



NEWS LETTER

RECIPE FOR A GREENKEEPER:

*"A heart full of sincerity
An overflowing measure of hard work
Season with human interest and alertness
Serve from eight to sixteen hours every day."*

MAY

1936

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

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312 Mt. Pleasant St., Fall River, Mass.

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450 William St., Stoneham, Mass.

May, 1936

Vol. 8, No. 5

May Day is a celebration common to all Celtic peoples. It is coincident with the Feast of Flora, Roman Goddess of flowers. Some of its rites are a survival of the Druidical worship of the Sun God.

In the Isle of Man, winter is still vanquished in a mock battle by summer and until recently the Beltane fires were still lighted in Scotland. Beltane, May 1st, Lemmas (loaf mass, in honor of the wheat harvest), August 1st, All Saints' Day, November 1st, and Candlemas Day, February 2nd, were the quarter days of Scotland. These days divided the year into four parts and were the time for settlement of accounts and at which leases took effect and expired. To be May Queen the fairest girl in the village was chosen as a fit representative of Flora.

The May pole was found in every town or village, and high and low danced around it, in and out, to weave the colored ribbons. The May pole is said to have represented the great standard of justice and under it were heard complaints of the people against governor, baron and overlords.

—*The Thread of Life.*

MAY MEETING

The May meeting was held on the 4th at the Norfolk Golf Club, Dedham, Mass. Preceding lunch, home greenkeeper Bruno led those present on a tour of the course, during which various course problems were discussed.

Following lunch, there were demonstrations of the new Toro Duplex mower, and of the Root Spreader.

Due to heavy rain, the golf tourna-

ment entries were limited, but some good scores were turned in despite the rain. Prizes were won by N. Bruno with 83-69, R. Peckham with 79-70, and S. Braio with 93-70.

Robert Mitchell of the Kernwood C. C., Salem, Mass. reports that he has some five thousand square feet of Kernwood Velvet bent sod in putting green condition, for sale at rate of 20 cents per sq. ft. Anyone interested should see or write Mr. Mitchell.

Any members who have material of historical value relative to the earlier days of our club, and who care to donate same, should communicate with the Library Committee, which committee has been designated as the custodian of such material.

Carlton E. Treat is now located as greenkeeper of the thirty-six holes of the Montclair, (N. J.) Country Club. We certainly shall miss Carl, and extend all of our best to him in his new position.

Treasurer Frank Wilson reports that he has five more club pins available, which may be purchased by our members at \$2.50 each.

The June meeting will be the annual greenkeeper-club official tournament, and will be held on the 1st at the Rhode Island Country Club, West Barrington, R. I.

The officers of the Connecticut Association of Golf Course Superintendents are: Fred Emenezer, Pres.; Donald McKay, V. Pres.; Charles Travers, Sec. and Treas.; LeRoy Cooper, W. E. Perkins, and Ed. Hill, Directors.

We have just heard from Frank Robinson that he has recently secured the position of greenkeeper at the Goddard Park course in East Greenwich, R. I.

THE DEMONSTRATION TURF GARDEN

at the Charles River Country Club

By Frank H. Wilson

As the turf experiments started in 1928 have served their purpose and a new set is to be undertaken, it might be well to refresh our minds with the outstanding results of the eight years work. You will perhaps remember that the grasses were judged on their quality; that is, the fineness, thickness, color, freedom from nap, the prevalence of weeds, time required to produce good turf, ability to withstand heat, susceptibility to disease and chemical injury and topdressing requirements. Notes on weather that might affect the growth of turf, such as late spring, drought, periods of excessive rain etc. were carefully observed. At the end of the tests the p. h. and phosphoric acid content of the soil was taken in the fertilizer series.

The greens grasses can perhaps be divided into four classes in relation to texture of turf, coarse, medium coarse, medium fine and fine. The leading grass in each class was as follows, Metropolitan, Seaside, Colonial, 14276 velvet; the first and fourth stolons, the second and third seeded. South German Mixed Bent placed high and could be placed between Colonial and velvet in texture.

There were three outstanding fairway mixtures rated in the order named, New Zealand Chewings fescue 80%—South German mixed bent 20%; Kentucky blue grass 40%—New Zealand Chewings fescue 40%—red top 20%; and Kentucky blue grass 60%—red top 20%—South German mixed bent 20%. The second mixture became a stand of nearly pure fescue.

