



fessional is too wise and too busy to undertake the risky and numerous and complex problems of greenkeeping. His teaching and merchandising give him enough problems. He knows that the better the condition of the course, the more play there'll be and the greater his income but he's got worries enough with people. He doesn't want to add worries with grass to his troubles.

### **Greenkeeper Worries**

The greenkeeper has to worry about people and grass. Players come ahead of grass as far as the greenkeeper is concerned. Nature takes a different view. The greenkeeper is caught in a crossfire.

By national and sectional educational conferences, short courses at state agricultural schools, the United States Golf Association's Green Section and other research he has learned so much about solving the problems of grass he's created another and tougher problem with people. Now players on a public course expect a higher standard of turf condition than the finest, wealthiest and luckiest private club had 20 years ago.

A great many of the problems the golf business will have to meet in the future can only be solved by greenkeeping superintendents learning more about people and money — and very soon.

On the people problem, the superintendent must be aware of a conflicting situation that exists in golf today. At most of the metropolitan district private clubs the average age of members is well over 50 years. There are waiting lists and high initiation fees and dues. Desirable young businessmen couldn't afford to join. Saturdays and Sundays the public and semi-public courses that haven't been subdivided are jammed like a beach on D-day.

### **School Golf Growing**

Golf in high schools and colleges is growing faster than the capacity of courses to absorb these recruits who'll begin playing on their own money before many more years have passed. It isn't generally realized but there are more than 60 golf courses owned and operated by American colleges and universities. Junior golf promotion at clubs, as many greenkeeping superintendents have commented, is one of the greatest jobs the professionals are doing today.

George Lake of Long Beach, where an outstanding job of public course junior golf education has been done, heads a

PGA committee to further develop the junior program and coordinate pro work with promotion of the USGA junior championship, the Western junior championship, the Women's Western junior event, the Junior Chamber of Commerce national boys' championship, the National Caddy Association championship, the Hearst newspapers' national junior championship and other newspaper and golf organization sectional junior events.

These activities and the Western Golf association Evans caddie scholarships are of vital and foresighted importance to golf. The caddie carts, in addition to creating a new problem for greenkeepers in green to tee routes, have reduced the demand for caddies. But they've also made golf cheaper. Junior promotion is needed to bring into the game youngsters who formerly came in only because they got paid for being exposed to the lure of golf.

Yet, despite junior promotion that this spring probably will be reaching between a million and a million and a half boys and girls I have heard of only two cases of a greenkeeping superintendent talking to groups of these youngsters and telling them about the problems and objectives of course maintenance and what cooperation properly could be expected of the educated golfer.

### **Contact Junior Groups**

Unless the greenkeepers make effective contact with this junior field soon the future of the golf business for the greenkeeping superintendent won't brighten as it should — and must — to attract a quality of new material up to the class of the present generation.

Greenkeepers have been at the foundation of the present low-scoring tournament play in golf. The greenkeepers' program of education has paid off, but for the clubs and tournament players. The thoughtful leading professionals have seen the results of the greenkeeping superintendents' educational program. They are beginning to establish this sort of schooling for their own department of the golf business. It has been said that if pro golf had gone at its teaching problem the same way the greenkeepers have gone at their turf maintenance problems the average scoring of the American golfer would be many strokes less than the present average in the 90s.

The progress greenkeepers have spurred and assisted in extending mechanization of

*(Continued on page 92)*

"Well I guess George gets the money"



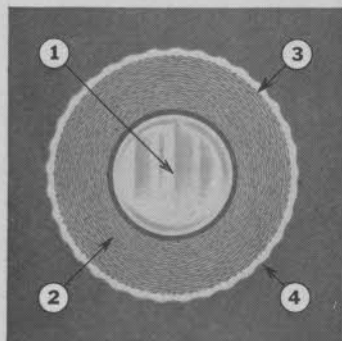
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## PUBLIC HAILS CHICAGO

(Continued from page 64)

Are the Schools successful? Ask any one of the four thousand golfers in and around Chicago who have been exposed to them and the answer will be the same — yes. Can they last? Ask the people who keep writ-

ing or calling into the Chicago Park District administration building *all year round* — wanting to know when the next Free Golf Schools will start! Can Walsh stand the pace? Right now he wishes he were a platoon in number so that he could take care of all the people who clamor to get into the schools every year!

