



# NEWS LETTER

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*"ART IS NOT A THING SEPARATE  
AND APART—ART IS ONLY THE  
BEST WAY OF DOING THINGS."*

— Elbert Hubbard

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**SEPTEMBER**

**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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September, 1936 Vol. 8, No. 9

### SEPTEMBER THOUGHTS

SEPTEMBER—the month when there are a thousand and one things to get done, but the weather is cooler, and growth is good, and some of the worries of the Summer are over—more play on many courses, and much less on the vacation spot courses—the price of mercury is higher—how much higher will it be this next season—possibility of other fungicides—one of our old timers at the last meeting in new guise, Robert Mitchell without the beard—glad to see Fitz and Barney out at Salem—we heard recently that the Hersey course in Penna, are changing over some of their greens to velvet, and have a large nursery—play from the blue markers—do you receive the new bulletin, "Turf Culture" from the U. S. G. A. Green Section—getting on that Fall fairway fertilizer—seeding and re-seeding—don't buy cheap seed—bring around that prospective new member from the course near you—Your Directors are now working on some fine plans for the advancement of greenkeeping and of your club—the best nine velvet greens we have seen this season were the first nine at Oak Hill, and best stolon greens we have seen this year were at the Country Club of Waterbury—we would like some of that sixty tons of Milorganite that the Newport (R. I.) Country Club is using this Fall—we believe that there is a thought for all of us in the following clipping:

#### The Origin of Dictators

With the downfall of the feudal system came the middle class, which has grown to be both in numbers and influence the most important factor in the social and political world of today. Gradually its limits have increased un-

til it has penetrated so deeply into the classes above and below it that there are almost grounds for the conclusion that both the other classes exist only in theory.

It is this class which has developed democracy—government with the consent of the governed—towards which there has been a constant tendency. Thus changes in governmental structure have come to take place at the will of the people. Whenever a movement gains sufficient impetus to sway the will of the majority it eventually becomes a controlling force.

In normal times when the interest of the majority appears to be clear, progressive results are obtained without great difficulty. In times of economic stress and political upheaval there is apt to occur a situation which brings about an abnormal solution.

When the road is not plain, when a multitude of opinions widely differing are offered on which no agreement can be reached or when no solution at all of the problem is forthcoming, then comes the possibility that one individual, dominating what may be but a small group, is placed in power. This power is due to chance, not qualifications, and comes through the inertia or lack of unity of thought among the other political elements.

It is a minority rule and to foster strength and to establish itself firmly, opposition is crushed by the harshest and most direct methods available. All kinds of punishment and violence are used to terrify any who refuse to support the new government. Fundamental rights of free speech, free action and even free thought are suspended. Power is centralized through means of force and propaganda. The individual is ruthlessly sacrificed for what is claimed to be the good of the community. The destinies of a nation fall into the hands of him who controls this group. Thus comes dictatorship.

—The Thread of Life.

Dr. J. A. DeFrance has been appointed Associate Agronomist at the Rhode Island Experiment Station to fill the vacancy left by Mr. H. F. A. North's resignation. Dr. DeFrance will have charge of the experiments in turf culture. He was formerly with the Department of Horticulture, Cornell University, and more recently with the Soil Conservation Service at Ithaca, N. Y.

## APPLYING CORROSIVE SUPLIMATE AND CALOMEL TO TURF

In the interval of ten years since the Green Section first developed the method of controlling turf diseases with corrosive sublimate and calomel, these chemicals have become the most used fungicides on turf. In that interval various methods of application have been tested and a few of the better have been recommended.

To be rated satisfactory, a method for applying chemicals to turf must provide for even distribution, rapid and economical use, as little interference as possible with play, and, above all, minimum danger to those who handle them.

The fungicides commonly used against turf diseases all contain mercury and are therefore dangerous. Corrosive sublimate is one of them with well known deadly possibilities if carelessly handled. Certain methods of application, particularly the dusting method, which seemed to present unnecessary hazards to workmen were from the first discouraged by the Green Section.

In spite of the fact that hundreds of thousands of applications of these extremely poisonous chemicals have been made on turf during the past ten years, we have yet to learn of a serious injury by them to any member of a greenkeeping staff. However, there have been some recent reports of poisoning cases which, although fortunately not serious, have nevertheless served to focus attention on the possibility of serious consequences of careless or improper methods of using chemicals.

The recent reports of poisoning have resulted from a modified dusting method. The breathing of fine dust of these poisons is to be avoided and any method that unnecessarily exposes workmen to mercury dust must be strongly condemned. Mercury poisoning is accumulative in the human system and therefore may be slow in its action. With ordinary care these mercury compounds may be used without danger.

