

During the experimental period before the hazards are actually built, the members can see the plans, not on paper but on the ground at full size, and criticisms are freely offered—a thing which is of much interest and value to the committee in charge. These criticisms at Leland were discussed, and in numerous instances adverse criticism was changed to understanding approval. It tended to good feeling on the part of all concerned to have objections and suggestions thought over in advance.

Bermuda Grass at Richmond, Virginia

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Richmond is located below the Piedmont, above the Coastal Plain, a little far north for Bermuda grass and south of where the bents and fescues grow best. Our fairways, if kept rich, do not present serious difficulties, as the cool-weather grasses and summer grasses succeed one another as the seasons come and go. But the putting-greens, where it is desirable to grow one variety of grass, present a problem. Observation of a good, rich lawn in this vicinity shows much Bermuda appearing naturally about the first of June and increasing until frost, at which time old patches of redtop and bluegrass begin to strength up.

Falling in line with these natural climatic conditions, last fall (1921) at the Hermitage Club we seeded eighteen new greens (previously well prepared by liberal use of mushroom soil) with redtop. We had splendid germination, and by early spring the greens were remarkably good for new greens. They were opened for play the first of April, and stood up splendidly for two and a half months. Early in June we noticed slight deterioration, and by the middle of the month were convinced the redtop was going; and we decided at once to sow Bermuda seed.

Without disturbing the redtop then on the greens (which was still passably good), we spike-rolled and seeded Bermuda at about the rate of 5 pounds to 1,000 square feet, and top-dressed, using a dressing of one-half mushroom soil and one-half our natural soil. The last green was seeded on the 28th of June.

As a rule the greens were put back in play within ten days from seeding (as soon as the top-dressing had settled in and germination had fairly started), and were played continually from that time on right through the germinating period.

During the month of July the redtop gradually disappeared and the Bermuda rapidly increased. For two or three weeks the greens were seriously threatened with crab grass and other foreign growths, but extra labor was put on to cut this out and patch the holes with seed and top-dressing. The first of August found us with practically clean Bermuda greens, with no bare spots, and no redtop in sight. They have improved steadily since, and at this writing (nearly the first of October) they are thought by many to be the best putting-greens we have had in this section.

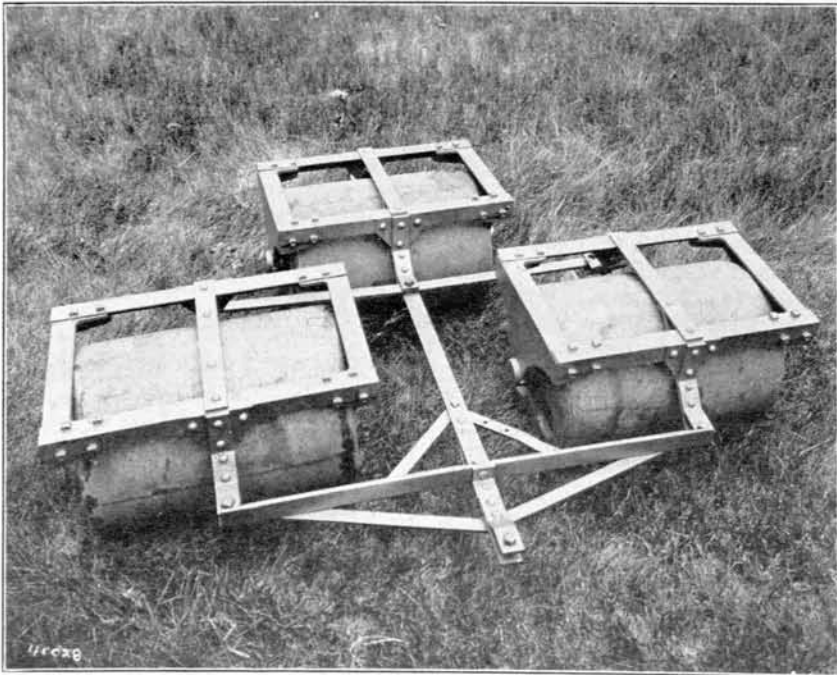
Observation and experience are teaching us, however, that Bermuda putting-greens can be greatly refined by judicious top-dressing. The white Bermuda stalks (even when there are no runners) rise above the surface of the ground, and when cut close enough for good putting leave the green with white stalky spots. This condition can be prevented by keeping the green filled to the top of these stalks with a fine top-dressing. Our experi-

ence is not yet sufficient to say in what quantity and how frequently this top-dressing should be applied. The present thought is that frequent light dressings will do best, and perhaps at the rate of one yard every two weeks to a green of 5,000 square feet. If this be true, cheaper top-dressing and less expensive methods of screening and spreading must be found.

With our first heavy frost (about November 1) the Bermuda leaves will brown and wither. To overcome this we are now again (in September) seeding the greens with redtop and expect to have seedling redtop for late fall, winter, and spring play. And again the first of May we intend to seed with Bermuda for the summer. This may seem an expensive operation, but the entire cost of both the Bermuda and redtop seed will not be in excess of \$200, the labor cost for the actual seeding not great, and the same top-dressing being probably necessary anyway.

However, the above is by no means intended as a conclusion concerning grasses for putting-greens at Richmond, but rather a recital of the past year's experience. While we are treating sixteen greens, as previously outlined, we are also planting (by the vegetative process) two greens in carpet bent, using material grown on our grounds during the past year, and we have great hopes of succeeding with this superior putting-green grass.

We shall be thankful for suggestions along these lines from others more experienced. Send your contribution to the BULLETIN—it is doing great work.



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