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This NEWSLETTER is published monthly by the Greenkeepers Club of New England, and sent free to its members and their Greens' Chairmen. Subscription price ten cents a copy, or a dollar a year.

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April, 1935

Vol. 7, No. 4

### I WONDER

### by Charles W. Parker

At the recent Recreation Conference at the State College during discussion of future policies for the Golf Section the tying in of the Greenkeeper with the managership of the entire club seems to have cropped up more frequently than ever before. It was stated and generally accepted that the "trend of the times" is toward a General Manager and that it behooves all interested in future success in the field of Greenkeeping to follow this "trend of the times" closely with the idea of fitting oneself for the jump to a managerial position.

I suppose every ambitious Green-keeper has toyed with the idea of becoming a Club Manager, and after listening to the kind and sincere words of a few practical minded golf officials regarding the qualifications of the successful Greenkeeper as possible manager material the individual is hardly to be blamed for feeling that such a position is a definite step forward and a worthwhile goal to strive for. I wonder.

At the often maligned "bull fests" in Hamp., interesting and surprisingly informative argument was held on this subject by Greenkeepers, salesmen and manufacturers representatives. Again the Greenkeeper accumulated, in the form of horrible examples, many reasons why he is qualified to return to his club more efficient administration and to bring to himself increased material returns as a manager. Again I wonder. Why do I wonder? Consider!

The title Manager brings to the mind of the uninitiated, above all things, the idea of a business administration for the club adopting this policy. The

fundamental idea of bringing together all the loosely related departments under one head who alone shall be responsible to the governing body for efficient, economical and satisfactory operation of the entire club. The manager's finger must be on the pulse of every depart-ment during the dormant as well as the active season. He must keep his ear to the ground to catch member reaction to club policies and to hear the first whisperings indicative of breakdown of membership morale. His eyes must be focused sharply on income and outgo with particular attention to outgo. That briefly covers the salient points of the picture brought to mind when the manager, as indicated by the "trend of the times" is up for discussion.

What are the actualities? Quite different.

There is no full time Country Club in New England where the Manager functions, completely and fully, as such. This will be questioned, I know, but a search will demonstrate that in every case there will be at least one department where the manager's functions are that of, at best, a "Yes man". Obviously then the elevation (?) to the position of manager does not automatically carry with it all the joys and honors of "monarch of all he surveys."

To continue: The minute an individual steps over the clubhouse threshold as manager two-thirds of his effectiveness as administrator of all other departments is lost. Lost? Rather, wiped out by the demands of his stewardship and the exactions of personal service. Inconceivable demands are made upon him to adjust real or fancied disservice. Unbelievable favors are expected of him, within and without the club. And since human nature remains constant and typical these demands will continue to be made and the manager will continue to devote a large amount of his time to them. Is he to be blamed or censured? Hardly! One of the quickest and surest "outs" for a manager is for him to preserve an impartial and impersonal attitude in his direct contacts with his members.

The Achilles tendon of every club manager is his dining room profit, and his success in promoting and presenting social functions. If outside functions are barred his troubles will be from the membership only but if, to promote additional revenue, external social functions are welcome God gifted indeed is the man who can attract outside groups to the club, meet their re-

quirements, show a satisfactory profit for the club and not interfere with the real or fancied rights of the members.

Dining room profit, or the lack of it, is the downfall of many excellent stewards and house managers. It is indeed the vulnerable spot which can never be adequately protected. Many and devious are the office accounting practices resorted to, sanctioned often by a lax or friendly governing body, to make the figures show a profit. Bar profits, external social revenue, slicing from the Greens Fees from organization business, and Entertainment Committee profits are but a few of the ways of recruiting reserves to bolster up the weak black ink on the dining room profit or loss sheet. All this is of no avail. eventually opposition develops. Critical scrutiny of the manager's methods comes to the fore and, if for no other reasons, lack of satisfactory dining room profit can always be used as the excuse for ousting the hapless manager.

A discussion of dining room management is not within my province; I am content to rest on the opinion of a qualified, successful manager of large city clubs. He has stated quite fully with supporting facts and figures that a real net profit from a club dining room is practically impossible of production.