### TRACTOR MAINTENANCE TIME CHART

The following maintenance points apply to most types of golf course automotive equipment. Details omitted are not to be overlooked. The periods suggested for checking and servicing are based on average golf course equipment under normal operation. Blank spaces are provided for filling in additional points.

#### DAILY

... or every 10 hours —

CHECK — Service if necessary

\*Crankcase oil level

Crankcase breather cap

Radiator water level

Air Cleaners (tractors)

Fuel supply

\*\*Pressure fittings, grease cups, and oiling

\* \* \*

#### WEEKLY

60 hours or every 1,100 miles

CHECK — Service if necessary

Tire Pressure

Battery

\*Transmission level

\*Differential level

\*Final drive level

\*Steering gear level

Air cleaners

Fuel strainer of filter

Fuel sediment bowl

\* \* \*

#### MONTHLY

250 hours or every 5,000 miles

CHECK — Service if necessary

Crankcase ventilator

Oil filter

Distributor — points

Spark plugs

Fan belt

Water pump packing

Hydraulic brake fluid level

Tire condition

\* \* \*

#### SEMI-ANNUALLY

Seasonal or every 15,000 miles

*WHICHEVER OCCURS FIRST SERVICE*

Engine support bolts (tighten)

Body bolts (tighten)

Valve adjustment

Generator (clean)

Starter (clean)

Wheel bearings (packed type)

Brake linings and drums

Cooling system (flush)

#### ANNUALLY

OVERHAUL — By a competent mechanic — Engine, Oil Pan, Fuel System, Power Transmission Line, Steering and Brake Connections, Hydraulic Systems, Springs and Shock Absorbers.

\* \* \*

#### MAINTENANCE REMINDERS

In addition to the checking and servicing done at regular intervals, the operator of golf course machinery should be constantly on the watch for any unusual conditions as listed below:

Leaks — oil, fuel, water

Improper action of brakes

Steering gear play

Unusual engine noises

Frayed wiring

Improper clutch action

Loose nuts and connections

Poor starter action

Drop in charge rate (ammeter)

Drop in oil pressure (oil gauge)

High engine temperature

(temp. gauge)

Defective lights and horn

Poor windshield wiper action

Broken springs

Loose fuel tank supports

Defective governor

\* \* \*

\*Crankcase, transmissions, differential, final drive and other gear cases should be drained and refilled at periods recommended in manufacturer's instructions. The conditions under which golf course machinery is operated determine the period of time a lubricant should be used.

\*\*Follow manufacturer's recommendations for servicing lubrication points.

—Socony Vacuum Oil Co., Inc.