The best methods for applying corrosive sublimate and other fungicides were described in detail in The Bulletin of the United States Golf Association Green Section, Vol 12, pp. 125-132. One of the methods there described is that of applying the chemical mixed in small quantities of sand or compost. This method has been gaining in popularity in recent years.

One of the principal objections to the latter method is that the chemicals tend to form lumps in the packages and considerable care is required in breaking them. Unless all lumps are reduced to powder there cannot be an even distribution of the chemical. A method used at Arlington to remove these lumps effectively was described in the Bulletin referred to above.

During the past two years an improvement has been made in this method. It provides for a much more nearly uniform distribution of the compound through the sand or compost carrier, saves time in preparation and greatly reduces the poison dust hazard.

This improved method consists of putting the corrosive sublimate into solution instead of breaking the lumps. The concentrated solution is then mixed through the sand or compost carrier, thereby coating each particle with a film of poisoned solution. This eliminates the dust of the old mixing method and prevents the escape of poisoned dust during application. The procedure is as follows:

### Preparing Stock Solution

Put two pounds of corrosive sublimate and one pound of table salt in a gallon bottle and fill with water. This may be shaken until the chemicals are dissolved or it can simply be allowed to stand for an hour or more until the corrosive sublimate is in solution. The salt is included as an aid to dissolving the corrosive sublimate.

Spread 64 quarts of dry, finely-sifted sand (finishing sand) in a thin layer on a cement floor or in a mortar box. Put the above gallon of solution in a watering can and sprinkle over the sand. Then with a circular motion stir the mixture with a rake until it is well mixed, which will be clearly indicated by the darkening due to the added water.

Larger quantities can be mixed in the same proportions, using earthenware or wooden containers for preparing the solution and for storing the poisoned sand. This mixture may be prepared on a rainy day or on other occasions when work is slack, and set aside to use as needed. It will not deteriorate noticeably even when left standing for several months.

Each quart of the above sand contains  $\frac{1}{2}$  ounce of corrosive sublimate. If one wishes to treat a green of 5,000 square feet at a rate of 1 ounce to 1,000 square feet, he simply takes from the

reserve stock a 10-quart bucket of the poisoned material and broadcasts it over the green. If the 10 quarts are considered insufficient for even coverage by the man who is assigned to the task, it is a simple matter to mix it with sufficient additional sand or fine compost to assure good coverage; or if preferred, the original quantity of sand in the stock mixture can be increased to meet the particular requirements of the distributor.

Mixtures of calomel with corrosive sublimate may be prepared in the same manner. The calomel will not go into solution but will remain in suspension. The mixture should be well shaken or stirred to make a milky fluid before adding it to the sand.

Much larger quantities of calomel than of corrosive sublimate may be added to the water, thereby providing a means for increasing the strength of the sand mixture if desired. The amount of corrosive sublimate should not greatly exceed 2 pounds to a gallon of water, especially if there are lumps or large crystals which will not dissolve in more concentrated solutions. Any excess of corrosive sublimate which fails to dissolve but which remains in the bottom of the bottle as a fine sediment will mix through the sand and be just as effective as when in solution, provided it is well shaken or stirred before pouring on the sand.

The advantages claimed for the sand or compost method of application are that no expensive equipment is required for applying it, less time is used than with some methods of liquid application, there is no need of spraying or other equipment and hose to interfere with play, distribution may be made by the simple process of hand broadcasting or by means of various seed and fertilizer distributors.

One of the principal disadvantages of the method has been the time required to break up lumpy material and get even distribution through the sand or other material used as carrier. The preparation of the stock solutions as above described completely eliminates the difficulty experienced in mixing lumpy corrosive sublimate. It also practically eliminates the breathing of dust of this poison during the process of mixing and spreading. During the short time required in handling the dry powder for weighing and placing it in the containers for solution, the workman can be further guarded by using a suitable mask or simply by tying a

moist towel across the nose and mouth. This precaution should be taken in handling any of the mercury fungicides and arsenate of lead as well.

In using the above method it is important to have on hand a good supply of dry, fine sand to be used in mixing. If the mixture proves to be too moist to distribute well, a larger quantity of dry sand may be used or the mixture may be permitted to dry out until the right consistency is reached. The effectiveness of the chemical will not be changed by such drying. The mixture may be kept moist in storage by covering the container tightly or by the occasional covering with wet burlap.

The preparation of stock solutions as above described will be found to offer many advantages in applying these fungicides with the liquid method also.

(Green Section's "Turf Culture," Vol. 1, No. 4.)

