

it to the limit. He did not do the arbitrary thing his position in the club permitted him to do—that is, top-dress the entire fairway area. That would have created resentment and probably have convinced no one. He did a wiser thing—he selected an area on No. 3 fairway which was even poorer than the average. On June 7 he top-dressed this with about a yard of mushroom soil. The area was rectangular. On all sides was untreated turf. This, he reasoned, would show whether his treatment was sound or not. It did not take many days to prove the soundness of his original proposal. It should be noted here that the soil of the fairways Mr. Read intended to treat is very sandy and the turf composed mostly of red fescue and decidedly cuppy. On June 24, when these observations were made, the turf on the rectangle that had been treated with the yard of mushroom soil was so outstandingly better than the surrounding turf that it attracted the attention even of the least-observant players, and that, to use a common expression, “is going some.” If Mr. Read’s fellow members are not convinced—but why conjecture? All of them are men of intelligence and know when a point is proved. It was all very simple, and yet the little mushroom-soil-covered rectangle constitutes one of the amazingly few real demonstrations made in the production and upkeep of golf turf. Mr. Read and his greenkeeper realized the value of a check.

Additional Notes on Brown-Patch

R. A. OAKLEY

In the vicinity of Washington, D. C., and elsewhere there has been some very excellent “brown-patch” weather since the June BULLETIN was issued; consequently there has been considerable activity on the part of this turf disease. From the many reports that have been received it is evident that Bordeaux mixture is being very generally used to prevent or control it. Apparently in most cases the dust form of Bordeaux is preferred to the liquid, because it is more easily applied. The control of the brown-patch disease is the most important problem in the maintenance of putting green turf where the northern fine turf grasses are used. Therefore it is believed that the readers of THE BULLETIN will welcome any contribution tending to bring the knowledge of the subject up to date.

A large number of treatments seeking to control brown-patch effectively and practicably are now being tested at Arlington. These treatments include the following: Bordeaux mixture and other copper compounds, mercuric chloride, formaldehyde, lime, lime-sulfur, various alkaline-reacting and acid-reacting substances and compounds, and charcoal. Thus far Bordeaux has clearly shown its superiority over the other treatments and has indicated its efficacy as a preventive of brown-patch when it has been properly used.

As a result of the work at Arlington, it seems at least reasonably safe to draw certain conclusions with regard to the use of Bordeaux mixture in the control of the brown-patch disease of turf. These conclusions briefly stated are as follows:

Bordeaux dust can easily be applied with a dust gun or a machine of the nature of a wheelbarrow seeder, although neither of these is exactly ideal for the purpose, and it is believed that both types of apparatus will

be greatly improved in the near future. To be effective, Bordeaux must cover the grass blades sufficiently so that the powder is easily discernible without close observation. Bordeaux dust sticks to wet grass leaves better than to the dry leaves, and therefore it should be applied when the dew is on, or if this is not feasible the grass should be sprinkled before dusting. Liquid Bordeaux properly sprayed on the grass may be somewhat more efficacious than the powder because of its greater ability to adhere to the leaves. The powder, however, is much more easily and economically applied. It should be kept clearly in mind that the grass leaves should have Bordeaux in contact with them at all times when conditions are favorable for brown-patch. Excessive use of Bordeaux, however, is regarded as undesirable, since our limited experience indicates that it produces a condition in the soil unfavorable to the growth of grass.

The foregoing conclusions from the experiments at Arlington and from reports that have been received do not add materially to the knowledge of the behavior of brown-patch or its treatment, but they may serve to increase confidence in the ultimate satisfactory solution of the brown-patch problem.

Field observations and reports that have been received by the Green Section suggest that possibly there may be more than one strain of the fungus that causes brown-patch, since the manifestations of the disease are not always the same. Sometimes the grass is injured in small, quite regular spots two to four inches in diameter; sometimes in much larger spots, also quite regular; and sometimes the pattern of the affected turf varies greatly in area and is irregular in outline. This feature of the subject is being studied and will be reported on later. It is a fair assumption, however, that no matter how many strains of the fungus may be involved in the production of brown-patch, the treatment or treatments that prove efficacious for one will likewise prove efficacious for the others.

The Green Section solicits suggestions for the treatment of the brown-patch disease. The facilities at Arlington for conducting investigational work are very inadequate, but worthy suggestions will be tried out there to the extent that space and funds will permit. Already a great many suggestions have been offered, and for these the Green Section is very thankful. Also a great many theories have been advanced as to the cause of the disease. Sometime a page or two of THE BULLETIN may be devoted to them.

The Essentials of Construction and Maintenance of Grass Putting Greens

C. V. PIPER AND R. A. OAKLEY

I. HIGH GRADE GREENS IN THE NORTH.

1. *Soil.* A rich loam, at least the top three inches.
2. *Drainage.* Must be good both for surface and subsoil. Use tile for subdrainage where artificial drainage is necessary. Do not use cinder or other artificial drainage layers.
3. *Grass.* The best grasses for seeding in order of preference are: Sow pure seed, not mixtures. Seed between August 20 and September 10, South German mixed bent, Rhode Island or Colonial bent, Chewings fescue.