

Weeds and Other Lawn Pests

By PROFESSOR LAWRENCE S. DICKINSON

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TURF pests may be classed in one of three groups. (1) Herbaceous plants or better known as weeds and undesirable grasses. (2) Animal and insect pests, and (3) Fungus diseases. Of course, there are many other pests, such as the habitual divot taker on a golf course, a scratching dog on the front lawn, and the lazy and careless cross-cut taker who makes paths. These latter present local problems and need not be specifically prescribed against.

In turf culture there are four cardinal principles for pest control:

I. Neither animal nor plant pests will remain where food or environment is displeasing.

II. A thorough knowledge of the life history of a pest is necessary, that it may be attacked during its most vulnerable condition.

III. The visible appearance of one pest often indicates the presence of another.

IV. Well-fed and vigorous turf will successfully compete with foreign herbaceous growth, and is much less susceptible to attack by fungus diseases than weak and thin turf.

Too often herbaceous lawn pests have their origin coincident with the making of the lawn. It is therefore necessary that the first pest control measures should start at the time of building the lawn.

A well prepared seed bed helps to assure that the young grass plant will have a well developed root system and a strong leaf growth.

SELECT ONLY HIGH QUALITY SEEDS

THE selection of high quality seeds of varieties of grasses that are adapted to lawn conditions, especially to the individual lawn area, means the young



PROF. LAWRENCE S. DICKINSON
Massachusetts State College
who is recognized internationally as an expert on turf culture. We are greatly privileged to publish excerpts from his wonderful book.

grass plants are given a start in congenial surroundings.

The use of a complete fertilizer having a suitable nitrogen, phosphorus, potash ratio and causing a soil reaction that is favorable to the growth of the basic grass is very essential to pest control. It provides for the grass plant a health-giving diet and assures the continuance of an agreeable environment.

If the suggestions in the above paragraphs are followed, the result should be, a thick and vigorously growing lawn from the beginning. It is obvious that in thick turf there cannot be

room for weeds or undesirable grasses and it has been demonstrated many times that vigorously growing grass will crowd out weeds.

CORRECT LAWN SHOULD BE WEEDLESS

IN THEORY the correctly started and properly fed lawn should be weedless forever. However, in practice such a condition is seldom found. However, correct cultural practice does reduce the weed content of a lawn to an extremely low figure. Also, there are many lawns that have had a "bad start" and whose owners wish to "fix up." The problem with such lawns is not how to keep the weeds out, but how to get them out.

All herbaceous pests can be eliminated from a lawn by digging and pulling them out. But if the pest is present in a considerable quantity such methods are radical and often require a rebuilding of the entire lawn. Furthermore, they are unpractical and usually unnecessary.

It is far better to feed correctly and encourage the existing grass in a lawn and cause it to crowd out the pests than to spade it up and start anew.

For by continued correct fertilization and cultural methods the existing grass (a valuable asset) is becoming stronger and the soil fast becoming nearer to the idea condition. On the other hand rebuilding a partially worn lawn is only a temporary relief from herbaceous pests, and adds nothing to the future value of the soil.

What does the presence of herbaceous pests in a lawn indicate? A large number of weeds in a year-old lawn usually indicates that either the seed used was of poor quality, or of varieties not adapted to lawn conditions, or faulty construction of the lawn area, and too often all three conditions. Any one of these reasons is sufficiently strong to warrant the entire rebuilding of a lawn. The loss of time would be only one year and the cost would be quickly offset by the lower maintenance cost a good lawn has over a poor lawn. Also there would be the great satisfaction of having "done the job right."

WHAT CAUSES WEEDS IN AN OLD LAWN

THE appearance of weeds in a three-year-old lawn can mean but two things. Either the varieties of

grass selected are not adapted to close clipping or to the local conditions and are becoming thin, or the fertilizers used were of such nature that the weeds were being "better fed" than the grass.

It is usually unwise to rebuild such a lawn, but it is very obvious that if fertilization is at fault a change of diet is necessary. If the grasses cannot withstand the close clipping required on a lawn the area should be renovated and seeded with a grass that is known to be adapted to the local conditions.