For the sake of emphasis let me repeat. The minute a man steps inside the club house door as manager twothirds of his effectiveness to the rest of the departments which go to make up the club as a whole is lost. The demands made upon him for personal service, the pressure exerted on him to produce a profit where profit is an impractibility, plus the many extraordinary services expected, varying in amount and exactness with the individual club definitely set up the above statement as an axiom.

We may decorate the arguments of why a Greenkeeper shall aim toward a managerial position as much as we like, a little of the decoration will be fact, most of it will be fancy but the underlying reason for all this argument and agitation is simply this, money! Why does the man in the house receive, by and large, a greater salary than the Greenkeeper? Again, a discussion pro and con of equivalent pay, inside and out, does not belong here but a discussion of why the house man does receive a larger salary than the Greenkeeper is certainly most relevant.

Fundamentally the man in the house is rendering direct and personal service. Human nature rules that personal service is always higher paid than indirect and impersonal service. Your laborer on the golf course is returning the member thru skillful care of the links quite as much service as the waitress who serves his meals or the locker man who shines the shoes but does the member appreciate this? No! The greensmans service is indirect, it is impersonal and human nature seldom recognizes service which does not contact it individually. Any successful house mana-ger knows this. He knows that it is part of his stock in trade. "Fine personality" is often the expression used in describing a house manager. This personality value is appreciated and exploited to the Nth. degree by every worthwhile house manager. Who will say he is wrong or servile. Materially he gains by it and the manager of one of New England's largest hotels is authority for, "It never does any harm to say, "Sir" to a man." The Green-keeper can never hope to attain this close personal contact with his membership nor am I sure that the end results will be gratifying if he does make a sincere effort to do so. Here and there a Greenkeeper exists who because of individual aptitude for showmanship impresses himself on the majority of the membership. Investigation will prove that this man's pay is the equal of or greater than any other employee of that particular club. More power to him. But as long as type of work stamps its individuality on the person pursuing it so long will the Greenkeeper be a poor self advertiser. Nature is a humbling mistress.

No one will wish greater success than I to any Greenkeeper who steps into a managerial position. No one will advise greater caution and a careful study of the proposition from all angles than will I to any Greenkeeper contemplating such a step. No one can be more conservative than I in advising or suggesting the expenditure of time, energy or money in propogating the idea that the trend of the times" indicates that the Greenkeeper must fit himself for a managers job.

To those who dismiss me as a defeatist, an ultra-conservative or a Johnny-afraid-of-the-dark I will say; Examples are never axioms. Exceptions serve but to prove the rule; and I must ask them to consider the following very, very carefully, what is the percentage of house managers of their knowledge who have weathered more than five successive years of employment at any one club?

### SERVICE SECTION DINNER

The third annual dinner meeting of the Service Section Committee of the M. G. A. was held on April 5th at the Charles River Country Club, with 118 club officials and greenkeepers present. This meeting was in charge of Mr. C. Adrian Sawyer, Chairman of the Service Section Committee. The speakers included President West of the Greenkeepers Club, President Mason of the M. G. A., James McCormack of the Unicorn Country Club, President Rogers of the Brae Burn C. C., President Greene of the Charles River C. C., Secretary Charles Gilman of the Wollaston G. C., Francis Ouimet, Green Chairman Pierce of the Duxbury Club, and Linde Fowler of the Boston Transcript.

The general theme of the program was the further use of the golf club to make it an all-year round club, with varied activities. President Mason stressed the "community club" idea and President Rogers the "family club",— "the club will not be successful unless built around the family atmosphere". Francis Ouimet gave a very interesting talk on the caddie situation, in connection with caddie booklets recently issued by the M. G. A.

The talk of our own Jim McCormack follows:

"The officers and members of the Greenkeepers Club of New England consider it an honor and a privilege to again join with the Service Section of the Massachusetts Golf Association in a meeting of this kind. We believe that these meetings are responsible, partly at least, for the fine co-operation which Greenkeepers are receiving from their Greens Committee Chairmen and other Club Officials, as well as a better understanding of course maintenance among golfers of our district.

During the past few years many changes have been made in the methods of greenkeeping in an effort to produce fine golf turf. Various educational campaigns have enabled the Greenkeeper to keep abreast of the times, by gaining knowledge of the intricate phases of golf course maintenance and construction. New grasses have been developed which are more suitable for golf turf and better adapted to our soil conditions. New fertilizer programs have been established and a more economical and effective control of diseases and insects has been promoted.