P A T E N T E D

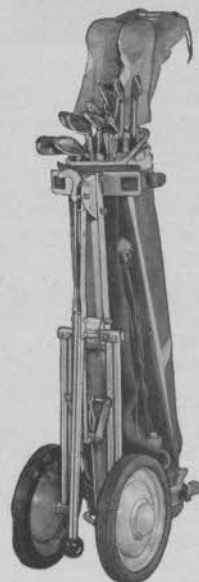
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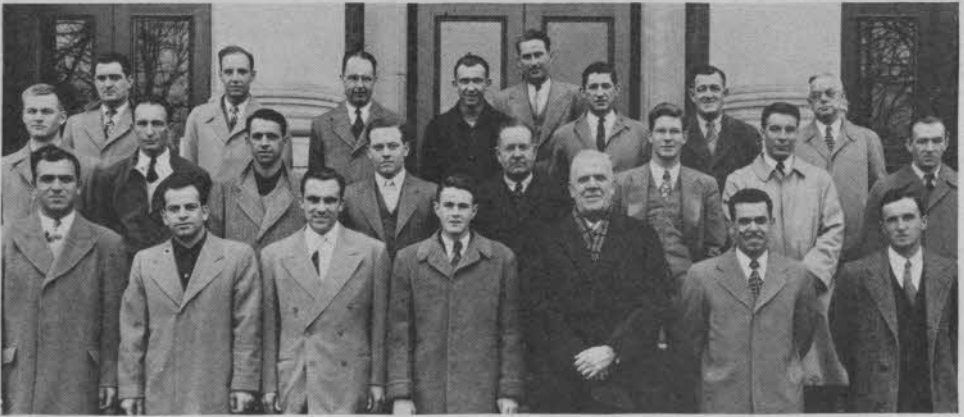
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These men complete course offered by the Univ. of Mass. in its 19th Annual ten weeks Winter School for Greenkeepers. (L to R) Back row: D. Marrone, Wachusett CC; L. Peck, Battle Creek CC; Prof. Geoffrey Cornish; C. Hamilton, Concord CC; Joe Gerlak, Windham CC; Prof. Zak; Alvin Moore, St. Johnsbury CC; Prof. Dickinson. Middle row: E. Wohlfeill, Green Acres GC; M. Pannozzo, Farmington CC; L. Dziedzic, Pequabuck CC; S. Clapper, The Clapper Co.; C. Sowerby, Marlboro CC; D. P. Denison, Roanoke CC; L. St. Pierre, Tatnuck CC; J. Paul, Indian Hill CC. Front row: G. Tedesco, Wayland CC; D. Ajemian, Hiawatha GC; R. Hess, Brookside CC; J. Davis, Riverside GC; Director Verbeck; J. Donadio, Mohawk Valley CC; A. Mallucci, Silver Springs CC.

## 250 Attend Univ. of Mass. Annual Turf Conference

By Geoffrey Cornish

Dr. Ralph Van Meter, Pres. of the Univ. of Mass., welcomed 250 turf growers to the Annual Turf Conference held at the Univ., March 10-11-12, 1949.

The Conference was held in conjunction with the final exercises of the 19th Annual ten weeks Winter School for Greenkeepers. Those attending came from New England, New York, New Jersey, Delaware, Virginia, Michigan, Wisconsin, and Pennsylvania.

The program was arranged by the Section of Agrostology of the Department of Agronomy cooperating with the Mass. Section of the New England Turf Association under the general chairmanship of Prof. Lawrence S. Dickinson and G. Cornish of the Section of Agrostology, assisted by Phil Cassidy, Pres. of the Greenkeepers Club of New England, E. V. Pyle of the Hartford Park Dept. and Homer C. Darling, Pres. of the New England Turf Assn.

Director R. H. Verbeck of the Stockbridge School of Agri. presented certificates to members of the Winter School who had successfully completed the ten weeks Winter School.

Papers presented at the Conference are outlined hereunder in the order that they appeared on the program.

### Taking Notes at Conventions

Despite modern recorders and excellent presentations of lectures in golfing maga-

zines, there is still a vital necessity for retaining the art of note-taking. Robert S. Hopkins, Dean of Men, Univ. of Mass., first gave some instructions concerning proper note-taking. He then presented a short lecture on the history and organization of the Univ. of Mass. requesting that listeners take notes in accordance with his previous instructions. Following his short lecture, he gave out the solution in the form of printed sheets to show the ideal set of notes for the lecture, asking that each person in the audience compare it with his own. Many found they profited considerably by this exercise in note-taking.

### Plant Water Relations

Dr. T. T. Kozlowski, Dept. of Botany, Univ. of Mass., stated that more plants died prematurely from lack of water than from any other cause. He discussed the role of water in the growth of turf grasses, explaining the use of water and its method of entry, translocation and loss by transpiration from the plant, the magnitude of root growth of grasses, and the actual amount of water lost by different plant communities by transpiration. Dr. Kozlowski showed slides of the anatomy of roots, stem and leaves of grasses. Microscopic sections of leaves were shown to illustrate internal structure and the stomatal apparatus. He dealt with the dynamics of transpiration, guttation, secretion and bleeding. The factors relating to midday watering were dealt with and the possibility of having sun scald from free water