The appearance of weeds in a ten-year-old lawn that has been practically free from weeds is an indication that the physical condition of the soil is becoming intolerable to the grass; or perhaps small bare spots or holes have been made by persons walking on the lawn and weeds have obtained a foothold in some of these spots. In a lawn of this type if the weeds are few in number they had best be pulled out, but if they have gained a considerable foothold other methods of control should be adopted.

Cleveland Greenkeepers Organize Buying Bureau

By R. T. ZINK, Secretary,

The Cleveland District Association of Greenkeepers



FRANK ERMER
President

*The Cleveland District
Association
of Greenkeepers*

THE Cleveland District Association of Greenkeepers held their regular meeting at the Elyria Country Club, July 10, 1933. There were about thirty-five greenkeepers present, including Colonel John Morley from Youngstown Country Club, also a number of Green committee chairmen.

After a detailed discussion of the situation the members of the Association voted the Directors a vote of thanks for the way they

have handled the Buying Bureau.

The best golf of the day was played by Frank Ermer, who had a 79 with one ball out of bounds. Ralph Rodgers can be complimented very highly on the splendid condition of his course.

A sprinkling demonstration was held showing various types of sprinklers in action. The following companies were represented: Skinner Irrigation Co., L. R. Nelson Mfg. Co., Chicago Flexible Shaft Co., and Chisholm-Ryder Co., Inc.

Our next meeting will be held at the Pine Ridge Country Club, August 7, and I'm sure you will find Jess Wilder a splendid host. A mower demonstration will be held, including a new 7-gang fairway outfit.

Trade News About Turf Culture

CHICAGO, ILL.

Plans for the creation of a 1,500 acre park on the flat lands along Lake Michigan, north of Waukegan, were announced at Springfield by C. F. Thompson, assistant director of conservation. The work would be carried out by men from the civilian conservation corps provided by the federal government.

* * *

HUNTINGTON, IND.

Negotiations by which a heavily wooded tract of land containing 27½ acres adjoining the Huntington college campus would be acquired for use as a city park are under way.

* * *

PETERSON, IOWA

A dream of years seems about to be realized for this community in the establishment of a state park in the scenic hills surrounding this town. The state board of conservation agreed to accept 235 acres of land offered to the state free of charge.

Ask Us What To Do

A page for the discussion of intimate problems on turf culture and plant growth. We are an international authority on these subjects. Send in your questions—your name will not be used.

FLOWER AND VEGETABLE GARDENS

My neighbors' flower and vegetable gardens are always prime, and mine invariably poor. I realize his soil is much better than mine. Is there any simple method of making the good garden be as?

It is more than likely you both have the same soils with which to work but his probably is in much better physical shape than yours. Sufficiently well rotted manure, worked deep and thoroughly into the soil, will make physical conditions good.

Your garden should then be divided into two parts. In one, grow plants from which you wish foliage such as lettuce or foliage for decorative purposes. This section must have feedings heavy in nitrogen and with comparatively small amounts of phosphorus and potash.

The balance of your garden you will wish to mature rapidly, producing bloom and fruits such as peas, beans or berries. Feedings for this section must be reversed, the nitrogen light and the phosphorus and potash comparatively heavy. With your soil in good physical condition from well-rotted manure (never fresh) or other good organic matter, thoroughly decayed, balanced fertilization will more than likely develop a better garden than your neighbor has. (Ohio)

* * *

GETTING RID OF MOSS

My turf on shaded parts of the lawn, has been poor and has been replaced largely by moss. Will applications of lime in the spring help to get rid of the sour soil? In the past, lime seems to have helped but little.

Lime will be of but little benefit in this case. It is doubtful if this particular soil is acid. If not under trees, it is more than likely that this portion of your lawn has been overwatered. Unless these shaded portions are supplied with tile drainage to carry away surplus water, sprinkle only when the soil, to a depth of three inches is known to require water.