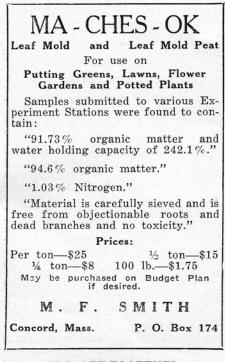
The successful greenkeeper of today has made a study of construction phases of golf course work and can take care of any alteration of the course in a manner that satisfies the golfer and at the same time simplifies maintenance problems. He must be a golfer so that he may understand what makes a hole fair for the average golfer or for the expert. He must understand soils, drainage and irrigation, so as to produce the most satisfactory turf on tees, fairways, and greens. Several years ago practically all purchases for the golf course were made through some one other than the greenkeeper. To-day, the chairman of the Greens Committee expects his greenkeeper to be qualified to make purchases of any supplies to be used on the golf course.

Ten years ago we had putting greens of mixed grasses cut at a height of about % of an inch with a wheel-type lawn mower. Today, we have through the demand of the golfer, greens of one strain of grass cut ¼ inch in height and some times less with an eight-bladed roller type high-speed mower. This gives us greens of an even texture and color with a good body of grass which makes an ideal putting surface.

Tees are now a much more important part of the golf course than formerly and they receive considerable more attention than was the case a few years ago. The golfer expects a level tee unmarred by divot holes and giving a firm stance so that he may have an opportunity of getting the best results from his tee shot. Tees have been increased in areas so that this condition may be maintained.

Fairways have been changed from ordinary pastures to areas of fine turf which gives a good lie wherever the ball may come to rest. Fairway watering is now considered almost a necessity, so great has been the demand for better conditions.

These improvements have been brought about through the co-operation of various agencies. The Green Section NEWSLETTER



### **PRO GET-TOGETHER**

The second annual dinner of the New England Section of the P. G. A. was held at the Hotel Somerset, Boston, on April 15th. Manufacturers had fine displays of the season's merchandise. Speakers following the dinner included Pres. Louis Myers of the N. E. Section, Pres. Mason of the M. G. A., Arthur Sampson of the Boston Herald, Treas. Mackie of the P. G. A., Treas. Hurley of Massachusetts representing Governor Curley, Pres. West of the Greenkeepers Club of New England, and Pres. Jacobus of the P. G. A., who confered a life membership in the New England Section upon the toastmaster of the evening, Philip A. Hendrick.

Reports from Prof. L. S. Dickinson upon the registration figures at the Recreation Conference last month show that the total registration was 909, about a fifth of the estimated attendance. Golf led the various sections with Community Recreation second and Sportsmen third. Greenkeepers were second to teachers in occupations reported.

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### GOLF TRACTORS

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Carloads were used on New England golf courses during the 1933 and 1934 seasons. The results have been most satisfactory.

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A special booklet on the use of Florida Humus for golf courses will be mailed on request.



**85 STATE STREET, BOSTON** 

of the United States Golf Association has furnished a tremendous amount of information through research work at its Arlington Gardens. The Massachusetts Golf Association through its Service Section Committee has rendered the Clubs and Greenkeepers in this district a great deal of service by its active interest in maintenance problems and its experimental work established here at Charles River has been the source of much information on local problems.

The Greenkeepers Club of New England through its educational meetings held monthly for the past eleven years has done a great deal to raise the standard of greenkeeping. Its winter meetings have given its members an opportunity to hear the foremost authorities on the different phases of producing fine turf. Its summer meetings have been held on different golf courses throughout New England giving an opportunity to observe conditions on these courses, inspect equipment, and discuss seasonal problems.

Seedmen and manufacturers of golf course equipment have kept pace by providing cleaner seed of better quality and improved machinery which does finer work at a saving of labor costs.

Not all of the recommendations made by scientists and research workers have been found satisfactory when tried under actual playing conditions and many of them have been later contradicted. It is therefore, important that any new theory offered should be carefully tested before being put into general use.

We have not progressed beyond the point in golf course maintenance where further advancement is not necessary, but with the continued co-operation of these agencies, golfers may be assured of progress for better playing conditions.