A comparatively recent development, in which the "wheelbarrow goes modern", by the replacement of the old style wheels with wheels tired with pneumatic tires, is of interest to every user of wheelbarrows. Equipment has gone rubber tired in many cases of late, and the wheelbarrow is no exception. A recently issued leaflet on this phase gives the following reasons why your wheelbarrows should be rubber tired:

1. Operation under conditions unsuited to old style wheelbarrows.
2. Perfect Balance—Easier, faster travel unhandicapped by soft soil or rough ground.
3. No cutting of carefully maintained turf of lawns, greens, etc.
4. Protects fragile materials against breakage due to shocks.
5. No trail of spills because shocks are absorbed.
6. Complete elimination of noise.
7. Less strain on arms and shoulders, consequently less fatigue.
8. Attitude of men toward work is improved.
9. Wider usefulness—Increased capacity—More work per hour.
10. Eliminates cost and effort of planking. Straight line travel.

## GOOD LAWNS

and

### Their Construction and Maintenance

There is an old saying among nursery-men "Don't plant a dollar bush in a fifty cent hole." This thought applies with equal force to lawns. Building for permanence, whether it be a home, a business or a lawn requires the use of good materials properly applied. There are three requisites for the successful production of a good lawn turf. All are of equal importance.

**FIRST. The Soil** should be capable of supporting a good lawn sod. We do not build a house on quicksand, for it will not remain and it makes no difference how well constructed the house may be, if it has no foundation it will be of no value. If your soil is poor—if it is the subsoil removed from the cellar, then it should be removed to a depth of at least six inches and good soil brought in. If however this is impossible, the present soil may be improved by thoroughly working in humus, or old well-rotted manure in liberal quantities. This organic material should be well dug in to a depth of five or six inches. Invariably soil that has remained dormant for any length of time or light sandy soil is too acid or sour to permit grass seeds to mature into good turf. Ordinary lime, either pulverized limestone (land lime) or hydrated lime should be applied evenly at the rate of 25 pounds per 1000 square feet. If landlime is used 38 pounds should be applied.

**Fertilizer.** Even the best topsoil will be benefited by the addition of a good grass plant food. Avoid fresh manure as it invariably contains weed seeds. Avoid also the general "cure-all" fertilizers. In feeding a turf we do not expect a bloom, neither do we expect any crop of ripened grain but instead a steady growth of luxuriant foliage is desired. Feed your lawn then with this objective in mind.

**The Seed Bed.** After thoroughly digging and preparing the soil it should be raked and all stones and rubbish removed. When a fairly good grade is established it should be rolled with a medium weight roller. (If a water roller is used, it should be about half full of water.) This will show up all of the

small depressions in the grade after which it should be raked over again to level it off. Now you are ready to sow the seed.

**SECOND. The Seed.** Do not expect the wrong kind of seed to produce the right kind of grass—even on good soil. Grasses, like animals, have distinct characteristics and capabilities. Beware of the mixture that depends on short lived grasses to give it a "quick start" for a **thick, lasting** turf is produced only by sowing a mixture of **true turf grasses** suited to your own soil and climatic conditions. Cheap varieties of seed such as Timothy and excessive quantities of Rye grass should be avoided, for while they make a clean mixture they will not produce either a good or permanent turf. Combinations of Kentucky Blue Grass (Canada Blue if the soil is sandy or of heavy clay) Chewings Fescue, and Colonial Bent, if desired, along with one or two nurse or quick growing grasses, such as Red Top and Rye Grass, properly proportioned makes an ideal seeding mixture for the average home lawn. On **SHADY LOCATIONS** a mixture of grass seeds with a large percentage of varieties actually

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.

adapted to growing in the shade should be sown. Trees invariably sap the fertility from the soil so that it should be fed more often than open areas. It may be necessary to reseed several times to get a good stand but patience and effort have their reward and it is possible to have a good lawn in the shade.

Use plenty of seed. Remember a thick sod is the best protection against weeds. Sow one pound to every 100 square feet if sowing broadcast. One half this quantity will suffice if a seeder is used. To insure even distribution, divide the seed in half and sow one lot at right angles to the first seeding thus insuring full coverage. Seed on a calm day or early in the morning when there is little wind in order that the seed will not blow onto your neighbor's property.

Grass seed should be covered lightly (An old adage says "eight times its own thickness") and then roll lightly. If the soil is light and sandy the roller may be somewhat heavier but if your soil is inclined to cake, roll just enough to hold the ground firm. Unless the ground is very dry, refrain from watering for a week or two and if watering is necessary be sure that it is in the form of a fine spray to prevent washing.