Cut a plug to find if the soil is dry. If moisture is needed, water deep, once a week. If lime is necessary, put twenty-five pounds of hydrated lime in a barrel, direct a stream from the hose upon it and let it run until you have a barrel of lime water. Let it settle and apply this lime water to the lawn lavishly. If lime is needed, good results will be immediate. Use the same lime repeatedly. (New York)

* * *

PLANTS ARE UNDERNOURISHED

The bloom in my flower garden which ordinarily lasts for quite a while, fell off early this year. Can this condition be helped in any way?

Your plants were probably in an exposed place and may have had more than their share of heat from the sun. It is possible that they were undernourished not having a sufficiently heavy feeding and balance of phosphorus and potash to harden the plant for hot weather. Extreme heat is probably the real cause for their short life. (Ohio)

* * *

REMAKING A LAWN

The soil from which our lawn was made, came from the cellar excavation. It is hard and we find it impossible to grow any sort of turf upon it. Can it ever produce a lawn?

This is the source of soil for most of our lawns. If it is the average of such soils, the lawn should be torn up and entirely remade. Halfway measures will not be sufficient. If it is small enough to dig by hand, have it spaded to a depth of at least five inches, breaking up all clods as it is spaded. Cover this with at least two pounds of thoroughly rotted manure or fine commercial humus to each square foot, mixing carefully with the top five inches of the soil.

At the same time, one pound of superphosphate should be applied to each one hundred square feet. Rake carefully to original grade and seed with a mixture of blue grass, white clover and very little

CREEPING BENT TURF WITHSTANDS HEAT WAVE

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rye grass, early in September. Put one-half of the seed on at that time and the other half, apply later in the winter while the soil is more or less open from freezing, rolling lightly after each seeding when the soil is dry enough not to pack. This procedure should give you the start for a permanent lawn. Deep watering, after rootage is established, not more than twice a week, should assure your turf.

(Tennessee)

BONE MEAL AS A FERTILIZER

Should bone meal be used for fertilization of fairways and greens at time of construction and annually after construction is completed?

Bone meal is a calcium phosphate, practically the same, chemically and containing approximately the same percentage of phosphorus as phosphate rock. Phosphate rock, treated with an equal amount of sulphuric acid, produces superphosphate. It is of value for the phosphorus it contains. Before the phosphorus in bone meal can become available, carbonic acid in the soil air or the gases and acids from organic decay, must break bone meal down, much as sulphuric acid reduces the phosphate rock in making superphosphate. This will take years. Superphosphate in which the phosphoric acid is at once available is far superior to bone meal.

(Ohio)

Trade News About Turf Culture

SPENCER, IOWA

A state park for Clay county in the beautiful wooded lands along the Little Sioux River immediately south of the town of Peterson appeared assured this week as it was learned that the board of conservation, members of which inspected the site recently, had agreed to accept approximately 235 acres of land and convert it into a park for the use of the public.

* * *

NEW YORK CITY, N. Y.

Richard M. Lederer, president of the Standard National Corporation, building construction and mortgage bankers, has purchased a large estate in Westchester County. He has bought, through William J. Yates and the Dodds Associates, as brokers, the place at Pleasantville known as "Hardscrabble Farm."

The estate contains 140 acres of land and a seven-acre lake fronting 1,800 feet on Hardscrabble Road. It was sold by Fritz J. Frank, president of United Publishers, Inc.

* * *

ATHENS, GEORGIA

Construction of a modern airport in Athens and Clarke County will likely begin within the next few weeks, with the city council and county commissioners appearing favorable to the proposition.

* * *

ESCANABA, MICH.

Representatives of the parks division of the state department of conservation and the national parks service stopped off in Escanaba while on tour of the various state parks in the upper peninsula, where improvements are being made by the Civilian Conservation Corps.

They were: S. W. Olcott, Chicago, who is inspecting the various park improvement programs to determine whether these are eligible for federal aid; R. M. Schenck, Lansing, assistant superintendent of state parks; and R. B. Herrick, Lansing, member of the Emergency Conservation Work staff, who are laying out the programs of work.