In the greens fertilizer test plots on South German mixed bent cut at one quarter of an inch in height, the 6-12-4 formula ranked first, 12-6-4 second, both contained sulphate of ammonia, ammonium phosphate, superphosphate and sand. As equal amounts of nitrogen were used the 12-6-4 was really a 6-3-2 and the difference in rating of the two was due to the proportion of phosphoric acid and potash present. The first had an acidity of 4.5, 4.5, 4.8 and 5.0 in the 1st, 2nd, 3rd, and 4th inch of soil and a phosphoric acid content of 150, 100, 75, 75; the second a P. H. of 4.5, 4.8, 4.9, and 5.0 in the

1st, 2nd, 3rd, and 4th inch of soil and a phosphoric acid content of 100, 75, 75, 75. These fertilizers were put on once a month, full strength in the months of April, May, June and September and half strength in July and August. It was spread with sand and it was very difficult not to burn the turf during the hot months. The rate of application was one pound of nitrogen per 1000 sq. feet, or 16 2-3 pounds of the 6-12-4 formula per 1000 square feet and one half that amount for the 12-6-4. Activated sludge rated first in the organic section and third in the whole series. Its P.H. was 5.9, 5.0-5.9-5.5- in the 1st, 2nd, 3rd and 4th inch of soil with P205 content of 75, 75, 75, 75. The check plots averaged a P.H. of 5.0 and a P205 content of about 60 lbs.

Activated sludge rated first in the fairway test plots. The first few years the 6-12-4 and the 12-6-4 stood first and second with activated sludge third. However each year the two inorganic fertilizers have each declined in rating and activated sludge risen until at the end of the test it was at the top. In this respect the test has conformed with results from thirteen other gardens throughout the country.

There was one greens plot and one fairway plot treated with arsenate of lead, each having a check plot. The germination of the grass in the arsenate of lead plots was retarded about six days. Chickweed was eliminated, there were less earthworms, grub control and no apparent ill effects of the arsenate of lead on the established turf. There was no apparent effect on any other weeds than chickweed.

Watered turf in the fairway section was much better than unwatered turf. Heights of cut $\frac{1}{2}$ inch and $\frac{3}{4}$ inch gave different results as far as giving a good lie to a golf ball is concerned. If the turf is thick and of a type found in the fescue bent plots $\frac{3}{4}$ of an inch cut gave a splendid lie. In the bent, blue grass, red top plots the ball did not stand up and the $\frac{1}{2}$ inch cut gave the best lie.

Some of the adverse things found were that, Virginia and Columbia were very poor greens grasses. Fescues will not stand the close cutting of greens and their place is soon taken by other grasses. The extreme acidity of the sulphate of ammonia, probably tying up the plant in the soil showed the lack of phosphoric acid and potash, and caused the turf to become hide bound, thin out, take on a nap and fill up with moss. Kentucky Blue grass and red top mix-

ture was not suited to the type of soil here. That fairway watering must be carefully done or the turf will be filled with weeds. And last but not least there is plenty more to be found out about fertilizers, suitable grasses for golf purposes, weed control, disease control, the water needs of various grasses, and a multitude of other things.

NATIVE VEGETATION ON YOUR GOLF COURSE AND WHAT IT INDICATES

by Jack Welsh, Jr.

Asst. Greenkeeper, Wakonda Country
Club, Des Moines, Iowa

(Read at 1936 Recreation Conference)

We know all plants in their ranges of growth have definite soil preferences as to moisture, texture, and chemical analysis. These plants as they adapt themselves to these conditions are our natural soil indicators.

I am going to try to give you a slightly different concept of soils than you have had before; as a basis for what I have previously stated and what will be said later. Horticulturists concerned with trees and shrubs have classified soils in a different manner than we usually consider them. They classify them as follows:

pH 3.1-4 Superacid

Found in peat bogs where the chief plant is sphagnum moss.

4-5 Mediacid

Found in swamps where soil lacks lime, and some peat bogs. Accumulations of rotting wood or peat give this condition. It is also found on Mt. peaks or sand hills where the subsoil lacks lime.

5-6 Subacid

Found in marshes, meadows, swamps, and abandoned fields and gardens where there is no lime present.

6-7 Minimacid

Limestone regions rich in humus (meadows or woods).