An article in the Cleveland Press of March 22nd points out that watered fairways are real factors today in keeping Cleveland's golf courses from becoming strangled in the red ink. Where there was only one course with watered fairways three years ago, there are now eleven. These ten courses have spent nearly \$150,000 in hope of getting new members.

### SPEED IN GOLF COURSE

### MAINTENANCE

### by Ronald Sturtevant

(presented at Recreation Conference)

We are now living in what is termed by some, an era of speed.

Golf being an up and coming sport must embrace its share of this speed, to be in style.

A comparatively few years ago, speed was an unknown factor in the golf world. It first edged into golf in relation to putting surfaces. The greens weren't fast enough, so the mower manufacturers obligingly replaced the old, side wheel, low frequency mower with the roller type, high frequency mowers that are now in use. The resulting putting surface with its so called speed is one of the greatest steps forward that folf maintenance has ever made.

But we are now in an era in which the battle cry is speed and more speed (but a speed that is entirely different from that mentioned before). This speed is supposed to create great savings to golf clubs. There is no doubt but what in some cases, mowing can be speeded up a little—but only a little. There is a tendency today toward excessive speeds. My first example is the modern fairway mowers and their main selling points.

We are told that 10 to 12 miles per hour is a good mowing speed. The mowers will stand it—so we are told. Fairway mower construction has not changed basicly since the Pilgrims landed. Just put on a device to hold the mowers against the ground and "step on the gas". They will stand it—so we are told.

One popular fairway unit when traveling at the rate of 10 m. p. h. turns, at the wheel, 1630 r. p. m. Another 3007, another 3312. But why worry—aren't we told that they will stand it? Maybe. Let us leave that to the mower men. There is no need to go by what we are told.

You are all turf men and understand turf, so let us consider this mile a minute mowing from the standpoint of turf.

This turf is made up of individual grass plants. You have all examined grass plants. They have no armor plate or other elaborate protection, have they? No! They ae comparatively small delicate bits of *life* struggling

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The value of SOIL-CO has been proven beyond question by many laboratory tests and by practical application.

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are only valuable in exact proportion to the results obtained from their use.

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> Woodco Lawn Food feeds grasses.

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for an existence under adverse conditions. *imposed upon them by you*.

Now-keeping these grass plants in mind, consider a tractor and 5 to 7 mowers galloping (that's what mowers do at high speeds) up and down your fairways. Don't you pity the innocent grass plant? Why is all of this speed necessary? We used to mow with horses and the grass didn't get ahead of us. Grass is a child of nature and hasn't heard of this great thing SPEED. It just grows normally, taking its time like all works of nature.

We have a more acute situation in our putting greens. Let us consider them. They are in good physical and mechanical condition due to the good cultural practices in which intelligent mowing has taken a large part.

But again we hear the battle cry-SPEED. Why take 20 to 30 minutes to mow a green that the "CHAIN LIGHTNING" mower will do in 5 or 6 minutes at the most. Sad but true. The outfit will cover a green in that time—but does it mow it? If by mowing you mean remove the excess grass, then it does. But, if by mowing, you mean cutting the grass and leaving the green in as good condition as you found it, then the answer is NO! Not when excessive speeds are entailed.

Why is all of this speed necessary? Saved labor hours is the only answer I have ever heard to that. What are we to do with all these saved hours? Oh, lay off a man. No, we are going to put them back into our greens overcoming the cultural losses sustained by our greens through the "mile a minute mowing". Oh! there aren't any cultural losses, so we are told. The mowers are built to stand it.

Just picture a power mower going at the recommended "mile a minute" pace over your greens 3, 4, 5, 6, 7, times a week. But why worry—the man who built the mowers says it is all right. The error of this type of mowing can be easily and quickly impregnated in your mind.

Just try a simple experiment—now don't use the grass as the goat this time. That is done too often now. You are the one who is committing the error, so pick on yourself. Go to the barber and tell him to give you a haircut and cut his mowing time to ¼ or 1/5 of his regular time. You won't sit in the chair long. You'll go home and turn a deaf ear to mile a minute mowing. You'll become a champion of the cause of the grass plant. Somebody will say—Oh! the time saved will offset the cultural losses and setbacks suffered by the grass plants. But even if it did (which it doesn't) are we maintaining a golf course to save time? I can think of easier and better ways of saving time than maintaining a golf course. We maintain golf courses to supply a foundation and a background for recreation and relaxation. In order to do this properly we must avoid setbacks of the grass.

