

in the spring. To correct iron chlorosis, we apply 2 ozs. of ferrous sulphate to each 1,000 ft. in 5 gals. of water. Greens quickly respond and regain color in a few hours.

We mow most of the year at  $\frac{1}{4}$  in. except during June, July and Aug. Then we raise the mowers to  $\frac{5}{16}$  in. We mow on Mon., Wed., Fri., and Sat. except during the winter when we mow as needed or as weather permits.

#### Disease Control

We start our preventative spray program around May 1 and stop around Sept. 15. We spray each week with 3-ozs. Thiram plus 1-oz. phenyl mercury for the first six weeks. Phenyl mercury helps keep crabgrass out of greens. For the balance of the summer we mix 1-oz. mercury chlorohide with 3-ozs. of Thiram. When we run into hot, humid weather, we spray twice weekly. The worst disease we have had has been pythium on our three poorly drained greens.

#### Weed Control

By adding 1 oz. of phenyl mercury to our regular fungicide sprays, we keep crab out of greens. As for crowfoot, we are still experimenting in our nursery. We have to remove crowfoot with a knife. Poa annua is plentiful around the course. It hasn't gotten into our greens.

Soil sterilization probably accounts for the absence of poa. However, last year we started applying arsenate of lead to be safe.

#### Insect Control

We have to fight mostly grubs, sod weh worms and cut worms and have depended on chlordane for control.

We aerify in early spring and late fall. We gather up plugs and use them to expand or repair the nursery. We use the verticut only in early spring when bent is growing well. This is to thin it out before going into the hot summer months. We have a mechanical spiker and plan to use this tool often in the summer.

At first, we had the problem of keeping Bermuda from creeping into greens. Three years ago we purchased an edger. As soon as Bermuda starts in the spring, we run the edger around the greens. This makes a cut  $1\frac{1}{2}$  ins. deep and  $\frac{1}{8}$  in. wide. Bermuda will creep across the cut but by running the edger around the greens every week, we cut off its tips before the node has a chance to make soil contact. We sweep the cut tips off the green.

## Troubled With Wilt? Check Pumping System

By **DON LIKES**

Supt., Hyde Park CC, Cincinnati

Last summer I was having trouble with wilt again. Charlie Wilson of Milwaukee Sewerage flew in from Arizona and came out to the course. He told me about these high day time 118 deg. temperatures in Arizona. He said that when you put your hand down on the Seaside bent there the

turf was cool, and it looked good, too. Our temperature was about 90 but the greens were hot. Apparently there was some kind of a cooling system that was working in Arizona that wasn't working in Cincinnati.

Charlie said he thought that our wilt problem was due to the grass getting too hot and not because it had insufficient moisture. He added (and this puzzled me) that the pump was not working. Wilson said the blades were full of water but that it was evaporating. That was why it wilted.

### 80 Degrees in a Hurry

I didn't grasp what he meant. After he left, I got one of my books out and read about the effects of warm temperatures on bent. I was surprised to learn that a grass plant in the hot sun will absorb enough radiant heat to raise its leaf temperature 80 degs. every two minutes. But normally, a healthy grass plant has a cooling system that dissipates most of that heat. It is like your automobile. The roots are the water pump. They pump water into the blades. It is converted to water vapor which is pushed out through the pores in the blade. This gives a tremendous cooling effect. But if the pump isn't working, the whole cooling system runs down and the plant gets too hot. Then you have wilt on your hands.

For years everyone has been showering off greens in the afternoon to cool them. But that is getting harder and harder to do because everyone has so much play that you just can't get on that green.

I think it is time we had some kind of an automatic showering device, or some kind of chemical to spray on greens in the morning to keep them cool during those hot, miserable afternoons.

## How to Speed Up Play on Public Courses

By **GARRETT RENN**

Supt., Juniata Public GC, Philadelphia

Courses that are getting the heaviest play today are ones similar in length and construction to the course that James Braid, over 50 years ago, planned in theory and set down in type, hole by hole, the yardage he thought desirable. It measured 6,240 yds.