ASTORIA, WASH.

The port of Astoria requested the county court for a deed to a large tract of land on Youngs bay, with provision that the port develop it as an airport.

* * *

SAINT LOUIS, MO.

The East St. Louis Park District has applied for Federal aid to assist in financing its \$1,030,000 improvement project at Lake Park, near East St. Louis.

* * *

COLUMBIA CITY, IND.

Word was received recently from sponsors of the Whitley-Noble County State Park, who are now in Indianapolis, that the proposed bond issue of \$70,000 should be advertised to finance the park.

* * *

DEARBORN, MICH.

At the regular meeting of the council the Dearborn Kiwanis club was authorized to proceed with the acquiring of as much land as possible, either through grants or exchange for other land for the proposed new Ford park, which is to extend from Brady street to Military avenue along the banks of the Rouge River.

In charge of the Kiwanis project is Harry Vicary and Jamie L. Johnson, both of whom have been working with city officials on the plan ever since its inception nearly a year ago.

* * *

AKRON, OHIO

First step toward getting city support and federal finances for a projected park in the Airport area west of the port service road and near Washington boulevard, has been taken by club women and members of city council.

A meeting was held late Wednesday in Mayor C. Nelson Sparks' office, where Mrs. W. W. Milar and Mrs. H. B. Diefenbach presented the idea.

Market Place *and* Buyers' Guide

Where reputable manufacturers and dealers list and describe their products. Greenkeepers are requested to write the Market Place for any special information they desire about supplies or equipment.

Names and Addresses of Leading Manufacturers and Dealers in the Turf Culture Field

Royal Products Company, 214-216 S. Charles St., Baltimore, Maryland.

J. Oliver Johnson, Inc., Morgan-Huron Superior Streets, Chicago, Illinois.

Worthington Mower Company, Stroudsburg, Pennsylvania.

Ideal Power Lawn Mower Company, Lansing, Michigan.

Toro Manufacturing Company, Minneapolis, Minnesota.

G. B. Lewis Company, Watertown, Wisconsin.

J. M. McCullough's Sons Company, 316 Walnut Street, Cincinnati, Ohio.

Seaside Bent Company, 115 Broad Street, New York City, New York.

Stumpp & Walter Company, 132-138 Church Street (at Warren St.), New York City, New York.

Peter Henderson & Company, 35 Cortlandt Street, New York City, New York.

O. M. Scott & Sons Company, Marysville, Ohio.

Ohio Humus Products Company, London, Ohio.

Illinois Grass Company, 75 E. Wacker Drive, Chicago, Illinois.

Lyman Carrier Products, Granger, Indiana.

J. G. Peppard Seed Company, Kansas City, Missouri.

American Cyanamid Sales Company, 535 Fifth Avenue, New York City, New York.

C. B. Dolge Company, Westport, Connecticut.

McClain Bros. Company, Canton, Ohio.

Arthur Boggs & Company, Willoughby, Ohio.

Mallinckrodt Chemical Works, 2nd and Mallinckrodt Streets, Saint Louis, Missouri.

Cleveland Charcoal Supply Co., 3905 Jennings Road, Cleveland, Ohio.

Wood Charcoal Research Bureau, P. O. Box 356, Jacksonville, Florida.

Royer Foundry & Machine Company, 158 Pringle Street, Kingston Station, Wilkes-Barre, Pennsylvania.

Kemp Mfg. Company, Erie, Pennsylvania.

John H. Graham & Co., Inc., 113 N. Chambers Street, New York City, New York.

Synthetic Nitrogen Products Corp., 285 Madison Avenue, New York City, New York.

Armour Fertilizer Works, Atlanta, Georgia.

Buckner Mfg. Company, Fresno, California.

Campbell Irrigation Company, Woodbury, New Jersey.

Economy Irrigation Company, Seattle, Washington.

L. R. Nelson Mfg. Company, Peoria, Illinois.

The Budd Mfg. Company, Ravenna, Ohio.

Double Rotary Sprinkler Company, 109 Coca Cola Bldg., Kansas City, Missouri.