Now—if it is necessary to save time in your maintenance program due to decreased budgets, etc., why not do it with at least a moderate degree of intelligence?

First-forget this cry of speed. Then-if it is possible or practical, to save time, why not start with yourself? Are you on the job? If so where are your wasted motions and unproductive time? You are the highest paid man on the golf course and the savings are proportionally greater where you are involved. Do your present methods tend toward a maximum of efficiency, or are they obsolete and unpractical in a small way? Can't you, instead of mowing 4 or 5 times as fast just step up your mowing a little and do away with one or more mowings a week? There you have a definite saving with no possible setbacks to the grass. In fact in some cases a few less mowings per season would benefit the greens.

I think you will find quite a few scattered labor hours that can be captured and put to work as a definite saving. If you will just analyze yourself and your job, you will create an honest saving with no discomfort to yourself, the players, the men or the grass plants.

This paper does not in any way try to discredit modern mowing equipment. It merely tries to bring out that excessive speeds when applied to mowing create a false asset. The limits of tolerance of your product (the golf course) cannot embrace this fellow SPEED.

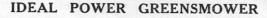
Buy your modern equipment. You can create savings with it by using intelligence and not speed. When you buy a new car you don't try to go a hundred miles per hour because the speedometer registers it, do you?

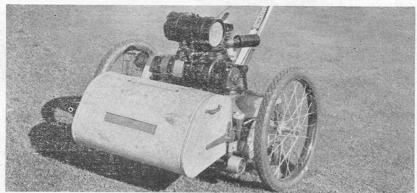
Build a fence around your golf course and lock out this fellow SPEED. Or, if your budget won't allow a fence, just erect a cage and keep him corralled for use in grass fires, etc. And depend upon good, sound, steady practices, always remembering the forgotten man

THE GRASS PLANT.

### NEWSLETTER

9





# GUARANTEED TO EQUAL OR SURPASS THE FINEST HAND CUTTING . . . .

This mower is built to greenkeepers' specifications. It has overcome every objection that greenkeepers have had to using power on the green. It not only saves labor, but it also gives you a job of cutting that will equal or surpass any lawn mower manufactured, whether it be hand or power.

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### SPRING CARE OF ESTABLISHED LAWNS

### Howard B. Sprague, Agronomist

N. J. Agri. Ex. Sta.

Early spring treatment of lawns is essential for developing healthy vigorous turf. The established lawn should receive an application of fertilizer at the first signs of growth in spring, to increase the vigor of the sod before competition with summer weeds be-comes a critical factor. A complete commercial fertilizer, analyzing approximately 5 per cent nitrogen, 10 per cent phosphoric acid, and 5 per cent potash, spread at the rate of 10 to 20 pounds per 1,000 square feet of surface, will be adequate on the majority of lawns. On turf that has been liberally fertilized in recent years, the use of 5 to 10 pounds of an 8-6-5 fertlizer, or its equivalent, for each 1,000 square feet, is preferable. Fertilizer materials should be uniformly distributed over the surface, at a time when the grass blades are dry, to avoid possible burning

If lime has not been applied recently, the lawn soil may be too acid for successful turf production. In general, strongly acid soils prevent the healthy growth of lawn grasses, particularly Kentucky bluegrass. The quantity of lime required will depend on the present acidity of the soil. An application of 50 to 75 pounds of hydrated lime, per 1,000 square feet, or one and onehalf times as much finely ground limestone, repeated every three years, will prevent the development of excessive acidity. For soils that are naturally strongly acid, larger amounts will be necessary.

The judicious use of lime and fertilizer may not be sufficient to restore certain portions of the lawn to full vigor. On very thin or bare spots, the soil should be spaded, and lime and fertilizer applied at substantially heavier rates than for the rest of the lawn surface. Where the soil is low in organic matter, 1 to 2 pounds of well rotted manure, cultivated peat, or a suitable substitute, might well be added for each square foot of surface. For convenience, lime, fertilizer and organic matter may be incorporated simultaneously to a depth of approximately 4 inches. The area should then be smoothed, and planted with a lawn seed mixture composed of suitable turf grasses.