Length (Yds.)	Description
1 360	Fairly long; not too difficult. To get the players away quickly.

2	390	Slightly more difficult than No. 1. Two good shots.
3	380	Should be difficult and green well guarded.
4	190	Full shot for a good player. May be increased to 210 or 220 yds.
5	320	Iron play. Very difficult near green.
6	500	Test of wood clubs.
7	120	Test of delicacy, accuracy.
8	400	Two good two-shot holes to finish outward half. Length to turn, 3,080 yds.
9	420	
10	340	Within two shots. Difficult, with a trying second shot.
11	410	Two fine shots. Three needed to get on in case of slightest mistake.
12	130	Difficult mashie or iron.
13	370	Two good shots.
14	520	Long hole in. Counterpart of 6th. Difficult near green.
15	180	A severely testing one-shot hole.
16	390	Hard finish. Seconds to be difficult. Total length in - 3,160 yards.
17	420	
18	400	

### Faster Green Play

To handle large traffic there should be more usable cup space and easier maintenance of greens. To speed up play we need the opposite of Marion Luke's fast grass. Height of cut should be maintained at 4/16 or 5/16. Larger cup sizes for public courses should be considered. For weekend play, pins should be placed in center. Two hole cups on greens, with players alternating the pin, have speeded up play on Philadelphia public courses.

Traps are often placed to speed up play by preventing balls from going out of bounds, rolling down steep hills or into water hazards.

Hazards in moderation, if skillfully placed and visible, are worth extra maintenance as a factor in making golf an intriguing and fascinating game. If it is necessary on Par 3 holes to speed up play, sod traps but maintain the contours.

### Blend With Tees

Fairways should blend with tees, eliminating the rough between as this only penalizes poor players and slows up play. Where possible, to compensate for slicing, fairways should be built on a right diagonal from tees. Plenty of width should be given the fairways.

Roughs should be cut to a height so that the ball will be visible and easily found. Trees should be pruned and underbrush eliminated. Searching for lost balls should be kept to a minimum. Evergreen trees should be planted to eliminate the leaf problem.

Tees should be constructed to drain

slightly from right to left and from front to the back. Tees should be 5,000 to 10,000 sq. ft. in area and constructed to be maintained with gang units. We suggest that markers be placed at the back of the tee on Monday and moved progressively to front by Sunday.

### Other Speed-Up Measures

Public courses should be fenced in, spectators barred from course.

Fees on Saturdays, Sundays, holidays for 18-holes only.

Map of course should be printed on back of score card.

Beginners are to register with starter. They should be sent off in twosomes or threesomes, not foursomes.

Winter rules should be played all season.

Have direction flags for fairways and direction signs at each green for carts.

Thin flag poles, that will allow ball to enter cup without moving pin, should be used.

Practice putts are to be prohibited after holing out.

Have ranger with car and loud speaker.

Use retriever caddies at water holes.

## Work With Nature In Designing Course

By DAVID GILL

GC Architect, St. Charles, Ill.

Probably the best book ever written on course architecture is a little volume about one-half inch thick by H. S. Colt, and called; "Some Essays on Golf Course Architecture." If there is a bible on course architecture, then that is it. It takes about 40 minutes to read it.

Speaking of greens, this is what Colt said:

"They should be located on sites which providence intended mortals to put them on." He then adds: "I have noticed during recent years that mortals have taken very divergent views as to the intentions of providence in this matter."

Now, out of the 72 strokes on the 18-hole course, 36 are allotted to the green.

The tees, by number of strokes, take second, since you will have 18. They will be divided by the driver (14) and an iron or higher wood.

Fairways and rough account for all the remaining 18 strokes. This is the chance given for the use of each club remaining in the bag.

### Mechanical Components

That takes care of the architectural component parts.

We now come to the mechanical component parts: