Rhode Island Plans Course Maintenance Battle

Constructive discussions featuring Rhode Island greenkeepers and club officials meeting at the Pawtucket CC, June 2. The state golf association sponsored the gathering and with the greenkeepers and club officers put emphasis on preserving course conditions or renovating courses so postwar play would provide returning servicemen with the sort of golf to which they had been looking forward.

Robert S. Bell, asst. prof. of agronomy at R. I. State College, and acting head of the turf section, was chairman of the meeting. Prof. Bell said that the first point to be considered in the maintenance of a golf course is a plan of operation. The club president and the chairman of the green committee as well as the greenkeeper should know what the necessary operations may be, and the approximate cost of each. Then available money may be properly apportioned between the necessary projects. A reserve should always be at hand for emergencies such as an attack by chinch bugs. He gave copies of the operation sheet shown in accompanying cut to those present. Prof. Bell remarked:

"The maintenance of greens and fairways must begin, if it is to be successful, with a plan of operations. Like a plan for a great battle the details of operations must be worked out ahead of time, completely understood and agreed to not only by the general, but all the men who are responsible for the outcome of the undertaking. First a plan, then united action and co-operation.

"A golf course is in reality a battleground. There are those friendly rivalries between the players, of course, where each tries his best to beat the other fellows out of three dollars apiece.

"Another battle is going on, however, often unseen by those around and that is the battle of the greenkeeper against such foes as insects, plant disease, and unfavorable growing conditions. If he is successful, fine; if he is defeated, everyone in the club loses not only money invested but also the joy of playing on a beautiful course in the warm, fragrant air.

"In order to plan a campaign to develop the most beautiful golf course you have ever laid eyes on each officer must know his place and his duties. First we have the club president, the general. He has many things to worry about. The maintenance of the course is only one of them, so he appoints a field commander, the green chairman, to take active part in planning the defense of the turf against its natural enemies.

"The field commander or green chairman is more often a "Green" chairman and says, "Well, I don't know anything about this business of grass, I'll have to get myself a top sergeant who knows the business," so he goes out after a greenkeeper. Notice that he picks a top sergeant, not a buck private. The green chairman should know the work from the top down, the greenkeeper from the ground up. They pool their ideas and make their plan of operations. The chairman goes to the general with the plan and a request for support to maintain the course in the proper manner. This gives the president and that great body of civilians, the club members, a chance to understand what the plans are to maintain the course in this beautiful condition. If the need is great enough some of the civilians may put up their money as a guarantee for victory. Others may contribute worthwhile ideas or information. When the plan of operation has been agreed to by all and the general has pledged the support of the club, the field commander goes to the top sergeant and says, "Old boy, we are going to carry the battle through to a successful end. We are all behind you now, so get out in the front line and start shooting. If you need reinforcements just whistle."

"The old sarge can lead his men into battle following the general plan but using his own resources and cunning to develop the winning strategy.

"The field commander must study and try to understand the problems of turf management. The sergeant is already supposed to know the business, but should never forget that times change, new problems arise, new facts are discovered. He must be able to change, to progress and to keep abreast of the times. None should stubbornly close their minds and resist new ideas, but take them in to absorb the good from each and then cast out the refuse.

"I hope you'll pardon me if I seem to be preaching to you, but as I get around the state I find symptoms of incom-

SCHEDULE OF OPERATIONS FOR TURF MANAGEMENT

DESCRIPTION OF WORK			SCHEDULED TIME					
Operation	Kind	Amount	Apr.	May	June	July	Aug.	Sept.
Rolling	Water Ballast	Two Ways	X					
Fertilizing	10-6-4 or similar grade							
	For greens lb./1000 sq. ft		10	10	7	5	7	10
	For fairways lb./acre		450					450
Suggested formula:								
Ammonium sulfate		450 lb.						
Milorganite		800 "						
Sodium nitrate		250 "						
Superphosphate		400 "						
Muriate of potash		100 "						
Lime	limestone every two years 25 lb. to 1000 sq. ft. or 1000 lb./A							
Composting	compost 2-1-1							
	creeping bent 1/4 yd./1000 sq. ft.		X	X	X	X	X	X
	velvet bent 1/5 " " "		X		X			X
Fungicides	mercury or organic as directed				X	X	X	X
Wheel raking		two ways	X	X	X			
Mowing	1/4" on velvet bents		as needed					
	1/4" 3/8" on creeping bents		as needed					
Seeding		2 to 6 lb.	X	X			X	X
Stolons	1 bu. to 100 sq. ft. any time if water is available						X	X
Insecticides	webworm	1 1/2 lb. arsenate of lead			X		X	
	Jap. beetle	10 lb. arsenate of lead /1000 sq ft.						
	chinch bug	25 " nicotine dust /1000 " "			X		X	
	ants	cyanogas as needed						
Weeding			poa annua			crab grass		others
Spiking		two ways	when needed					

patibility between people charged with the operation and maintenance of golf courses. No home divided against itself can ever carry on a successful campaign. How you cure these maladjustments must be left to another doctor to decide. In some cases the ax may be the only recourse."