Pennsylvania Lawn Mower Works, Primos, Delaware County, Pennsylvania.

E. G. Staude Mak-A-Tractor Company, 2630 University Avenue, St. Paul, Minnesota.

The F. & N. Lawn Mower Company, Richmond, Indiana.

National Mower Company, 839 Cromwell, St. Paul, Minnesota.

International Harvester Co. of America, 606 South Michigan Avenue, Chicago, Illinois.

Milwaukee Sewerage Commission, P. O. Box 2079, Milwaukee, Wisconsin.

Nitrate Agencies Company, 104 Pearl Street, New York City, New York.

Atkins & Durbrow, Inc., 165 John Street, New York City, New York.

Bayer-Semesan Company, Wilmington, Delaware.

Standard Mfg. Company, Cedar Falls, Iowa.

Sherwin-Williams Company, 601 Canal Road, N. W., Cleveland, Ohio.

T. W. Wood & Sons, 11 South 14th Street, Richmond, Virginia.

Perfection Sprinkler Company, Plymouth, Michigan.

Roseman Tractor Mower Company, 810 Church Street, Evanston, Illinois.

Hyper-Humus Company, Newton, New Jersey.

Jacobsen Mfg. Company, Racine, Wisconsin.

Henry A. Dreer, 1306 Spring Garden Street, Philadelphia, Pennsylvania.

A. N. Peckham, Kingston, Rhode Island.

Philadelphia Seed Company, 103-105 Arch Street, Philadelphia, Pennsylvania.

Fate-Root-Heath Company, 833-869 Bell Street, Plymouth, Ohio.

Walter B. Helms, Inc., 237 South Jackson Street, Lima, Ohio.

J. F. Buel, Woburn, Massachusetts.

Hardie Mfg. Company, Hudson, Michigan.

Friend Mfg. Company, Gasport, New York.

Diamond-Calk Horseshoe Company, Duluth, Minnesota.

R. S. Horner, 61 Eagle Street, Geneva, Ohio.

Reade Mfg. Company, Jersey City, New Jersey.

Ant Control

Royal Products Company

Ball Washers

J. Oliver Johnson, Inc.
Worthington Mower Company
Ideal Power Lawn Mower Co.
G. B. Lewis Company

Ball Locators

Worthington Mower Company

Bent-Coos County State Sealed and Certified

J. M. McCullough's Sons Company
Seaside Bent Company

Bent Seed

Stumpp & Walter Company
Peter Henderson & Co.
O. M. Scott & Sons Co.
Hyper-Humus Co.

Bent Seed—Prince Edward Island

J. M. McCullough's Sons Co.

Bent Stolons

O. M. Scott & Sons Co.
Stumpp & Walter Co.
Ohio Humus Products Co.
Illinois Grass Co.
Lyman Carrier Products

Bluegrass—Seed

J. G. Peppard Seed Company

Brown Patch Control

Stumpp & Walter Co.
J. Oliver Johnson, Inc.
American Cyanamid Sales Co.
C. B. Dolge Company
McClain Bros. Co.
Arthur Boggs & Co.
Mallinckrodt Chemical Works
Lyman Carrier Products

Charcoal

Cleveland Charcoal Supply Company
Wood Charcoal Research Bureau

Cocoos

Lyman Carrier Products

Compost Distributors

Toro Mfg. Company

Compost Mixers

Toro Mfg. Company
Royer Foundry & Machine Co.
Kemp Mfg. Company

Cultivators (Disc)

John H. Graham & Co., Inc.

Cultivators (Spike)

John H. Graham & Co., Inc.

Dump Carts

Toro Mfg. Company
J. Oliver Johnson, Inc.
Worthington Mower Company
Peter Henderson & Co.
Ideal Power Lawn Mower Co.