7-8 Minimalcaline

Marshes and swamps fed by water carrying lime in solution. Also on limestone ledges and woods where there is an accumulation of black leaf mold.

A general term is given these latter two classifications of soils. They are

called circumneutral soils, that is, those with a pH of from 6-8. This seems to be the way the horticulturists keep from any definite statement as to soil requirements for certain plants, they just place them in this class and let it go at that.

I realize that in a talk of this sort it is difficult, with such a heterogenous group to keep in the subject of plants that are all familiar to each of you. With this in view, I have tried to choose plants that will cover a large area of the United States or are native plants familiar to most of you. In this way I hope I can hit on one or two that will help you with your problems.

SHRUBS

Sumac—on arid sterile soils usually with pH 6-8.

Rhododendron—usually poor stony soils, light and on moist side pH 5-6.

Crab apple trees—usually poor stony soils pH 6-8.

Barberry—is a poor indicator except as to dry soil which it prefers; otherwise it grows indifferent to soil or exposure.

Bay berry—indicates dry sterile soils pH 5-6.

Blue berry or high bush cranberry—grows wild in sandy barren soils, some in very acid soil. The average pH for the group is about pH 5-6.

Corralberry—(Buck brush, Indian current, Snapberry and Turkey berry)—all native of lime soil, clay and pH 6-8.

Buck thorn—dry sands and clay pH 6-8.

Cinquefoil—very sandy dry soils pH 4-5.

Spireas (Including Bridleweath)—medium moist soil, slightly acid pH 6-8.

Dog woods—of which some of the finest specimens are grown in New England, are adapted to all soils. There are a number of species, but if one happens to know the species florida pH 6-7 only, and species canadensis pH 4-5.

Lilacs—moist lime soil pH 6-8.

Tamarix—likes sandy soils, can tell that soils are not alkaline or heavy clay. Indicates the presence of a great deal of humidity.

Horse chestnut or buckeye—rich damp loam pH 6-8.

Laurel—rich fertile soil on moist side.

Locust shrubs—indicate high Nitrogen content, grow best in sandy loam.

Privet—fertile sandy loam pH 6-8.

Flowering almond—well drained sandy loam.

Some of our common plants are specific indicators of soil conditions in themselves, for example:

House hydrangea—blue flowers in acid soils, pink in neutral or alkaline soils.

They also indicate quite moist soils.

Tartarian maple (shrub)—in dry soils the foliage turns so red that they appear to have been painted, while not so when plenty of moisture present.

Roses—in general do best in heavy clay soil, but *Rosa rugosa* or Rough Rose indicates a hot highly alkaline soil by becoming yellow and growing irregularly.

Ten plants indicating dry soils are:

Japanese barberry
Privet
Sand cherry
Buck-thorn
Sumac
Panicle dogwood
Morrow honey suckle
Shrubby cinquefoil
Corral berry
Russian olive

Ten plants indicating wet soils are:

Alder
Willow
Arrow wood
Swamp azalea
Red-osier dogwood
Red choke berry
Nanny berry
American Elder
Swamp rose
Spicebush

TREES

Elms—

American—moist rich soil pH 5-6.
Rock or Cork—indicates moist lime soil.

Both of these do well along river banks.

Red or Slippery—moist rich soil.

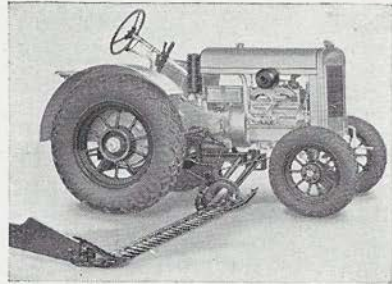
Oaks—

White—dry slightly alkaline soil.
Weld—good moisture in the soil.
Red—good in both poor and rich soil.
In quite sandy loam assumes a more brilliant autumn color than in other soils.

Birches—

Gray—rich moist soil.
River or Red—much more moist soil, usually on the wet side, acid.
White—medium neutral soil, high moisture.

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Nut trees—

Walnut—rich moist soil acid pH 4-6.
Hickory—fairly dry soil pH 6-8.

Willows—

As we all know like wet or very moist soil pH varies from 4-7. They are bad actors around your tile lines too.

Maple—

Rich fairly acid soils, with medium moisture and pH 5-6.

Pine—

White—moist sandy soils, fairly acid.
Pitch—sandy to barren soils.
Red—dry acid soils.
Scrub—grows on leached barren, sterile soils.