It was pointed out that golf courses are often built on abandoned land. If nothing is done to restore the fertility of the fairways the good turf grasses disappear while weeds become more numerous. Loss of fertility is a continuous natural process. It must be conteracted by the use of limestone and fertilizer. The plan of operations contained a formula for a complete 10-6-4 fertilizer which has shown good results on the experimental plots in the state. If this material could be used on the fairways, and even on the rough, for a few years, the fertility level of the soil would gradually raise. Advice was given to build up the fertility whenever funds and fertilizer are available. Then in the lean years the turf will be able to draw on these reserve plant nutrients stored in the soil.

Prof. Bell reminded the meeting that on the putting green this fertilizer may

be used every month, or during the summer months, perhaps only a nitrogen fertilizer will do the job. If the compost used is high in nitrogen this will supplement the fertilizer so that one or more fertilizations may be omitted. The judgment of the greenkeeper must be used here in deciding just what the green needs. It is just as easy to destroy a green with too much water, fertilizer, and compost, as to harm it by neglect.

He reported a method of destroying weed seed in compost which was worked out by Dr. J. A. DeFrance. This method consists in mixing some source of nitrogen with the compost several months prior to its use. Any of the following materials used at the rates listed below should kill the weed seeds in a cubic yard of compost: Milorganite at 85 lb. per cu. yd.; agrinite at 65 lb.; cyanamid at 15 lb.; or ammonium sulfate at 25 lb. Dr. DeFrance did not test urea. Bell feels, however, that urea used at the same rate as cyanamid would be effective. Be sure the compost is moist enough to allow a thorough reaction between the fertilizer and the weed seed.

The average mixed bent putting green should be composted during April, June and September. If creeping bent predominates an additional composting may be necessary.

Harry Keil, asst, plant pathologist, R. I. State college, handled the topic of disease of turf grasses and their prevention. Keil feels that Thiosan, properly applied as a spray every 10 days during the disease season, should control turf diseases. Some greenkeepers in Rhode Island have not obtained satisfactory control with Thiosan and prefer to use Calo-Clor or other mercury compounds. Keil pointed out that many new organic fungicides were being developed at the experiment station and that some of these would probably turn out to be better than any fungicide used at the present time.

"Further discussion disclosed the fact that continued use of large quantities of fungicides and insecticides which contain poisonous materials such as mercury, lead, and arsenate may eventually cause poisoning of the grass. If satisfactory organic materials toxins can be produced they will be preferable since they will decompose and leave no harmful residues.

Cedric Jennings, entomologist from the State Department of Agriculture, said that arsenate of lead spray used at rate of 1½ pounds in 10 gallons of water to 1000 sq. ft. would control sod webworms and cutworms. The moths of the webworm fly over the greens dropping eggs indiscriminately. The worm is easiest to kill when young, so when the moths start flying around apply the arsenate of lead to the grass foliage, two applications a week apart will protect grass while eggs are hatching. Experiments are under way to find other insecticides which will effectively control sod webworms.

Jennings expressed the opinion that those courses which are infested with Japanese beetle grubs should apply arsenate of lead at the rate of ten pounds to 1,000 square feet. It is too late to prevent the emergence of this year's crop of beetles but if properly spread and watered it should prevent beetle grub injury for the following five or ten years. The milky white disease method is a slower method since the disease has to be spread from grub to grub.

The chinch bug sucks the juices from grass, causing it to turn brown. The chinch bug is a small insect very hard to see. To discover it take some water having a temperature of 100 degrees F., pour on an area and cover with a newspaper. The chinch bugs will crawl out, if present. Chinch bugs are becoming commoner in Rhode Island. Every course should be prepared to purchase some tobacco dust to use on chinch bug areas. Jennings recommends 25 lb. of tobacco dust to 1,000 sq. ft. of area.

Many questions were asked by the guests and experiences were exchanged. Oscar Chapman, R. I. Greenkeepers Assn. president, and Charles Allen, foreman of the State college and station turf operations, presided at the question and answer session. The meeting seemed highly successful from the point of view of the men from State College since it served to renew contacts with the problems of the state's golf courses. Dr. B. E. Gilbert, vice director of the experiment station and acting head of the agronomy dept. of R. I. State college, emphasized the fact that the services of the State College were free to the people of the state. Soil testing, diagnoses of plant diseases, identification of insect pests, and if needed personal visits from a specialist are available upon request to the Dean or department head. Dr. Gilbert invited the R. I. Golf Assn. and the greenkeepers to come to Kingston, probably in September to meet Mrs. F. F. Davis from the USGA and look over the experimental plots at Kingston and at Point Judith.

GOLF FOR RAF—An appeal has been issued for old golf balls for the use of the Royal Air Force. Golf is officially encouraged in the service, the eyesight of pilots being sharpened by concentration on short-range objects. Constant focusing on distant horizons tends to develop long sight with many pilots, and golf has proved a good corrective.—Golf Monthly, Edinburgh.