Fairway Fertilizers

Synthetic Nitrogen Products Corp.
Armour Fertilizer Works
Lyman Carrier Products

Fairway Irrigation

Buckner Mfg. Co.
Campbell Irrigation Company
Economy Irrigation Company
L. R. Nelson Mfg. Company
Double Rotary Sprinkler Co.
Lyman Carrier Products

Fairway Mower Blades

The Budd Mfg. Company

Fairway Mowers

Pennsylvania Lawn Mower Works
Toro Mfg. Company
E. G. Staude Mak-A-Tractor Co.
Ideal Power Lawn Mower Company
Worthington Mower Company
The F. & N. Lawn Mower Co.
National Mower Company

Fairway Tractors

International Harvester Co. of America

Fertilizers

Milwaukee Sewerage Commission
J. Oliver Johnson, Inc.
Peter Henderson & Co.
Nitrate Agencies Co.
Atkins & Durbrow, Inc.
American Cyanamid and Chemical Corp.
Lyman Carrier Company
Bayer-Semesan Company
Synthetic Nitrogen Products
Armour Fertilizer Works

Fertilizer Distributors

International Harvester Co. of America
Synthetic Nitrogen Products Corp.

Flag Poles

Ideal Power Lawn Mower Company
Standard Mfg. Company

Flexible Steel Mats

J. Oliver Johnson, Inc.

Fungicides

Bayer-Semesan Company, Inc.
Sherwin-Williams Company
Mallinckrodt Chemical Works

Fairway Rollers

Toro Mfg. Company
Worthington Mower Company

Golf Course Construction

Ohio Humus Products Co.

Golf Equipment

Stumpp & Walter Co.
Peter Henderson & Co.
Ideal Power Lawn Mower Company
T. W. Wood and Sons
Worthington Mower Company

Golf Flags

Ideal Power Lawn Mower Company
Stumpp & Walter Company
Peter Henderson & Co.

Greens Fertilizers

Armour Fertilizer Works
Synthetic Nitrogen Products Corp.
Lyman Carrier Products

Greens Sprinklers

L. R. Nelson Mfg. Co.
Buckner Mfg. Co.
Double Rotary Sprinkler Co.
Perfection Sprinkler Co.

Hand Mower Blades

Budd Mfg. Company

Hole Cups

Standard Mfg. Company

Hole Cutters

Ideal Power Lawn Mower Company
Standard Mfg. Company

Hole Rims

Ideal Power Lawn Mower Co.

Horse Drawn Mowers

Pennsylvania Lawn Mower Works
International Harvester Co. of America
Worthington Mower Company
Ideal Power Lawn Mower Co.
Roseman Tractor Mower Co.

Hose

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Humus

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Stumpp & Walter Co.
A. N. Peckham
Peter Henderson & Co.
J. M. McCullough's Sons Co.
Illinois Grass Co.
Philadelphia Seed Co.
Seaside Bent Company
Lyman Carrier Products

Lime Spreaders

International Harvester Co. of America

Marvel Turf Conditioner

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Mower Blades

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E. G. Staude Mak-A-Tractor Co.
Toro Mfg. Company
Pennsylvania Lawn Mower Works
Ideal Power Lawn Mower Co.
Worthington Mower Company
International Harvester Co. of America
Roseman Tractor Mower Co.
The F. & N. Lawn Mower Co.
Jacobsen Mfg. Company
National Mower Company

Motor Trucks

International Harvester Co. of America

Market Place and Buyers' Guide---

Mower Sharpeners

Fate-Root-Heath Company
Toro Manufacturing Company
Henry H. Doty

Nitrophoska

Synthetic Nitrogen Products Corp.

Peat Moss

Atkins & Durbrow, Inc.

Perforator

J. F. Buel

Poa Annua

J. M. McCullough's Sons Co.

Power Mowers

Cooper Mfg. Company
Toro Manufacturing Company
Worthington Mower Company
International Harvester Co. of America
Jacobsen Mfg. Company
Ideal Power Lawn Mower Company

Putting Green Mowers

Toro Mfg. Company
Pennsylvania Lawn Mower Works
Worthington Mower Company
Ideal Power Lawn Mower Co.
Roseman Tractor Mower Co.
The F. & N. Lawn Mower Co.
Jacobsen Mfg. Company

Power Putting Green Mowers

Jacobsen Mfg. Company
Worthington Mower Company
Ideal Power Lawn Mower Co.