Larch—

Cold moist to wet soil—acid with pH of 4.5-5.

Spruce—

Red—rocky, gravelly soils pH 4-5.
Black—cold moist soils.

Fir

Balsam—damp acid soils, sandy loams.
Hemlock—rocky soils pH 4-5.

I have now a few of the common weeds that we find encroaching in our golf course turf. These weeds shall probably mean more to you as indicators than the trees and shrubs as, I suppose, they are almost all familiar to you. First let us take three weeds that are quite common all over the United States; the Cockle burr, the Ragweed and the Beggar's tick. If you have these in or near your course in numbers I would suggest you do something to cut down the sand content of your soils because these plants indicate sand and plenty of it.

Then too the Plantains are common to us all. The common Plantains, Rugel's Plantain and Rib grass. These plants indicate a tight compacted soil and on the acid side. You have all probably had an opportunity to see a path gradually become apparent across your course at some time. If you have taken note you have seen that the history of the path is as follows: first grass, second a small amount of clover begins to appear; then you get an increase of clover, next the Plantain begins to appear, this is because the soil is becoming compacted from concentrated traffic. After the Plantain once starts the clover slowly disappears, the Plantain will flourish for a long time and finally it will go and leave you a hard baked path that looks like it had been surfaced by the Hi-way Commission.

Here is a list of a few common weeds that will shout the condition of your soil if they are present in quantities:

Moss—in your turf indicates low potassium and Nitrogen along with an acid condition.

Dandelion—indicates a tight compacted soil.

Johnson grass—a moist rich alkaline loam.

Sheep Sorrel—infertile compacted very acid soil.

Large and Small Crab grass—any soil 200% germination.

Witch grass—a good garden soil.

Creeping Buttercup—poorly drained alkaline soil.

Heal all—sterile soil low in plant nutrients.

Spotted Spurge—dry infertile soil condition.

Wild Carrot—depleted sterile soil.

Pearl Wort—soggy wet condition—
so if you have Pearl Wort be sure to put lots of water on it.

Common Yarrow—dry loam soil.

Orange Hawkweed—depleted acid soil.

Ground Ivy—depleted soil with poor aeration.

Ladies tobacco—due usually to too much water.

Small flowered Cranes bill—due usually to too much water.

In growing bent turfs we are all interested in keeping our soil on the acid side to assure the best possible turf growth. Therefore, I have selected a short list of plants that will, by their presence, indicate that you have an acid condition:

Sheep Sorrel
Paint Brush
Daisy
Horsetail Rush
Corn Spurry
Wood Horsetail
Goose Grass
Plantain

As we have weeds that indicate this acid condition so do we have many that indicate alkaline conditions to us. If any of the following are with you in quantities it is time to get out the Flowers of Sulfur because these plants flourish in a highly alkaline condition:

Cowslip
Hedge mustard
Deadly Nite shade
Ragweed
Ox eye daisy
Wild Chicory
Fools Parsley
Cranes Bill
Bulbous Buttercup
Candy Tuft
False Goldenrod
Salt Grass
Marsh Grass
Trailing Buttercup
and generally Clover

Last I have taken a number of plants that, if they are present in numbers great enough to be a serious bother, will indicate that your soil is too dry at the surface:

Bud Brush
Wild Barley
Pepper Grass
Wild Rye
and Goose Fool or Pigweed

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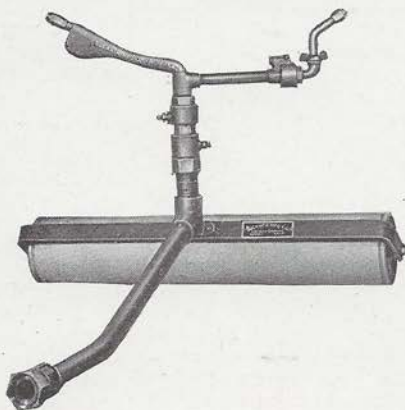
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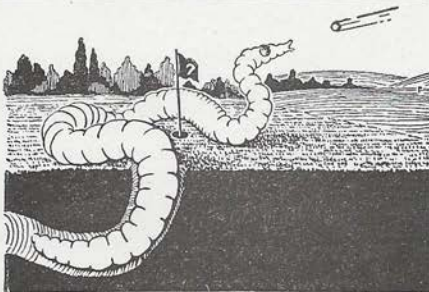
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WHY ARGUE? NATURE MAKES THE CHOICE

by C. Benz Robinson

Manager Sunningdale Golf Club,
London, Ontario

(Read at 1936 Recreation Conference)

We are here today for one particular reason and that is, because greenskeepers have to produce and maintain turf that will provide the desired playing conditions for our present day golfers.