Early planting is highly essential for achieving success on reseeded lawns. Wherever practicable, periodic watering of the new seeding with a fine mist-like spray, should be resorted to in dry weather, to prevent possible drought injury. After etablishment of the young seedlings, mowing becomes of considerable significance. The adoption of a comparatively long height of cut will avoid serious injury and permit vigorous growth of the young turf.

### MAKING TEMPORARY LAWNS

### Howard B. Sprague, Agronomist

### N. J. Agri. Ex. Sta.

A luxuriant temporary green lawn may be produced within three weeks' time under a great variety of soil conditions. With proper care this turf will persist throughout the summer, until a permanent lawn may be established.

Spade the area to be seeded or loosen and pulverize the surface two inches of soil with a hoe in preparing the seed bed. Apply a complete commercial fertilizer carrying at least four percent of readily available nitrogen, at the rate of 10 pounds per 1,000 square feet of surface. The fertilizer must be uniformly distributed and thoroughly incorporated with the upper layer of soil before planting. Grade the area by raking. Seed perennial rye grass or domestic rye grass at the rate of five to eight pounds per 1,000 square feet, and cover by raking lightly. Keep the soil surface moderately moist until the grass is well established, and mow at a height of two inches during the first month of growth.

The lawn obtained by this method is a temporary one but it makes an excellent substitute for a permanent turf during the summer. Late spring and early summer months are unfavorable seasons for new seedings of permanent lawn grasses due to injury by heat, drought, and competition of weeds. The temporary grasses now seeded may be spaded or plowed under in August or early September and a permanent lawn established. At that time the addition of organic matter, lime, fertilizer and other materials for soil improve-



ment will aid in developing a thick sod of permanent grasses. Seed of desirable grasses is uselessly wasted when sown at a season of the year offering little chance of success.

Mike O'Grady reports that considerable work is being done at New Bedford, changing the fourth hole. The tee has been raised four and a half feet. The green has been rebuilt, raised three and a half feet in the front, with a forty feet entrance between two traps which have been enlarged. There is to be a grass hollow three-quarters around the rear of the green. Mike also tells us of the arrival on March 10th of Patrica Ann.

### **R. I. GREENKEEPERS FIELD DAY**

The Sixth Annual Greenkeepers' Field Day at the Rhode Island State College, Kingston, R. I., is scheduled for May 27th. These field days have always been exceptionally successful because the greenkeepers are so enthusiastic in their support.

It is hoped that greenkeepers will invite their greens committee chairman or other clubs officers to this meeting. Committeemen should appreciate more fully the rapid changes with which the greenkeepers must cope. They should also encourage their greenkeeper to participate in greenkeeper's clubs, courses of study and demonstrative meetings at least by payment for their time during attendance. All those who are interested in any phase of turf culture are cordially invited to this field day.

A special invitation is extended to seedsmen, fertilizer men, and equipment men to come prepared to exhibit and demonstrate during the day. Much of the popularity of the meeting has resulted from this feature.

The program will be essentially as follows:

10.30-11.00	Registration	n (Taft Lab-	
	oratory—Extion).	periment Sta-	
11.00-12.30	Inspection	of experi-	

	ments, 1 mile west.		
12.30-	Lunch—College	dining	

1.15- 2.30 Speaking program.

2.30-	3.00	Annual business meeting
		of the Rhode Island Green-
		keepers Club.

3.00- 5.00 Exhibits and demonstration.

This is an opportunity for an informal get-together for the exchange of ideas and a good time.

H. F. A. NORTH,

Asst. Res. Prof. Agron.

### FROM OUR NOTEBOOK

The soil is not only inorganic mineral matter and organic matter, but is teeming with life, microscopic plants, microorganisms. There are more bacteria in the top soil than in sub-soil; the more fertile the soil, the more bacteria. Bacteria decay organic matter; in so doing they carry on an important function in that they release carbon dioxide back into the atmosphere to be used again by plants. Conditions that are best for these micro-organisms, temperature 40-100, best at 83 degrees; moisture, 20-40%; air, 35% oxygen, (best we can offer is around 20%; food, organic matter.