Rakes

Pennsylvania Lawn Mower Works

Rhode Island Bent Seed

A. N. Peckham

Rollers (Hand)

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Stumpp & Walter Company

Rollers (Fairway)

John H. Graham & Co., Inc.
Toro Mfg. Company
Worthington Mower Company

Rollers

Stumpp & Walter Company
Toro Mfg. Company
Worthington Mower Company

Rough Mowers

Toro Manufacturing Company
Pennsylvania Lawn Mower Works
Worthington Mower Company
Ideal Power Lawn Mower Co.
Roseman Tractor Mower Co.
Jacobsen Mfg. Company
International Harvester Co. of America

Seaside Bent

Seaside Bent Company
Lyman Carrier Products

Shower Nozzle

McClain Brothers Company

Signs

Standard Mfg. Company

Spike Disc

John H. Graham & Co., Inc.

Sod Cutters

J. Oliver Johnson, Inc.

Sprayers

Hardie Mfg. Company
Friend Mfg. Company

Sprinklers

L. R. Nelson Mfg. Company
Buckner Mfg. Company
Economy Irrigation Company
Campbell Irrigation Company
Double Rotary Sprinkler Co.
Perfection Sprinkler Co.

Spuds

Diamond-Calk Horseshoe Company

Stolons

O. M. Scott & Sons Co.
Lyman Carrier Products

Sulphate of Ammonia

Synthetic Nitrogen Products Corp.

Tee Markers

Standard Mfg. Company
G. B. Lewis Company

Tee Mowers

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Worthington Mower Co.
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Hyper-Humus Company
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Toro Manufacturing Company
Worthington Mower Co.
International Harvester Co. of America
Ideal Power Lawn Mower Co.
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Tractor Wheels and Spuds

R. S. Horner

Turf Fertilizers

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Underground Hose Locker

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Wood Charcoal

Wood Charcoal Research Bureau

Worm Eradicators

Peter Henderson & Co.
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EMPLOYMENT DEPARTMENT

Insertions of advertisements in this section will be inserted on receipt of copy and 50 cents in stamps.

GREENKEEPER WANTED

I have a position open for an all-around man, experienced in upkeep of an 18-hole sand green course. Must be A-1 with mowing equipment and machinery. Only one who takes interest in his work and sees that the job is done will be considered. Address all inquiries to Box 10, The National Greenkeeper and Turf Culture, Caxton Building, Cleveland, Ohio.

POSITIONS WANTED

Experienced greenkeeper with splendid references desires position in the Chicago district. Understands thoroughly soil and climatic conditions. Good man for any club. Address inquiries to Box A, The National Greenkeeper and Turf Culture, Caxton Bldg., Cleveland, Ohio.

pro-greenkeeper or greenkeeper. Grand-nephew of the late "Old" Tom Morris of St. Andrews, Scotland. References, John Ball, eight times British Amateur champion, and Jimmie Johnson, ex-American Amateur champion. Previous connections, Town and Country Club, Saint Paul; Midlothian C. C., Chicago; Louisville C. C.; Country Club of Harrisburg, Pa. Address Tom Morris, 1548 E. 64th Street, Chicago, Illinois.

Well-known greenkeeper with best of recommendations and thorough experience in maintenance and construction at low cost is open for position at prominent club at moderate salary. For full details address Box D, The National Greenkeeper and Turf Culture, Caxton Bldg., Cleveland, Ohio.

Agronomist with several years' experience wants connection with golf maintenance work, consulting, managing or research. Thorough knowledge of chem-

istry, soils, fertilizers, grasses and how to buy the various things for golf courses. Address inquiries to Box 5, The National Greenkeeper and Turf Culture, Caxton Bldg., Cleveland, Ohio.