This may seem at first as growing turf under very abnormal conditions, but we need not become alarmed when we stop to consider what nature has to offer. Nature provides a great many species and varieties of grasses, each having a great range of different qualifications as turf producing plants.

The wrong selection of these plants means endless trouble as nature never changes her habits and resents interference. She will however gladly cooperate if given the opportunity.

This being true, why argue? Nature controls the deciding vote which means success or failure.

The turf, the greenkeeper has to produce must have the following qualifications:

1. Longevity. 2. Fine texture. 3. It must stand close clipping.
4. It must be mechanically strong.
5. It must provide a closely knitted even surface.
6. It must be disease resistant.

To produce this turf, nature offers grasses which have a wide range, in habits of growth and requirements for various conditions.

The majority of our grasses tiller high and this should be one of our first considerations when selecting plants for golf course purposes. Tillering is the process by which grass plants produce additional shoots. The point of tillering is where the new buds appear in the shoot and their height above the ground varies greatly in the different species of basic grasses. Obviously this governs the height of cut and we are inviting trouble the moment a plant is clipped below the point of tillering.

Some of our grasses reproduce by stolons. A stolon is a surface, creeping stem which produces roots, stems and

When a country club seeks the services of a greenkeeper it is faced with the tedious task of investigating the records and references of numerous applicants, many of whom lack the proper qualifications.

Our Employment Committee offers a happy solution to this problem by placing the country club in contact thru written application or personal interview, with men whose qualifications fit them for the particular position to be filled.

Guy C. West, Chr.

leaves at the nodes or joints. The distance between nodes has a direct bearing on the density of the turf and governs to some extent the height of cutting.

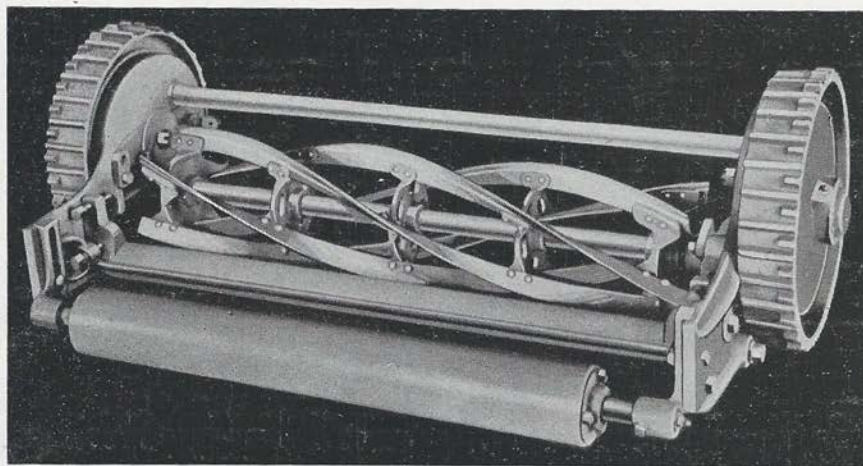
Some of our common lawn grasses reproduce by rhizomes. These are underground stems which root at the nodes very similar to stolons. This type of reproduction develops stools, some of our slowest spreading grasses are those which reproduce only by stooling. To repeatedly vie with nature, yes, in some cases even one sin against her means poor or completely destroyed turf. Nature however, tries to be patient and often is so patient we do not recognize our own mistakes.

Cultural practices will slightly change the habits of some plants but they will never grow satisfactorily if placed under the improper environmental conditions.

With these points in mind it is very easy to understand that turf producers must consult nature and Why Argue? when she has already made her decisions.

Kentucky blue grass was used on putting greens 30 years ago, but how many such greens do we see today? Kentucky blue grass has passed out as a putting green grass since the introduction of the close clipping putting green mowers.

In this comparison of our three species of basic grasses for golf courses, I will attempt to explain why, how and where the varieties of these grasses can be successfully grown.



