

# of Science and Practice Maintenance Methods

1931 season saving of hundreds of thousands of dollars in golf course budgets. These school sessions are proving a big factor in ironing out a number of conflicting opinions in the fields of turf culture and maintenance methods, and by facilitating the exchange and appraisal of information between studious green-

keepers, in assisting in the identification and elimination of unsound practices.

In almost every case the short courses were attended so well that the matter of restricting attendance is one of the problems confronting those who will conduct the schools next winter.

## Fine Varied Program Given at Penn State

**E**IGHTY-FOUR men interested in fertility problems of fine turf grass management gathered at the Pennsylvania State college for the third annual Greenkeepers' conference February 25 to 27. More than 60 clubs were represented. Last year there were 55 representatives of 42 clubs in attendance at the conference.

The conference opened February 25 with an address of welcome by Dean R. L. Watts, of the School of Agriculture. Joseph Valentine, of the Merion Cricket Club, then gave the report of the Pennsylvania Fine Turf Research committee. This was followed by a progress report on research projects at State college, presented by Professors C. O. Cromer, J. W. White, and H. B. Musser, of the department of agronomy.

Relation of soil types to management was the topic Thursday morning. Professor A. L. Patrick, of the department of agronomy, chairman of the conference, talked on soil types. He discussed the outstanding physical and chemical characteristics of the important soil groups in the state. Professor F. G. Merkle, of the department of agronomy, told of the importance, functions, sources and maintenance of organic matter. He was followed by Wendell P. Miller, Chicago, who discussed drainage and irrigation. Professor Merkle and County Agent C. K. Hallowell, Philadelphia, next told of the nature, cause, effect, and extent of soil acidity.

(Continued on page 127.)

## Massachusetts Conference Has Attendance of 200

**A**T THE closing session of the M. A. C. conference, Francis Ouimet, former national open and amateur golf champion, characterized the low handicapped golfer as temperamental as a prima donna. "Unless the golfer gets away to a good start, his whole round for the morning is spoiled," says Ouimet, "and he has to blame somebody or something and generally picks on the condition of the green."

Approximately 200 golf course managers, greenkeepers, and golf enthusiasts were registered for the conference which was prepared by members of the winter school for greenkeepers at the college. All members of the school, with the exception of five students from the two-year course of the college, were greenkeepers or golf course managers. Connecticut, Illinois, New York, Minnesota, and Iowa are states outside of Massachusetts which were represented in the school. When the school started five years ago it was the first one of its kind in the country and due to lack of laboratory facilities and other factors it is necessary to limit enrollment.

## Exhibits and Speakers at M. A. C.

Numerous exhibits in regard to golf maintenance and golf course machinery were prepared by members of the class. The speaking program included "Testing of Seeds and the State Seed Law" by F. A. McLaughlin of the control service at the

(Continued on page 124.)

of landscape design, showed moving pictures which demonstrated a practical method of tiling around trees for subirrigation purposes. The moving picture machine also came into play for illustrating how various diseases appear when they affect turf, and for showing views of experimental plots where work in growing different kinds of grasses was being done.

Discussion and laboratory periods were as practical as both students and faculty members could make them. The discussion periods were rich in worthwhile experiences which the greenkeepers themselves related. The laboratory periods, held each afternoon, gave the men opportunity to study drainage and soil problems, to see the latest and best in mowers, and to examine grass and weed seeds.

## Fine Varied Program Given at Penn State

(Continued from page 29.)

Featuring the program Thursday afternoon was the effect of soil fertilization on the development of grasses, weeds, and fungus diseases. Professor H. W. Popp, of the department of botany, presented the nutritional requirements of plants. He pointed out the important life processes of plants, including the intake of nutrients and the manufacture of compounds.

Professors Patrick and White discussed the nature and value of fertilizer materials.

### Green Section Experts Help

Friday morning the conference continued the discussion of the effect of soil fertilization on the development of grasses, weeds, and fungus diseases. John Montieth, Jr., Greens Section, U. S. G. A., presented the relation of soil treatment to fungus diseases. Professors White and Patrick gave the results of experimental work dealing with the development of turf grasses and the control of weeds. Professor White then summarized the fertilizer recommendations for fine turf grasses.

Starting February 2 and running until the conference opened was the annual greenkeepers' short course. Nineteen men attended this and also stayed for the conference. They were Allison, Beck, Cruikshank, Derr, Dygert, the two Erbs, Evans, Frable, Grosjean, Henriksen, Hornby, Lenikus, Ludwig, Rye, Snyder, Swan, Wolford, and Wrye.

Soils and fertilizers, fine turf grasses, weeds, insects, diseases, landscape prob-

# FERTILIZERS

## for Golf Courses

BONE MEAL  
SULPHATE OF AMMONIA  
SUPERPHOSPHATE  
MOWRAH MEAL  
MURIATE OF POTASH  
SHEEP MANURE  
NITRATE OF SODA

In addition to supplying the above basic materials, we are in a position to advise and supply mixtures for various conditions, or furnish mixtures made up to your specifications.

**NEW JERSEY  
FERTILIZER COMPANY**  
FERTILIZERS & CHEMICALS  
375 Tonnelle Ave.  
JERSEY CITY, N. J.

## One Sure Way to Cut Maintenance Costs

Use CALO-CLOR for brown-patch control. It will save 67% to 75% and keep your greens free from this pest.

*Full Information  
on Request*

## MALLINCKRODT CHEMICAL WORKS

2nd & Mallinckrodt Streets,  
St. Louis, Missouri

## Introduced last July "Come-Putts"

are already becoming standard equipment among golf clubs everywhere.

The country over, and in Europe, Hawaii, and the Philippines as well.

They fill a long-felt need for which nothing adequate has ever been offered before.

"Come-Putts" white special water-proofed composition rings of standard diameter, outline upper part of hole on golf green and make it plainly visible as much as forty feet away. Dress up greens, support turf around holes, make new holes needed less often. Non-resilient—"bounce-proof"—remove the "accidental hazard" of a misshapen or broken-down hole.

Golfers who have played courses that are "Come-Putts" equipped cannot help making comparisons if your course lacks this finishing touch.

May be renewed two or three times weekly at less than a cent a hole per day—and oh, how they do improve the game!

Sanctioned by R. & A. and U.S.G.A.

Write for further particulars, or better yet, order to-day.

**CHILTON CROCKER CO.**  
Park Sq. Bldg. Boston

PRICES  
Per 1000  
1000-2000  
\$27.50  
2000  
and over  
\$25.00  
Trial lot of  
500  
\$15.00  
f.o.b. Boston

lems, machinery, drainage, and irrigation were studied and applications made to fine turf management.

Discussion and laboratory studies covered the origin, formation, and physical properties of soils, soil acidity, and the purchase, mixing, and use of fertilizers and lime.

### Feature Lab Work

Class room and laboratory work was done on classification, identification, and propagation of the important fine turf grasses, including seed identification and analysis.

The characteristics, life habits, and control means of the various weeds common to golf courses were studied, and weed seeds were identified.

A brief study of the insects affecting fine turf grasses was made with reference to their control.

Considering the nature of diseases and their effect on plants, the principles of prevention and control were applied to turf grasses.

Landscape problems included factors determining the location and layout of golf courses, and study of golf course plans, grading, trees and shrubs for golf courses and club house grounds, identification, special uses, planting, and maintenance.

A detailed study was made of gasoline engines, their operation, repair, care, and adjustment. The location, design, and construction of tile drain systems were covered. Power requirements, design, and operation of spray irrigation systems, pipe friction, pipe sizes, and pumps were studied.

Members of the faculty of the Penn State school of agriculture took care of the instructional duties.



Pat. Pend.

## "SOD-KUT"

### a hand-power sod-cutter

Produces sod of absolutely uniform thickness and square even edges, insuring solid, tight butting, with consequent quick knitting and firm, smooth relays. Cuts a strip 13½ in. wide, any length, any depth. No horses or tractors. Two men easily cut 15,000 feet of sod a day. Weighs less than 100 lbs. and uses no weights. Can be rolled about for removing pearl-wort with absolutely no injury to greens. Meets the exacting requirements of greenskeepers for a simple, trouble-proof, convenient and ACCURATE tool. Write for full information.

Pacific Greenskeepers' Appliance Co.  
28 North Ninth St., Portland, Oregon

## Two Essentials for Better Turf

Cocoos Creeping Bent Seed  
Lecco, the Complete Grass Food

Information upon request

**THE LYMAN CARRIER CO.**  
Granger, Indiana