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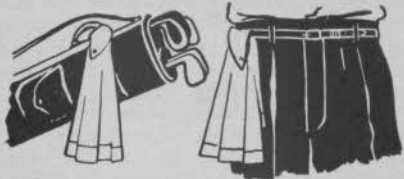


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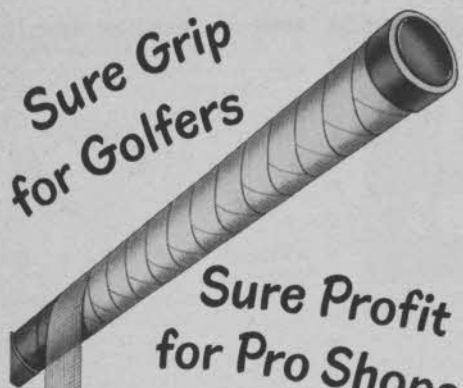
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on the surface and in the soil were discussed. In regard to sun scald, Dr. Kozlowski considered that the high concentration of carbon dioxide arising from free water resulted in decreased absorption of water, and since transpiration rates are still high, the grass may suffer from desiccation of the tops. Tip burns due to guttation and the consequent concentration of salts on leaves were mentioned. The mechanics of water absorption were discussed and the beneficial effect of good soil aeration was emphasized.

### Insect Control in Turf

Dr. J. C. Schread, Conn. Agri. Experiment Station, described the magnitude of the insect world. He then stated that a great many insects caused damage of one sort or another. He discussed the inroads that the Japanese Beetle Grub has made in turf and stated that the Japanese Beetle was now known in 24 states. Each year the summer rainfall has a profound influence on the grub population. Dr. Schread gave rates for the use of insecticides on turf and showed a number of illustrative slides.

### Maintenance of Turf Traffic Areas

Professor Dickinson stated that turf traffic areas are found on all types of lawns including cemetery, park and golf course turf. There are two traffic areas in turf growing. The pre-seeding and post seeding. He described how traffic areas arise and stated that more attention to certain fundamental principles in construction and maintenance would prevent much of this trouble. He then gave recommendations for dealing with this condition.

### Turf Experiments at Univ. of Mass.

The Univ. of Mass., pioneer in turf culture, provides the most comprehensive turf education program of any university.

The Massachusetts Section of the New England Turf Association working closely with the Section of Agrostology and the Experiment Station has made it possible to resume turf research on this campus.

In 1948, a practice putting green was built on the campus for experimental work and in 1949, a number of other turf areas are to be constructed. Research projects started in 1948 include a study of different fungicides for snow mold prevention, work on *Zoysia's japonica*, the control of clover by nitrogen and the use of spent hops as an organic amendment. Other projects planned to start in 1949 include a study of fertilizer requirements of grass by analysis of the leaves, effect of too frequent aeration, a study of the height of cut, the frequency of mowing, applications of phosphorus to turf, and the use of lime to counteract snow mold. It is intended also to make studies of various lawn seed mixtures on the market in Massachusetts



and of different mowing equipment.

Cornish recognized a number of men outside the University including Homer Darling, Orville Clapper, Arthur Anderson, John Counsell, Elliot Rogers, and William and Henry Mitchell who had been very active in formation of the Turf Association and re-establishment of turf research at the University of Massachusetts.

#### Soil Physics in Relation to Plant Growth

Dr. Fred Grau, Director, U.S.G.A. Green Section, explained principles of soil physics showing their effects on turf. He discussed formation of soil granules by cementing of particles with organic matter. Dr. Grau emphasized water conservation as being an absolutely necessary philosophy and he stated that often 80% of water applied to turf is wasted. Gravitational water in soil decreased absorption and brings about dessication of the tops. Also, when intercellular space of plants becomes flooded, fungus attacks become more severe. He spoke of the bad effects of compaction and thatch. Sometimes a sand or layer beneath the surface results in an interface which prevents root penetration.

Thatching stops root growth. Aeration is necessary to break up the thatch. Dr. Grau emphasized good aeration and good drainage for some distance into the soil to cut down compaction and to break up impervious layers. Dr. Grau showed slides of abused turf areas throughout the United States.

