

physics; soil types and plant growth; modern turf management; soil micro-organisms and plant nutrition; soil adaptation of turf grasses; renovating poor turf; seed testing and seeds of turf plants; turf-infesting insects and their control; turf diseases and their control; composting materials and composting. Among the lecturers were such well known turf specialists as Dr. J. G. Lipman, Howard B. Sprague, H. R. Cox, A. W. Blair, J. S. Joffe, R. L. Starkey, E. E. Evaul and Clyde C. Hamilton.

Pennsylvania Research Work Led by Valentine

By A. KREBS

TWENTY-THREE years ago, Joseph Valentine went to work at the Merion Cricket Club, Haverford, Penna., just as one of the many golf-course workers. Today he is an authority on grass and has been largely responsible for establishing a greenkeepers' short course in the school of agriculture at Pennsylvania State College.

Valentine heads a committee of five prominent greenkeepers organized to outline the studies in the course. Among the subjects suggested for study are grasses for fairways and tees, prevention of grass diseases, soil acidity, etc.

The curriculum proposed to the State College by the Greenkeepers' committee in charge appears in the following statement:

"The undersigned committee, appointed to represent the Pennsylvania greenkeepers, wish to establish research work at the Pennsylvania State College on the following problems:

"Grasses suitable for putting greens and immune from diseases [in bent grasses].

"Grasses for fairways and tees.

"Prevention of grass diseases.

"How much acidity should be in the soil.

"Best fertilizers for putting greens.

"Best fertilizers for fairways and seeds.

"Control of crab and goose grass.

"Control of snow mold and winter kill.



Joseph Valentine

"Control of weeds.

"Extension work on lime, and control of white clover, especially in putting greens.

"Extension work on sulphate of ammonia and top-dressing putting greens.

"Control of weeds in compost.

"Extension work on corrosive sublimate and arsenate of lead to determine if those chemicals will weaken the bacteria of the soil."

The committee, in addition to Valentine included R. B. Rutherford, Penn State Golf club; A. M. Dunsmore, Chetremont Country club; John Quail, Highland Country club, and James Bolton, Berkshire Country club.

Golf courses in the state of Pennsylvania, according to Valentine, represent an estimated value of more than \$200,000,000, while the average investment for each course is approximately \$500,000. The valuation of the Merion Golf club alone is estimated at more than \$2,000,000.

At present Valentine is experimenting with the control of fungi that attack grass. He is expending considerable effort on the study of pythium.

Equipment Display Shows Member's Course Job

MEDINAH Country club (Chicago district) where Ralph Johnson is superintendent, is staging its first display of all its maintenance equipment during the first week in April. Medinah has approximately \$50,000 worth of equipment employed in caring for its three 18-hole courses and the grounds, and Johnson is putting on this display to impress his members with the amount of machinery and work necessary to keep their course in tip-top shape.

The display will be open for inspection during one of the Saturday night parties at the club so the members can gaze upon it and see where some of their money is spent to good cause.

IT IS false economy to instal water pipe of small dimensions. It is the operating cost through the seasons and not the original price that matters. Since the time required to water a green adequately depends on two factors, pressure and dimension of the outlet and hose, be sure to buy your pipe and hose big and your engines powerful and the saving in labor alone in one season will make up the difference in original investment.