## SPECIAL PROBLEMS OF TEES

As various improvements have been made in playing the game, short and long tees have come more in demand. The changing from one set to another materially affects the playing of the course from the architect's standpoint and also lends an added interest to the game to the regular players on the course. Moreover, two or more tees to a hole are of great help to the greenkeeper, since they afford him opportunity to do needed repair work to one tee or set of tees while the others are in use.

The teeing surface has not only been increased by the system of building two or more tees to a hole, but the surface of the individual tees has been increased. Tees elevated high above the fairway and with steep banks add greatly to the cost of maintenance. However, with increased teeing space has come a more sensible mode of construction, resulting in gradual slopes which can be mowed with fairway units.

Some holes can be greatly improved by elevating the tees so as to bring into view landing areas or greens which the player on the tee otherwise would be unable to see. Except for such cases it however improves the landscape to build the tees so as to conform with the natural topography. It is easy to make the elevated tee less conspicuous by carrying a long grade away from its surface so that it may blend more closely with the surrounding landscape. When tees may be built practically flat on the ground, so much the better. An elevation of a foot or so from the surrounding ground is usually advisable to give the tee increased drainage, which is necessary since play is concentrated on it. When tees are built low and with long slopes running from them they may be easily mowed with the fairway mowers at the same time as the fairways, or if built in positions where the fairway mowers can not reach them it is easier to mow a slight grade than it is a steep one, with a tee mower.

The topsoil of the tees should be prepared as for putting greens, and drainage, wash and seepage should likewise be taken care of.

Tees are usually seeded to the same mixture as the fairway, only more care is taken to secure a thicker and tougher turf. Since tees are put to such hard usage, it is usually advisable to seed the tees before either the fairways or putting greens in order to give the grass longer to fill in. However, everything can not be done at once, and frequently the tees are let go, so that it is advisable to sod at least one set, on which the members may commence play, while the others may be seeded and be given more time for the turf to become established. On short holes the wear on tees is particularly severe, since iron shots are played from the turf and large divots result.

## SPECIAL PROBLEMS OF SAND TRAPS

On low areas sand traps are liable to become flooded and sometimes to remain so for days after a heavy rain, whether the soil is sand, clay, or silt. This flooding occurs also on traps built in heavy, close-textured soil, even though the traps may have plenty of elevation. Sand traps, whether around greens or in the fairways, should be more or less open in the front and elevated as much as possible in the rear. This form of architecture aids in the drainage of the traps as well as in giving the player a chance to see not only the location of the traps but to a large degree the extent of the hazard.

## August, 1928

When traps are built on a soil which is comparatively impervious, the sand tends to wash to lower areas during heavy rains. Therefore the elevation of the rear of the traps must be more in effect than in reality. If the soil under the sand in the trap will readily absorb water, the danger of washing is lessened.

Except in traps built on these open or porous soils with sufficient elevation, the floor of the trap should have a grade not in excess of 2 feet in 50 feet. However, the effect of greater elevation and consequently greater visibility of the trap may be gained by constructing a long slope with a drop as small as 1 foot in 5 if possible, into the trap at the front. A total drop of at least 6 inches into the front of the trap is usually necessary to keep the sand confined in the area intended. If possible, the backs of the traps, or the sides away from the play, should be plainly visible. A steeper grade on these sides will help to make them noticeable, but often this effect will have to be gained by constructing slight mounds on these sides. The back of the trap and side away from the fairway or green should be graded not steeper than 1 foot in 2 feet, and less if possible. It must, of course, be borne in mind that there should be no area in the trap in which a ball might settle and from which it would be impossible to make a proper back-swing with the club. The sand should be splashed up against the back end and off-side grades of the trap so as to show up the trap at a distance. The mounds used in trap work should be planned to conform to the natural topography. Even though the grade into certain sides of the trap may be comparatively steep, the mound work may be made to conform to the landscape by dragging the backs of the mounds well away from the trap. Grades may vary due to the architecture of the trap; but for the sake of economy in maintenance, as well as for the appearance, the slopes from the backs of the mounds should be long enough to be cut with mechanical equipment.

A tile line should be placed in traps with poor drainage so as to carry off surplus water quickly. It is not necessary to run the tile line into the trap for more than one-third the length of the trap, since in such a comparatively small area the water will readily seep to the lowest point. Tile under sand is liable to shift and become choked or broken, and it should therefore be well protected. When tile is placed at depths of more than one foot beneath the sand, a fill of coarse stone topped with finer stone, gravel, or cinders and finished up to the grade of the bottom of the trap with 2 to 4 inches of inverted tough sod, will be found to be good construction. When there is not sufficient elevation to lay the tile one foot or more deep, greater care will be needed in the construction. In such cases the tile should be set firmly in the trench by packing field stones or similar material around the tile. The trench should then be filled with small stones or gravel to occupy cavities between the larger stones. The fill of these small stones or gravel should leave room for at least 3 inches of hard coal ashes or fine cinders. This fine layer should extend to within 1 or 2 inches below the top of the trench, while the remaining space will be taken care of with the sand in the trap.

In all cases when laying tile in sandy soil it is well to place a strip of heavy tar paper around the top half of each tile joint. This will help to keep the tiles from filling with sand before the packing has settled and the natural water channels are established. The drop in tile lines in traps should be not less than 1 inch in 5 feet.

## AS WE FIND THEM

Found one green committee figuring on how to keep turf on tees slightly over 100 square feet in area. Greens were all close to 10,000 square feet. Couldn't cut down size of greens, for members would kick. All wanted sod on tees but could not afford to build them larger.

It must be admitted some members take as many as five or six strokes on each putting green, but even the best of them take at least one stroke on every tee. Why are courses built with such uneven distribution of expense on greens and tees?

Saw a line of tile being laid from a low pocket. Men were told to lay it 18 inches deep, and when they came to the ridge which cut off the surface water they still kept placing the tile exactly 18 inches below the surface.

Water will not run up over a hill through a drain tile any more easily than it runs uphill any other way. Later some green committee member will explain, "The trouble can't be poor drainage, for we already have a tile line through here."

On a construction job a battery of heavy tractors were watched slipping around across wet clay soil where some day a green approach would be located. After the soil became more thoroughly puddled and baked than are most country roads, there would probably be a thin layer of topsoil spread on to level off the rough spots before planting. In a few months players will begin to ask, "What is the trouble with the turf on those approaches?"

Discovered a new theory for aerating greens. A tile system is to be laid under the green and from this a long pipe is to be run up a nearby hillside and thence up a tree to give a chimney effect and create a draught under the green.

Some one has suggested that this pipe instead of running up the tree be connected to the 19th hole. Then when members start "blowing" about some of their shots they can be requested to direct their air currents down that pipe to help the great cause of aerating that suffering green.

A few years after the course was built it was decided to extend the water system to water some special landing areas and approaches. Decided to tap into the old water mains. By the time those mains were discovered the course looked like a badly shelled battlefield.

Some day, in addition to men and machines, there may be a little "foresight" used in constructing golf courses. If such a day ever comes there will be diagrams of water and tile systems placed on record. Then it will be easily possible to reach either without digging up the whole course.

They were clearing land for a golf course. "Oh, no, we haven't decided on the layout as yet. We first want to get things going and clear the place up a bit while we are making up our minds as to the arrangement of the course."

Some people are always "making haste slowly." How many magnificent trees and beautiful natural settings for holes are sacrificed to satisfy the demands of that early impatience of club members to "get things moving and cleaned up."

Some of the most beautiful golf holes are made attractive largely by their setting of trees. Architects may design and builders may construct beautiful holes—"but only God can make a tree."