

the sweeper, a special sweeper is generally used, such as illustrated on page 89 of the BULLETIN, Vol. III. The ants and other litter swept up are burned by treating the pile with gasoline.

Constant attention to ant hills is necessary where the insects are abundant. When once killed or driven out they are certain to return. In any case, if the hills are swept or washed away each day the damage to the turf should be negligible.

## Growing Grass Turf and Raising Crops

By C. V. Piper

It seems to bother a lot of green committeemen to be told that principles and practices used by farmers in raising crops do not apply equally to growing turf on a golf course. Particularly is this true in regard to soil treatments. Perhaps a few simple statements on the reasons for certain farm practices will clarify matters and indicate why general agricultural treatises are poor guides for golf course management.

First, it is to be borne in mind that farmers grow most of their crops in rotation, which usually involves plowing the fields once or twice a year. Clearly such a practice is not desirable on a golf course; so the tillage methods used and the fertilizers applied to the different crops bear little if any relation to golf turf culture.

Lime is used by farmers primarily because it has such a marked effect on clovers and alfalfa. A good clover crop commonly insures a good corn crop following. But clover is not particularly desirable anywhere on a golf course, and corn crops are not ordinarily raised on golf courses. Lime also has a marked tendency to favor weeds, a thing the farmer well knows; but to him a good clover crop is of far more importance than the additional weed trouble.

The meadow grasses used by farmers are those which, under their conditions, will give the best crops of hay. They are practically all different grasses from those used to produce turf. If maximum hay crops are desired on the fairways or in the rough, the farmer's methods may well be followed; but golfers usually feel irritated if even the rough is a sort of hayfield. There is no reason to believe that the methods which will grow the best hay crops will also grow the best fairways.

Farmers use cultures of certain bacteria to apply to seeds of legumes in order to be sure that the nodules will develop on the roots, as these have much to do with the growth and yield of the crop. For any other purpose as regards crops, cultures of bacteria have never been found useful. At the present time golfers are being urged to buy bacterial cultures, touted as being wonderful stimulants of turf. This game has played out with the farmer, as abundant investigations and experience show these cultures to be worthless.

Permanent pastures are the only fields on the farm that in any way resemble a golf course. Indeed, the game of golf began on such pastures. The results of pasture investigations do have a direct bearing on golf course management, but unfortunately less research has been devoted to pastures than to any other phase of farming. However, some of the findings in pasture investigations are perfectly clear:

1. In any given region some permanent pasture grasses are much more valuable than others; thus bluegrass and white clover on rich

lands in the northern half of the United States; Rhode Island bent and fescue on the acid soils of New England; Canada bluegrass on poor gravelly soils in the North; Bermuda grass on clayey soils in the South; carpet grass on low-lying sandy soils in the South; and many more cases might be cited.

2. Continuous heavy grazing keeps the pasture in better condition than does light grazing. If grass is allowed to grow tall or remain ungrazed, the pasture deteriorates, weeds increasing greatly.

3. Surface applications of nitrogenous fertilizer increase the amount of growth greatly. Similar applications of phosphates greatly increase the amount of white clover. Lime helps clover less than the phosphates, but it stimulates various weeds.

4. Harrowing or disking has little if any beneficial effect.

5. Old run-down pastures can be greatly bettered by plowing, fertilizing, and reseeding.

6. Sowing seed of the same kind on old turf is never beneficial. If a new grass is introduced which under the conditions is efficient, it may increase the pasturage greatly.

All of these things apply to golf courses, at least to fairways. Use the grass or grasses best adapted to the conditions; keep the turf closely mowed; fertilize with nitrogenous fertilizers, such as tankage, cottonseed meal, and ammonium sulfate, but do not use phosphates unless you want more clover; avoid the use of lime; disking is not advisable; sowing additional seed is useless, unless you sow a different kind of seed. Bent will catch on any other kind of turf. So will redtop to some extent. Most other turf grasses must be sown on a well-prepared, firm seed bed, to be of any use.

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### Some Decisions On the Rules of Golf

A and B are playing a match in the second flight of the local city championship. At the fifteenth hole A outdrives B many yards. B played his second shot; and while A is addressing his ball to play his, B drops another ball and plays it in practice. A claims interference by B, which caused him to lose the hole. Regardless of interference, has B the right to play a practice ball in competition?

Decision (*United States Golf Association*).—B loses the hole. A player has no right to play another ball in a competition. In stroke play a player is disqualified from the competition.

In a bogey competition a competitor played his second stroke at the sixteenth hole into a bunker. Disgusted at the shot, he dropped another ball and, saying "This is how it ought to be done," drove it over the bunker and over the green. He holed out with his original ball. Did he incur any penalty?

Decision (*Royal and Ancient No. 266*).—The player is disqualified for that hole.

In a stroke competition, a competitor missed an approach shot, dropped another ball, and played it toward the green. He holed out with the original ball. The committee disqualified him. Was the decision correct either under Stroke Rule 4 (2) or any other rule? What, if any, is the limitation upon the playing of practice shots other than "before starting" in stroke competition?