

virgin, so to speak; for if any one ever got his'n, you're him. I want your help, and I want it bad; but I don't want you to forget I've got your number; and I know you've been through what I am going through, and for that reason I want your advice accompanied by an illustrated lecture showing when, where, and how you made your mistakes.

Say, Chauncey, I'm up against it hard this time and want you to help me out. You know old Henry G. Burns—the tightest thing on earth; he could save money where the Scotch would give up in despair. Well, he has played a couple of times on the Long River course, and he swears it is the best course and the best-kept course in the country and that it only cost \$15,000 to maintain last year. You know and I know it can't be considered a real course when compared with yours or ours; but just the same the old fossil has me on my toes all the time, and I must either get busy with an explanation of why it costs us \$25,000 a year against the \$15,000 spent at Long River, or shut up. It's all right to know that we are not wasting any money here, but I am up against it and must show the differences in the figures, and I must be in shape to make Henry eat his words. If you'll help me satisfy or silence Henry I'll take back the cruel words indicating that once even you were on the sucker list.

You can expect business to be poor until the losses of the country have been absorbed and the dead buried. I'm no clairvoyant, but there'll be nothing for at least a year. Ask me a year from now and then I'll tell you when to ask again.

Yours,

BILL.

## Questions and Answers

All questions sent to the Green Committee will be answered as promptly as possible in a letter to the writer. 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.

1. *We have an abundance of very fine leaf-mold or humus nearby and would like to know if you consider this beneficial as a fertilizer for putting-greens. The soil is heavy clay; would you suggest putting on the pure humus or mixing it with sand or loam? Also what grass mixture is advisable for such a soil? We would like a grass that would spread. H. B. V., New York.*

This matter is treated very fully in No. 4 of THE BULLETIN, a copy of which will be mailed in a day or two. Briefly, leaf-mold is very desirable material for using in compost heaps, but not desirable for using alone unless the material is spaded in and mixed in the soil. As a topdressing it dries up and blows away, and is not recommended. We do not know what you have reference to as "pure humus" unless it is some of the commercial forms called humus, but which are really mucks. These are altogether too costly in proportion to any value they may have, and some of them are toxic. None of them should be used unless seeds will germinate in them readily. Under your conditions a mixture we would recommend for the fairways would be 4 pounds of Kentucky bluegrass to 1 pound of redtop. It is possible that your soil conditions are not such that bluegrass will

persist. The redtop will be good only a few years. The chances are that gradually your fairways will be taken by Rhode Island bent, which is the dominant grass in New England and New York and which makes most desirable fairways. It is sure to come in and occupy the land. But the bluegrass-redtop mixture is the cheapest for seeding.

2. *In BULLETIN No. 5 there is a statement that the best results in the eradication of earthworms have been obtained from bichloride of mercury by applying this in sand at the rate of one pound of bichloride to 100 pounds of sand. Is there not danger in this mixture, first from the handling of the bichloride and secondly from the fact that unless the mixing is thoroughly well done too strong a solution might be applied at a particular point? What objection is there to the method of applying the bichloride in a solution with water, 2 ounces of bichloride to a barrel of 32 gallons? H. F. M., New York.*

In our experience and so far as we are aware, no difficulty arises from the use of bichloride of mercury in a dry mixture as indicated in THE BULLETIN. There is no objection, however, to using this chemical in solution; in fact, we have used it in this way at other times. It involves more trouble and expense but is quite as efficacious.

3. *We are mailing you today three samples or specimens of grass. They are numbered 1, 2, and 3. If it is possible to do so, we would appreciate if you will examine them and advise us the varieties or species. These are taken from grasses growing on our putting-greens. The No. 1 is the most desirable putting grass. Number 3 is the hardiest and best grower. H. A. L., Ohio.*

The specimens all appear to be strains of velvet bent. This is an excellent putting-green grass, and we have made a number of selections which show as much difference as is found between any two of your specimens. It does not spread as rapidly as does carpet bent nor will it stand as much rough usage. There is no seed of velvet bent on the market, but it comes as an ingredient in South German mixed bent. We have some samples that run as high as 50 per cent velvet bent. It is due to this grass largely that South German mixed bent has such a high reputation among golfers for putting-green purposes. You could easily develop these strains by making selections and putting them in a piece of cultivated ground, letting them spread naturally. We find that such a nursery is a very efficient help in keeping up a golf course.

4. *Will you please advise me what would be the best weight roller to use on new putting-greens so as to get the surface even by spring? I have been advised by some to use light rolling and by others heavy rolling. C. W. G., Virginia.*

The weight of the roller to be used necessarily depends on the character of the soil. On sandy soil rollers of the heaviest weight can be used. On clays and clay loams, or even on loams, we would not recommend a roller any heavier than one that would give a proper smoothing to the green. Of course, after the green is once smoothed properly, light rolling will ordinarily keep it in that condition. The general principle is

to use the lightest roller that will give the desired effect. Water-filled rollers are convenient in that the weight can easily be increased or diminished.

5. *Our greens are filled with a lot of coarse grass of which I am sending you a specimen. Can you tell us how to get rid of it? It comes from greens that were seeded about five years ago from seed which we understood to be one-half red fescue and one-half creeping bent. A. D. W., Pennsylvania.*

The grass you send is perennial rye-grass. We can suggest no method of eradicating it other than hand-weeding. We do not recommend seeding a mixture of red fescue and creeping bent, as either does best when seeded alone.

6. *Will you kindly give me your opinion as to the value of tobacco stems as fertilizer for golf turf? This material is available in large quantities. E. J. M., Ohio.*

Tobacco stems are often used as fertilizer in the tobacco-growing districts. They carry a high percentage of potash and also considerable nitrogen. If you could get the tobacco stems ground fine enough so as not to make a litter on the greens they would undoubtedly be beneficial as a fertilizer on putting-greens. We do not think, however, they would cure all the troubles experienced in growing fine turf.

7. *Would powdered charcoal be a good treatment on putting-greens which do not get the sun until nearly noon? The wet weather we have had and insufficient morning sun seemed to be the cause of two of our greens souring and the grass dying off. We have used lime and bone-meal, and while they have been again restored to service we are not certain as to the durability of the surface. T. M., New York.*

The chief trouble with your greens, evidently, is too much shade. To overcome this it would be best to fertilize heavily. For this purpose continued applications of bone-meal should be helpful, and we would also advise the use of sulphate of ammonia at not more than 250 pounds to the acre or 1 ounce to 10 square feet at a single application. The application of powdered charcoal would do no harm, but we have never seen sufficient benefit from it to justify the expense of using it.

8. *Our greens are in fairly good shape from last year's seeding. If we should not be able to obtain any satisfactory bent or red fescue seed for fall sowing, would you recommend that we use redtop alone this fall and then use bents or fescues next spring and fall? R. A. Y., Indiana.*

As you say your greens are in fairly good shape, we do not believe there is any need of reseeding with anything this fall. Redtop will give you a better-appearing green for a few weeks this fall, but after redtop gets beyond its seedling stage it is coarse and unsatisfactory on a putting-green. We believe it would be better for you to put on a fine top-dressing of compost and try to improve the grass that is already on the greens rather than incur the expense of sowing seed of poor quality on the greens at the present time.