Double Bermuda Greens and Their Treatment

By Thomas P. Hinman

Druid Hills Golf Club, Atlanta, Ga.

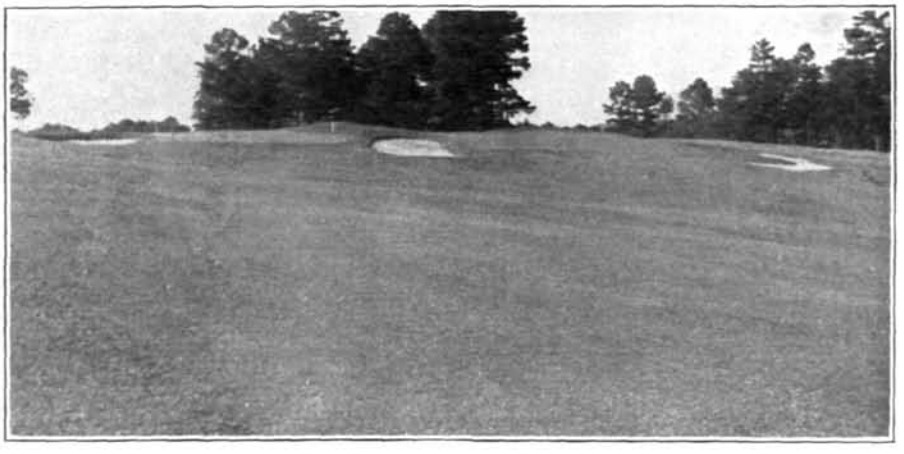
The problem of putting greens in the South, where Bermuda grass is used almost exclusively, has been rather difficult of solution. Previous to 1917, these Bermuda greens were used throughout the year. When the frost killed the Bermuda grass we putted on the dead surface, frequently sprinkling a little sand on the greens to make the surfaces more true. We were then greatly annoyed by the presence of what we called "winter grass," or annual bluegrass (*Poa annua*), which grew in clumps on the green and practically destroyed what putting surface the dead Bermuda made. The continuous use of the putting green while the Bermuda lay dormant packed it so that frequently large areas of the grass roots were destroyed and the green came through the winter with the surface in a very unsatisfactory condition.

Double green of Number 11, Druid Hills Golf Club, Atlanta. The two distinct playing areas of this green are divided by a steep turf bank where grass is allowed to grow long. The decided difference in elevation and the difference in slope of the fairway give a variation in playing this hole depending on whether the winter or the summer part is in play.

In 1916, Scott Hudson, president of the East Lake Country Club, conceived the idea of sowing a mixture of Italian rye grass, fescue, and redtop on a portion of the Bermuda green and using it as a winter green. The portion of the green that was sowed with the grass mixture was, however, found to be in a very poor condition in the spring when the Bermuda grass started to grow. After a number of years of testing, we found that rye grass sowed alone gave best results, as fescue and redtop did not last long. In 1917 Mr. Hudson decided to make two greens for each hole, maintaining the length of the hole as nearly equal as possible for both greens. This plan was so satisfactory that it has been adopted in this section as standard, and nearly all of the courses now have two sets of greens, one for summer and one for winter play. In this climate, where golf is played the year round, we believe it is necessary to have these two sets of greens, for in that way there is no interruption of play and no necessity of in-

stalling temporary greens between the time of abandonment of one green and beginning play on the other. In using single greens, if a green is planted in rye grass and is played during the winter, there is always a certain amount of time during which it can not be played. This interval usually amounts to at least six weeks. Moreover, in the spring there is no gradual transition between the rye grass green and the Bermuda green, so that temporary greens have to be put in again for at least six weeks.

Two distinct types of double greens are illustrated in the photographs appearing on these pages. The new course of the East Lake Country Club has two separate greens for each hole, although the line of division is not as clearly defined as in some of the greens at the Capital City Club, which were designed and built by Howard Beckett. As it has been found both economical and advisable to cover the summer or Bermuda greens in the fall just as soon as the grass becomes

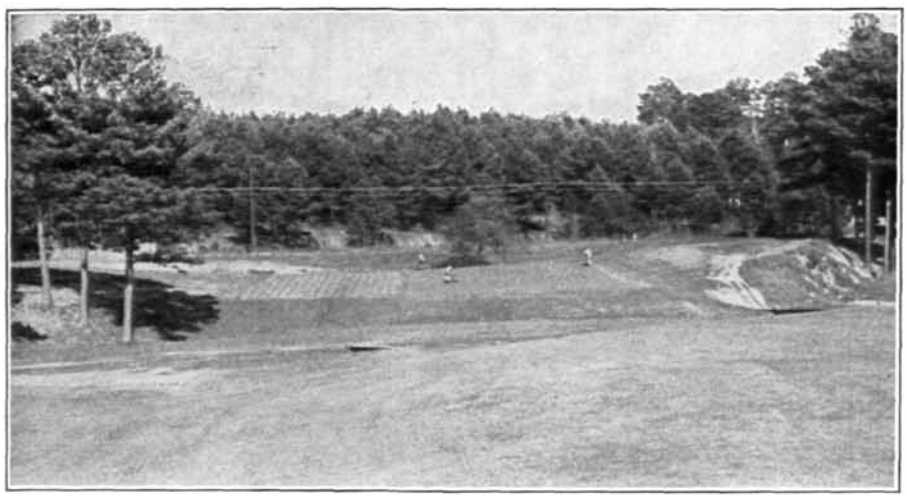


Double green of Number 8, Capital City Club, Atlanta. This green is distinctly divided into summer and winter playing areas with the trapping similar in each case. The winter green is on the left and the summer green is on the right of the dividing sand trap.

dormant, it is better to have the summer and winter greens as far apart as possible, since it is rather difficult to play over the summer green, which is covered with pine needles, wheat straw, or some other substance. Under this latter condition there is a local rule to the effect that the player must drop off or around the covered green.