#### Facts About Velvet Bent

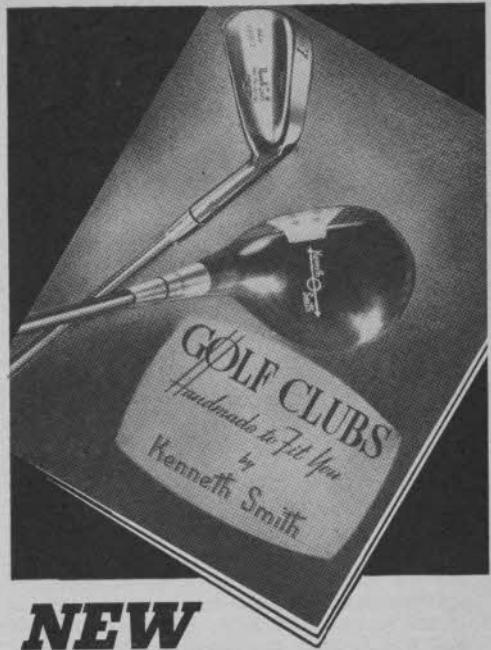
Dr. Jesse DeFrance, Rhode Island Agricultural Experiment Station, dealt at length with the characteristics and adaptation of velvet bent. He listed a number of prominent greenkeepers who grow it, and stated that it was indeed a grass worthy of consideration.

#### Factors Influencing Availability of Phosphorus

Dr. Dale Sieling, Head, Agronomy Dept., Univ. of Mass., explained how phosphorus applied to soil may be fixed before it can be utilized by plants. He stated that compounds of iron and aluminum are responsible for this fixation. Phosphorus fixation has been the subject of considerable research at the University. An understanding of the mechanism by which phosphate is fixed by iron and aluminum will facilitate more efficient practices in handling it. Dr. Sieling stated that it has been found that certain organic substances will prevent fixation and also liberate the phosphorus that has been fixed.

#### Maintenance Problems Here and There

Dr. O. J. Noer, Agronomist, Milwaukee Sewerage Commission, showed a set of interesting slides illustrating use and abuse of turf throughout the United States and Canada. He discussed the chlorotic condi-



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tion of velvet bent and recommended the use of ferrous sulfate to counteract it. He showed pictures of snow mold in greens and the effect of faulty construction. One picture showed Washington Bent tees at the Milwaukee Country Club.

### Turf the Golfer Wants

Francis Ouimet, Captain of the Walker Cup Team and former U. S. Open and U. S. Amateur champion, described turf the golfer wants. Mr. Ouimet spoke of ideal conditions for growing turf in Great Britain and described a number of courses in that country on which he had played. Mr. Ouimet listed heights of cut the U.S. G.A. expects for fairways and greens. He contrasted lies obtained on watered and non-watered fairways. He described the difference in turf today and that of 30 years ago.

### Today's Player Specifications for Golfing and Factors That Must Be Understood to Meet Them

Professor Dickinson listed the actual and cultural costs that are to be expected in conversion of a course to meet another set of player specifications. He stated that it was a fact that the player conception of golf has changed greatly during the past two years.

These recent severe player demands on course condition make it imperative that

club members and in particular club officials, course superintendents and professionals, should understand the cultural and financial costs and change in necessary maintenance policies before major expenditures become necessary.

### New England PGA Tees Off on Season

New England PGA held its annual spring meeting and equipment demonstration at Hotel Statler, Boston, April 13, in conjunction with Massachusetts's GA session.

Pros thronged exhibition hall. Tom Mahan said actual sales reported for the day were \$50,000, not a record figure but considered good because of earlier ordering due to season getting under way unusually soon and boys being back on their jobs early.

Dinner was attended by more than 460. Horton Smith made a constructive address and Byron Nelson put on a very well received demonstration and instruction clinic.

Particular attention was paid by pros to study of increase of sales volume by featuring style element in shoes and apparel. White, green and cherry red Good-year lug sole golf shoes with correspondingly colored tops were shown in men and women's numbers as a new style item.

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