

to the desire of our members to bring the course up to a higher standard, which naturally entails greater expenditures.

It is apparent from Mr. Rockefeller's article in the March BULLETIN that he has a fear of standardized accounting, and, it would seem, with very good reason, because it is impossible to bring out in comparative figures the many varying factors and give a really fair result. Not only are accounting practices among golf clubs widely different, but there is and can be no standard of maintenance. The degree of maintenance is dependent on the wishes of the members and their willingness to pay. Even if we had uniformity in accounting practices and standards of maintenance, local conditions and physical characteristics of courses moreover make comparative figures of doubtful value. Surely we do not want our courses identical any more than we want 18 holes all alike.

The question is not how much is spent on maintenance—that is the concern of each individual club—but rather how well the money is spent. Thanks to the Green Section and the efforts of the greenkeepers' associations, great progress has been made in methods used. Cheap maintenance is not of necessity economical maintenance; it may be, and generally is, expensive in the long run. But it is very easy to get the issue confused in the mind of the average member, who knows little about the subject, and bring about a demand for what is regarded as economy but what really is a demand for a starvation policy. Some time ago the greenkeeper of a neighboring club made a most pertinent statement. He said he had come to the conclusion that when a club started a policy of so-called economy it was time for the greenkeeper to quit. In time he would lose his job anyhow; but if he tried to hang on he would lose his reputation as well.

Frankly, my sympathies are with the greenkeepers. As a body they are doing their utmost. They have shown a most remarkable desire to improve their methods and a willingness to apply the results of research. I most certainly do not think they should be harassed with unfair comparisons or subjected to what may assume the aspects of a "senatorial investigation."

Bent stolons may be planted at any time during the growing season provided they are kept moist by frequent watering. Late summer is, however, the best season for planting, as trouble from weeds and from hot, dry weather is then at a minimum.

Brown-Patch Experiments and Notations Made at Kittansett Club, Marion, Mass., During Season of 1927

By A. B. Porter

For several seasons at Kittansett observations on brown-patch showed that generally the attacks occurred regularly on certain greens year after year and just as regularly did not occur on others. This was one of the reasons why the following experiments were conducted during the season of 1927.

The brown-patch referred to in this article is the large brown-patch that varies in size from 4 inches to 18 inches in diameter and not the small or "dollar spot." This latter type is not common in Massachusetts and has never occurred at Kittansett.

Before the beginning of the brown-patch season, which generally starts the last week of June, we obtained various kinds of remedies to have on hand when the first humid and hot weather made its appearance. The materials which were obtained consisted of the following: Calogreen, calomel, Nugreen, Uspulun, Semesan, and corrosive sublimate. We also obtained a good maximum and minimum direct-reading thermometer and a hygrometer (an instrument for determining the humidity of the air).

Every one in this section of the country will remember the quantity of rain we had during the entire summer. It was not until July 9 that any brown-patch weather arrived to worry us to any extent. On that day we treated our No. 4 green which, in previous years, had been subject to severe cases of the disease. This green is in a position where it is not exposed to the prevailing winds from the southwest, being surrounded on three sides by dense woods. It also is quite low, being just above the level of the salt water marsh across which the drive is made on this hole. This fact, plus the lack of air movement around and over the green, seems to be the reason and only reason why this green was affected before most of the others.

The method employed was to divide the green into quarters, treating one quarter each with Semesan, Uspulun, and Calogreen, leaving a quarter untreated as a check. It is interesting to note that on the day following the application No. 5 tee, within 15 feet of this green, where the grass on the tee was quite long and lush due to so much heavy rain, was visited by a very heavy attack of brown-patch, while not even the untreated quarter of the green showed any sign of an attack. It was not until July 18, after several days of damp, muggy weather that the untreated quarter of the green showed any signs of brown-patch, and then only traces of it. On July 20, however, the untreated quarter was severely attacked, and slight traces occurred on the other three quarters, showing that under these conditions of rainy weather any treatment lost its effectiveness after ten days. All three of the preventives, apparently had the same effect for the same length of time.

No. 15 green had always suffered in past years, and beginning July 13 it was given similar treatment. One section was treated with Calogreen and another with Uspulun, with a check strip left untreated. Practically the same results were observed as on No. 4 green with the same conditions. This green also is protected from the prevailing southwest wind and is also low, in relation to the surrounding land. This green was not constructed with the same care as the others with regard to drainage, and this undoubtedly helped to maintain a damp condition over the green.

Some of the other greens, of course, were subject to attacks but in every case it seemed to point to the lack of air circulation or low ground. The 1st, 2nd, 16th and 17th greens were all exposed to the open sea breezes and none had even the slightest trace of brown-patch, even though no preventive chemical whatsoever was used during the entire summer.

The other preventives mentioned above were all used in comparison with each other, and so far as our observations showed, no one material was better or lasted longer than another, it being simply a question of the initial cost, the fertilizing and curing qualities in each that would determine the best and cheapest product in the long run.

Other chemicals were used and tried other than these mentioned but the results were not sufficiently positive to mention them until we have tested them again.

Our temperature and humidity readings showed that in every case it was necessary to have both a temperature of over 74 degrees and a humidity of over 86 degrees in order to have an attack of brown-patch that was noticeable. Had there not been so much rain during the entire summer, we were planning to have used less water and sulfate of ammonia on our greens in order to check the growth of the young shoots of grass that are more tender and more subject to the disease. With so much rain, our "drying up" policy could not be carried out. In fact, no sprinkler was used on any of our greens from about June 20 to the end of the summer.

Kelp and other seaweeds as compost ingredients.—Seacoast golf courses frequently have available an abundant supply of seaweeds for use in compost piles. As a rule these plants should be as valuable for composting purposes, as are the forms of organic material most commonly available to inland courses, such as leaves, grass clippings, mushroom soil, and manure. One of the most abundant of these seaweeds is kelp, which, on account of its relatively high potash content, is of value in the manufacture of potash fertilizers. On certain soils applications of potash tend to promote the growth of goosegrass and other weeds. Therefore, if the continued use of large quantities of kelp as a compost ingredient is contemplated, the matter of its potash content should not be lost sight of, as unsatisfactory results may follow. In any case it will be desirable to improve the compost with some fertilizer with a high nitrogen content.

Minimum depth of top soil for bent greens.—Four inches of good top soil is sufficient for creeping bent, provided the base is free from large stones and roots that might interfere with changing the cup. It is not necessary to sift the soil for this purpose, as the stones or roots can readily be raked out after the soil is evenly spread on the greens.

As Others See Us

"It is only necessary to read the very adequate reports of the United States Golf Association on the research and the results achieved by their greenkeeping section to recognize how far behind we are in this country in the direction of coordinated knowledge in all that affects good greenkeeping. It is some years since the Royal and Ancient appointed a scientific committee, but until now the golf clubs have heard nothing more of the work of that committee. Something is to be done, however, in conjunction with the Golfing Unions, and there is no direction in golf where joint action should be more fruitful of benefit to the game than well-informed experience on the result of greenkeeping experiments." *Golf Monthly*, Edinburgh, Scotland, March, 1928.