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THE COMPARISON OF BASIC GRASSES

Plant characteristics and cultural conditions	Blue grasses	Bent grasses	Fescues
Soil preference	Rich garden loam	Medium to light well drained	Light to medium
Food requirements	Heavy	Moderate	Light
Moisture requirements	Heavy	Moderate	Light
Root system	Coarse	Fine	Very coarse
Depth of root	Very deep	Shallow	Deep
Range of pH tolerance	7.5 to 6.0	6.5 to 5.5	7.5 to 5.0
Compact soil tolerance	Tolerant	Not tolerant	Decidedly not
Loose soil tolerance	Tolerant	Tolerant	Very tolerant
Disease resistance	Medium	Very susceptible	Resistant
Aggressiveness	Medium	Very aggressive	Aggressive
Recovery from disease	Slow	Very fast	Very slow
Response to fertilizer stimulant	Medium	Very fast	Slow
Response to fertilizer on habit of growth	Causes tillering	Will grow taller	Causes tillering
Response to tonic	More tillering	Stooling or tillering	Causes branching
Effect of tonic on maturity	Speeds up much	No effect	No effect
Matures	Early in June	Late July	Very late August
Growth after maturity	Late	Late	Very late
Time of first growth in spring	Very early	Very late	Late
Speed of seed germination	Medium	Fastest	Slow
Length of time to (turf) become established	2 years	1 year	2 to 3 years
Type of turf produced	Reproduced by tillering and rhizomes giving an even sod	Reproduces by tillering and stolons giving dense even sod	Rather bunchy, may cause a bald crown
Effect of clipping on tillering	Causes tillering and production of denser turf	Causes tillering and production of dense, even, fine textured turf	Rather bunchy, may cause a bald crown

CONCLUSION

Greenkeepers have to produce a definite commodity which is a fine even textured turf that will stand the gaff and provide a satisfactory playing conditions for the dub and champion alike.

Nature has provided suitable plants and laid down definite rules for con-

duct.

You cannot play this game of greens-keeping without the assistance of Nature as she quits if you break one of her rules.

Why argue with her, she makes the final decisions.



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COMMENTS ON THE CERTIFIED BENT GRASS SEED SITUATION

By Fred S. Radway

Radway-McCullough Seeds, Inc.,
New York, N. Y.

(Reprinted from March 13, issue
Seed World)

Our English Cousins, our Canadian neighbors and our New Zealand friends have found a satisfactory solution of a problem which is still in the kindergarten stages in Uncle Sam's domain, that is—official certification of bent grasses without disclosing the grower's or farmer's name or address.

There is more evil in that little tag than superficial opinion realizes. The ungarnished great ego of some of our own bent farmers and lack of strict regulation have resulted in many freak certifications.

The writer himself purchased, or has been offered, Certified Seaside bent as recently as January 1936, and made a previous purchase, which upon arrival showed an actual test way below Oregon state certification requirements. However, some smart county agent, used his own printed tags, designating himself as an official county agent, certifying this seed in the capacity of a state county agent, and putting his signature on same.

In order to put the finishing touches to this game of "Barnum and Bailey" tactics, the accused even used branded bags of a well known Seaside bent registered trade-mark, whose owner once upon a time made a decent living from refining Seaside and who subsequently, through reasons of change of fortune, has acquired a government position.

These empty bags, with the good will and good name of the former owner of that trade-mark, are evidently still available, according to offers received here recently. I personally call this a "racket"—just one of the many bent grass misunderstandings. It is preferred that my statements be taken for granted without further questioning. We do not like to dig up dirt and make the other fellow unhappy.

Furthermore, if all small farmers should grow, say, five bags of bent seed,

have their own names plastered on the real state certified tags, such procedure would invite a great deal of correspondence between actual consumers, eastern golf course greenkeepers or equipment houses and small or large Pacific Coast growers or farmers—(a farmer to consumer racket).

Let us say that there are two hundred small bent farmers and perhaps about five bent grass cleaning establishments in this country. The marketing of bent grass seed rightfully belongs to the one who has an investment and expensive, up-to-date cleaning machinery,—to the one who grows and refines the seed. He is the man who invests and takes the chances—the artisan.

The state should certify and tag sealed bent grass, give it a serial (secret) number and not publish on the tag or elsewhere the name of the originating firm, grower, or cleaner. That is how it is done in the Dominion of Canada. There are no individual names or individual firm names mentioned; only the government inspector's name appears, besides the number.

