we would suggest that you mix redtop with it and omit the white clover. Bluegrass is rather slow in getting started, but after the first year makes very good turf. Redtop, on the other hand, starts quickly and makes very good turf the first year but poor turf afterward. Therefore the combination of the two is quite satisfactory and is generally regarded as the best combination for fairways in this country. White clover is not regarded as a desirable plant on putting greens, but it is present on most putting greens and is difficult to eradicate. We would not advise you to sow seed of it with your bluegrass-redtop mixture, but we feel quite sure that it will come in naturally and be present in your greens in more or less abundance.

**4. Mixing ammonium sulfate in compost before required for use.**—How long before using compost for topdressing may one mix ammonium sulfate with the compost providing the compost is kept under cover? We like to have our compost at least a year old before using it. We keep it under cover, utilizing wet days, or portions of days when nothing is pressing outside, for preparing the compost for use, screening it, and adding ammonium sulfate to it. (Pennsylvania.)

**ANSWER.**—Ammonium sulfate may be mixed into compost considerably in advance of the date on which it is intended for use provided the compost is kept under cover so that it is not exposed to rains. Ammonium sulfate does not lose its strength in dry storage, but it is readily dissolved in water and in this way may be quickly washed out of a compost pile that is not protected from rains.