### Prof. J. F. Haddock.

Get members turf problem conscious. Then the problem is that of introducing plant principles to local conditions. One of our headaches is often the aftermath of construction, often too hasty. Texture and drainage are poor on many Poor maintainence practices greens. also cause troubles. Tests can be made of soils; results found must be interpreted. Supply the dificiencies, then supply needed nitrogen. Turf is cut too closely now on fairways and greens. After grass is established, limestone is only form of lime to use. Never use more than 50 pounds per thousand square feet at one application. If mer-cury is to be used for a fungus, use the carrier that costs least per unit. Applications of arsenate of lead are not permanent. Do not use pure humus or peats as top dressing; this will cause layers. The field method of preparing top-dressing is good; as many as three green manure crops can be grown in one season. A turf nursery is desirable; have in the nursery the grass which is in the greens or what is desired in the future. A tubular fork has a good deal of merit for helping compact areas; for permanent relief strip and rebuild with right soil.

E. E. Evaul.

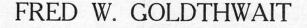
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### PUBLICATIONS ON TURF GRASSES

(A list prepared by Dr. V. T. Stoutemyer, Iowa State College)

### I.-Books on Turf Growing

Turf for Golf Courses. Piper and Oakley. (Macmillan).

Golf Course Common Sense. Farley. (Golfdom). Most up-to-date general book.

Lawns, Links and Sports Fields. MacDonald. (Charles Scribner). The Lawn. L. S. Dickinson. (Orange Judd Co., New York). Lawns. Rockwell. (Macmillan). Lawn Making. Barron. (Doubleday, Doran and Co.). Grass. A. J. Macself. (Cecil Palmer, London).

The Book of the Lawn. Beale. (Cassell and Co., London).

### II.—Free Publications by Commercial Firms

Golf Turf. Stumpp and Walter Co., 132-138 Church Street, New York. Sports Turf. Peter Henderson Co., 35 Cortland Street, New York. The Putting Green. O. M. Scott and Sons, Marvsville, Ohio.

### **III.—Free Government Publications**

New Jersey Agr. Exp. Sta. Bul. 496. Experiments with Turf Grasses in New Jersey. New Brunswick, N. J.
U. S. Department of Agriculture Bul. (Tech. Bul. 173). The Blue Grass

Webworm. Washington, D. C. Rhode Island Exp. Sta. Bul. 217. The persistence of certain lawn grasses as affected by fertilization and competition. Kingston, R. I. Rhode Island Agr. Exp. Sta. Bul. 212. An analytical study of the putting

greens of Rhode Island golf courses.

Bulletins or circulars on lawns are published by the following agricultural experiment stations: Florida, Georgia, Indiana (Purdue), Iowa, Ken-tucky, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, Ohio, South Carolina, West Virginia, New York (Cornell), Kansas.

### IV.-Books on Golf Architecture

The Links. Robert Hunter. (Golfdom).

Golf Architecture in America. Geo. Thomas, Jr. (The Los Angeles, Times Mirror).

The Architectural Side of Golf. Wethered and Simpson. Pitch and Putt Courses. Peter Henderson Co., New York.

The Golf Club Organizers Handbook. (Golfdom).

### V.-Magazines on Turf Culture

Golfdom. 14 East Jackson Blvd., Chicago, Ill. The Pacific Greenkeeper. 910 East Hermosa Drive, San Gabriel, California. Newsletter of the Greenkeepers Club of New England. 312 Mt. Pleasant Street, Fall River, Mass.

The Greenkeepers' Reporter. Wayzata, Minn.

The Journal of the Board of Greenkeeping Research, St. Ives Research Station, Bingley, Yorkshire, England.

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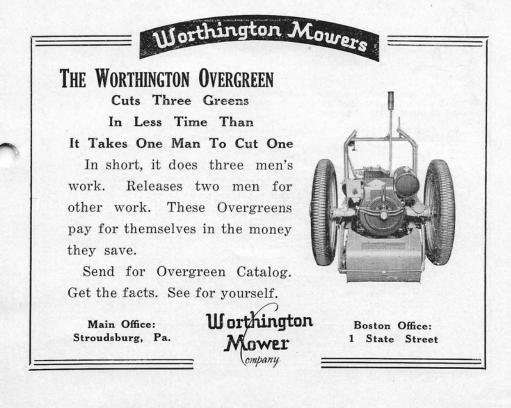
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