The great commercial evil in the industry here is still in its infancy—the great "I am it." Even dealers three thousand miles from production areas can have seed certified and place their advertising name and address right on the official tags. The name of the farmer, the cleaner or the eventual dealer should not be permitted to appear on the tag because this labyrinth of names not only invites useless correspondence of the chain-letter style, but it breaks the market. The one bag buyer and the two bag grower keep up a correspondence-school with a never ending argument, which only depresses market values.

Part of the art of economy is the study of commerce, which means the word "middleman"; the necessity which takes goods from where they are abundant to places where they are in demand. No, they are not parasites or leeches. Is a commission agent, broker, or merchant, etc., detrimental or helpful in marketing merchandise? This depends on circumstances.

On the Pacific Coast and likewise in the east there are men who have their offices under their hats, and such people, if they are judiciously helpful in marketing, without over-anxiety or eagerness are not a detriment, provided their

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GIGANT DE LUXE 36 IN. FAIRWAY

Saves 20% in labor, time and power. Unbreakable malleable iron construction, 6 heavy crucible steel blades, reversible lower blade, train of machine cut gears on BOTH sides (dust protected).

Timken bearings and Alemite lubrication make this the toughest as well as the best performing mower on the market. Also offered in 30 in. size.

MODEL "K" 30 IN. FAIRWAY

One size only. Similar in most respects to DeLuxe Fairway except Model "K" is of conventional cast iron construction. Price per unit only \$87.50.

SUPER ROLLER GREENS MOWER

A high speed machine with 8 blades of finest crucible tool steel. Dust proof self aligning bearings. Train of three cut gears and Alemite lubrication assure the continued precision of this mower. 18 inch cut with heights from $\frac{1}{8}$ to $1\frac{1}{2}$ in.

THE QUIET PENNA - LITE

Tough aluminum alloy construction makes this machine $\frac{1}{3}$ lighter in weight, therefore ideal for bunkers and terraces. Rubber tires and roller make it noiseless. For all 'round work the Penna-Lite represents the latest in lawn mower construction.

—and others at all prices in all sizes and all types.

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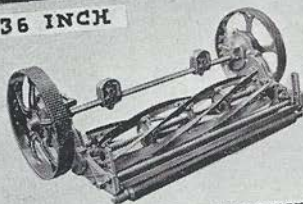
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QUALITY

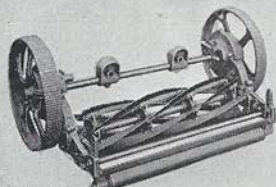
LAWN MOWERS

PRIMOS PENNA.

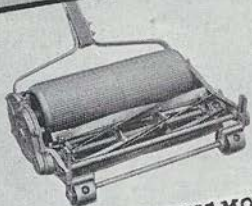
36 INCH



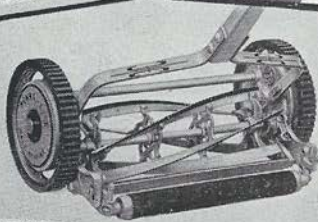
GIGANT DeLuxe FAIRWAY



MODEL "K" FAIRWAY



SUPER-ROLLER GREENS MOWER



THE Quiet PENNA-LITE

New

—FAIRWAY NOW AVAILABLE WITH PNEUMATIC TIRES

hunger for profit without investment is not greedy. Brokers are a vital necessity or a necessary evil in all economic enterprises (even in the stock market).

But there are brokers—and brokers. The man who owns material or merchandise is to receive first consideration. The man who buys, puts his money into stocks, and holds, carries, speculates, barters, and exchanges takes the real risk and is the most important factor in the picture of commerce. So is the broker and commission merchant provided he follows a healthy trend of trade.

However, if a local farmers' or growers' broker on the Pacific Coast gives opening prices, say on bent grass seed, before the harvest and quotes or makes sales before the price is officially established and if his prices are either too low or too high, he automatically damages the industry. Only a man with his own investment should be permitted to speculate to this extent.

There should be adequate legislation to protect the bent industry in America from the promiscuous use of nameless tags and from farmer to consumer selling. There should be protection and strict rules, also graduating price levels in accordance with cash or quality involved in transactions.

No man should be able to buy 2,000 pounds of bent grass seed with the privilege of taking one bag at a time at the same price.