Two methods have been used for planting the winter greens. The method most generally adopted is as follows. After the winter green has been laid aside and we begin to play the summer green, the Bermuda comes up in scattered spots on the winter green and gradually spreads until it covers the whole green. During the summer, this winter green is kept mowed with a machine that is set to cut at about ½ inch. In the fall, approximately October 1, these winter greens are cut very close, then thoroughly raked and cut again, and then sowed with about 80 pounds of Italian rye grass seed to each green. They are then fertilized with about 100 pounds of tankage, and as the rye grass germinates in about six days, the first cutting is done around the tenth day after sowing. The frequency of the cutting is dependent entirely upon the growth of the green. We usually start playing these greens about the 1st of December. The rye grass gives

a very fair putting surface; but annual bluegrass begins to make its appearance about this time and by the 1st of February has filled in the green so as to make an excellent putting surface. By the 1st or 15th of June, when these greens are laid aside to use the summer greens, the rye grass has practically disappeared and we have nearly a pure annual bluegrass green. The annual bluegrass however disappears shortly after this. The other method of planting, which has been adopted by Mr. Beckett of the Capital City Club, is early in September to skin the green of all grass with a hoe, rake it up, then cover with top soil to which has been added 100 pounds of tankage, and sow the third day in rye grass. It is his opinion that we thus get a better putting surface. The local greenkeeper's club is watching these two methods with a great deal of interest, and we shall be able to report later which is more satisfactory.



The simplest type of double green, Number 7, Capital City Club, Atlanta. Where space or construction requirements are prohibitive it is found that double greens of this type will suffice instead of the more clearly defined areas such as shown in the two preceding illustrations. One-half of the putting area of this green is set aside for winter use and the other half is groomed for summer play only. No structural differences mark the line between the two sections.

Regarding the treatment of the summer green that is abandoned over winter, it has been found economical and satisfactory to cover the green with pine needles, wheat straw, or some other substance which will prevent the frost from destroying the dormant roots of the Bermuda grass. In this particular section there is a great deal of winterkill of the Bermuda roots, and the greens come up very spotted and grow very slowly. This covering accomplishes two things: first, it lessens the quantity of annual bluegrass which has to be cut out with a hoe when the green is being prepared in the spring for summer play; second, the green comes up more evenly and grows more vigorously in the spring. In the October number of the Bulletin Mr. Beckett has discussed in more detail this subject of covering the summer greens over winter, and his article merits careful study in connection with my own observations on the subject. However, in the spring we have found it necessary in every case to sow some additional Bermuda seed. The amount depends, of course, on the number of bare and thin spots on the green. Covered greens come up much more rapidly and evenly and are ready to play from two to

three weeks ahead of those that have been left to the mercy of the weather. The United States Golf Association Green Section has a local experimental plot at Druid Hills where we are making some tests with Bermuda grass covered with various materials, including cottonseed hulls. Some of the plots will not be covered, in order to provide a control. Next year some of the results of these tests may be available for publication.

Save the birds from starvation over winter.—The providing of food for birds on golf club properties this winter is urged by the golf club bird-sanctuary committee of the National Association of Audubon Societies. A pamphlet entitled "Winter Birds as Guests of Golf Clubs" has just been issued by the association and is being distributed from its offices at 1974 Broadway, New York, N. Y. In the pamphlet the following statement appears: "It is not the cold weather that kills birds. It is the lack of food. Their presence adds a touch of life and good cheer. As we feed these winter guests we come to regard them somewhat in the light of personal possessions, and with the satisfaction of one who feels that he has done the right thing by his neighbors." The pamphlet contains specific instructions as to the simple methods that may be successfully employed to care for birds about golf club properties during the winter months. This pamphlet, it is announced, is the first of a series of publications to be distributed in the campaign which has been inaugurated by the National Association of Audubon Societies to make bird sanctuaries of golf club properties.

About 337,000 insect parasites of the Japanese beetle were received in the United States from Japan and India during the 12 months ending June 30, 1929. It is reported that 5 or 6 species of these insect parasites have now become well established in this country. It is expected that the introduction of these insects will keep the abundance of the beetles reduced to such an extent that the damage the beetles may cause from year to year will be no more serious than it is in the Orient.

The development of an organic insecticide which may take the place of arsenate of lead is a problem which specialists of the United States Department of Agriculture are encouraged to regard hopefully. An organic insecticide now being studied with this end in view is rotenone, at present obtained chiefly from the roots of derris, a plant occurring in Sumatra and the Malay Peninsula. A new source of rotenone promises to be a wild plant occurring in the mountains of Bolivia and Peru, called "cube." The Indians of those countries use the roots of this plant to poison fish. Small quantities of the plant thrown in streams stun the fish sufficiently for the natives to catch them with spears or nets. It is thought the plant may be adapted to growing in the southwestern part of the United States. The demand for organic insecticides, such as mowrah meal, nicotine, and pyrethrum powder, seems to be much greater than the supply. For most agricultural purposes these materials are to be preferred to the inorganic insecticides, such as mercury and arsenic compounds, since their poisonous effects are attended with less dangerous consequences, especially when used on fruits and vegetables.