Fertilizer Facts for Fairway Improvement

(Concluded from Page 7)

Because clover and weeds are more prevalent where turf receives lime regularly, it was said that lime should never be used on established turf. The belief is no longer tenable, and the judicious use of lime in conjunction with feeding is now recommended. The beneficial effects of lime are most noticeable with the approach of dry weather in mid-summer. Besides its direct effect on the well-being of the turf, lime tends to improve soil structure of acid clay soils by promoting granulation.

The following factors are important, and should be considered in deciding upon the amount of lime to apply, namely degree of soil acidity, kind of soil, and variety of grass. With the possible exception of lime-loving Kentucky blue grass, lime is needed on moderate to stronger acid soils. The coarser-textured sands and sandy loams require less lime than finer-textured loams, silt, and clay soils of equal acidity. Fescue and bent seemingly withstand acidity better than Kentucky blue grass, hence less time is required, and its use should be confined to the more acid soils only.

Ground limestone of reasonable fineness is the safest and best form of lime to use. In some localities the use of a material derived from dolomitic limestone may be advisable to supply magnesium, and thus provide for its possible deficiency. Yearly applications of lime are unnecessary. It is better practice to make applications every two to four years. Effects are satisfactory, and there is less danger of unduly encouraging clover.

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Brown Patch Control

After nearly a year of intensive study, J. R. Ervine, formerly connected with the Davey Tree Institute and well-known student of Botany, has worked out what he believes would be an almost perfect method for the control of brown patch. To quote Mr. Ervine:

"Most authorities agree that brown patch is caused by Saprophyte fungi and to date there has been no fungicide introduced that will kill the adult plant without injuring the plant upon which they attack, but the spore of the fungi, like the germ of bacteria, can be killed during the germination period.

"I would suggest that with the last application of topdressing in the fall use approximately one pound of lime sulphur to 500 square feet of turf and in January repeat the application with a spray and repeat again with the first spring topdressing. In this method I believe it would be possible to catch the spores that germinate in the fall with the first application and those that would lay dormant

until along in February or March would be killed in the final application at the time of topdressing. I sincerely believe that if such a method is carefully applied to greens suffering severely from brown patch that within a period of two years the fungi disease will be completely and permanently destroyed.

"I would advise that a complete soil test of the greens be made late in the fall, one that will give the amount of nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur available in the soil, then use the fertilizers necessary to make up the deficiency.

MERLE ZWEIFEL,
Catoosa, Oklahoma.

Look Out for Sod Webworm

It is said by the McClain Bros. Company, Canton, Ohio, that tests made by the Rhode Island State College rank Fungol as one of the two leading products for the control of sod webworm. The above company says they applied Fungol successfully at the rate of one-third of a pound in 20 gallons of water which was used as a spray.

Fungol controls many soil pests for the greenkeeper in addition to the sod webworm, so the makers claim. Sufficient applications to kill the webworm will also take care of brown patch and other vermin such as grubs, beetles, snails, earthworms, etc.

The Research department of McClain Brothers Company, which has made a complete study of lawn and greens maintenance, recommends most strongly that regular spray applications be made. Looking toward a control of these troubles rather than waiting until trouble develops before taking action, a systematic control chart has been worked out which can be had free by addressing McClain Brothers Company, Canton, Ohio.

Our Error

In the list of manufacturers and dealers published last month in the Buyers' Guide we inadvertently omitted the name of the Toro Mfg. Company, Minneapolis, Minn., and we take this occasion to call attention to this error and to apologize to the Toro Mfg. Company because of this unintentional oversight.



will keep new-cut Greens free of ant hills and worms and not injure turf.
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Buckner Irrigation Co., 4970 Milwaukee Ave., Chicago, and Bayside, Long Island, New York.

Eastern Engineering Representative:

Wendell P. Miller and Associates, Bayside, Long Island, New York.

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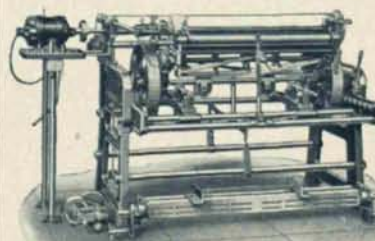
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