The buyer with the invested capital must be judiciously protected in order that the farmer may not be able to sell to golf courses or equipment houses direct on the "pay as you play" plan, which has been the case too often.

During 1935, the Grass Seed Division of F. H. Woodruff & Sons, with Chan Baker, Morris Abbott, and Bill Nye as Editors, issued several timely leaflets known as "Turf Topics". We believe that many of our readers did not receive these leaflets, and hence will take pleasure in reprinting a few of them from time to time.

SOIL WATER . . . WHAT IS IT?

What is Soil Water? It sounds simple, merely the water in the soil, but did one ever stop to think of the importance of that Soil Water? True, water is necessary for any living thing be it animal or plant, but with the plant it performs another function.

We realize that a plant grows in the soil, but does the plant live on the soil? It certainly does not. Its roots spread out into and through the soil for two purposes. First; to anchor it against wind, rain and other destructive elements. Second; to secure that all important and necessary supply of Soil Water. Plant roots are so formed that no part of the soil may enter them. The tiny root-hairs are porous and absorbent, however, and the soil is the storehouse of the Soil Water.

If a soil is extremely sandy and loose, it may be assumed that very little water will remain in it but will leach down through beyond that horizon where it is no longer available to grass plants. Humus—not necessarily commercial humus—is therefore an important ingredient of every soil if good lawns are to be enjoyed for it not only is a home for the nitrifying bacteria that break up the plant food into forms available to the plants, but because it holds large quantities of water into which these plant food elements dissolve as they are made available and it is in this water, which is taken up by the plant roots, that plant food is introduced into the plant itself.

It has often been said that fertilizer is of no value without water and it is very true. Dry humus has no active bacteria but soak it with water and it immediately becomes a veritable power house of tiny organisms capable of breaking down fertilizers into forms that plants may use. To this use add its water retaining properties and one can readily understand why a good lawn is often enjoyed by one home-owner who has good soil, while his neighbor sows the same seed on light sandy land and fails.

Some plant foods are more quickly available than others. This is true because they are more easily acted upon by the tiny bacteria and consequently become a part of the Soil Water more quickly and can be used by the plant. A happy combination for grass is a plant food made up of ingredients that break down as varying intervals so that a steady and constant supply of plant nutrients are liberated into the Soil Water.

Vegetable and flowers gardens can be cultivated and mulched, thus aiding in retaining much Soil Water, while lawns cannot. It is highly important then to see to it that the soil is improved before the seed is sown for without Soil Water all vegetation is nil. —Turf Topics.

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for every
GREENSKEEPER AND GREENS CHAIRMAN
FLORIDA HUMUS

A pure, soil building organic matter, rich in nitrogen, entirely free of weed seeds and foreign matter. An ideal medium for composting. Light, fluffy, clean and odorless. Packed in 200 pound containers (12 cu. ft. compressed to 7)—ready for use requiring no shredding, grinding or breaking.

ANALYSIS—Moisture--44.87, On Dry Basis--Ash 8.68%, Organic matter 91.67%, Acidity pH--6.0 (7 is neutral), Total 11%, Calcium--1.68%, Maximum water holding capacity--530.64%.

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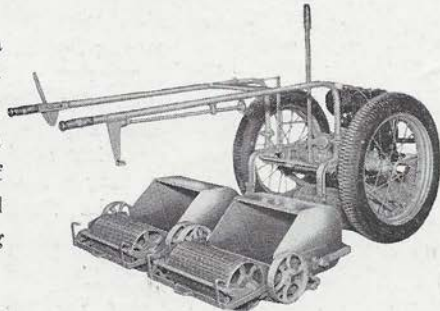
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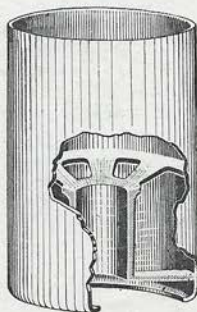
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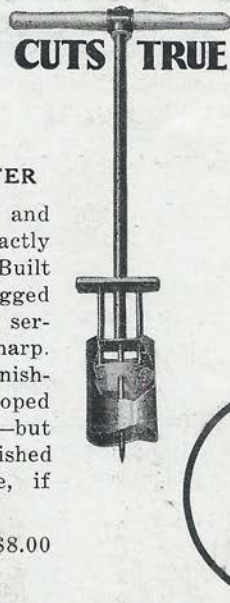
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