**THIRD.** Maintenance of turf is just as important as preparing the soil or selecting the seed.

When **watering** an established lawn it should be thorough in order that the water may soak down into the soil where the roots may benefit and where it will encourage deep-rooting. When light watering is done it only sinks in for perhaps  $\frac{1}{2}$  inch and the roots will seek this moisture and later may be harmed by excessive drought. A thorough watering on a good loam once each week is to be preferred to a light watering daily and you will find it much cheaper too.

**New seeding** should be thoroughly rolled before the first mowing. This presses the soil firmly around the tiny roots and they are less easily pulled out. The mower should be set to cut at least 1 inch high. The lawn will look just as nice and it will give the grass plants, whether they be young or old and established, a better chance of succeeding throughout the entire season. When you mow close you are working your grass and if you work your grass unnaturally you must use unnatural

methods to maintain it. A putting green is mowed close but it is also fertilized and topdressed at least once each month.

**Feed your lawn** at seasons of the year when the grass plants will benefit rather than the weeds. Do not apply fertilizers of any kind after May first and before September first except upon the advice of a good gardener or greenkeeper, for more damage than good will be done.

Thick grass is the best **WEED ELIMINATOR**. If your grass is well fed it should thicken up so as to occupy the whole area leaving no place for weeds to grow. Dig up and reseed any bare spots early and feed your lawn each spring and again in the fall if possible and you should enjoy good turf always.

(F. H. Woodruff & Sons Leaflet)

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## CLUB CHAMPIONSHIP

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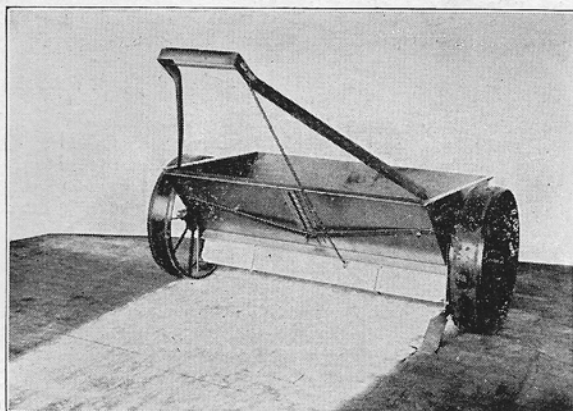
The annual club championship was won by Emil Masciocchi of the Oak Hill C. C., Fitchburg, Mass. at our September meeting, held at the Salem C. C., Peabody, Mass. on September 14th. Emil had little trouble winning the crown, as nearly everyone else had trouble with Jack Counsell's testing layout. His card was: 4-5-3-3-5-3-4-5-3-35, 5-4-3-4-4-6-4-4-5-39-74. 2nd gross was won by Walter Howe with 80. Net prizes were won by Howard Farrant, 94-21-73, and John Fitzpatrick, 90-16-74; Harold Mosher, 98-24-74; Guy West, 93-19-74.

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The September meeting of the R. I. Greenkeepers Association was held on September 21st at the Warwick C. C. Among those present was Dr. De France, now in charge of the experimental work at the R. I. State College. Dr. De France spoke briefly concerning his past experience in turf work in New York State. We believe that greenkeepers will find him a man with whom they can cooperate.

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## THE SPREADER YOU HAVE BEEN SEEKING



### SPECIFICATIONS

Hopper Capacity	..... 3 cubic ft.	Feed Roller only 3 in. above ground	
Width over all	..... 4 ft.	Graduated feed scale	
Width of spread	..... 36 in.	Net wgt. of machine	..... 125 lbs.
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Direct gear drive		Price (F.O.B. Cleveland)	..... \$59.50

Regardless of what kind of material you are using on your Golf Greens, Fairways, Lawns, etc., to obtain the desired results, the materials must be applied evenly in the recommended amounts.

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Its "Finger Touch Control" is positive control, eliminating the possibility of burn at the start and finish lines from excess fertilizer as left by most Spreaders.

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The ALL PURPOSE SPREADER is not just a few pieces of tin stuck together but is built for heavy duty with the precision of fine workmanship and has such features as triple roll agitation—no packing of material—full width feed—no clogging—accurate quantity control insuring proper application—and other excellent features.

The ALL PURPOSE SPREADER will handle the following materials with equal success, as well as any others of similar nature:—Grass Seeds, Fertilizer, Sulphate of Ammonia, Arsenate of Lead, Ground Lime, Bichloride of Mercury, Semesan, Barbak 211 & XX, Milorganite, Sand, Calomel, Calo-Clor, Humus, Nu-Green, Cottonseed Meal, Bone Meal, Vigoro, Mowrah Meal, Agrico and TOP DRESSING FOR GREENS, FAIRWAYS, LAWNS.

Note:—Will handle Moist Prepared Top Soil applying 350 lbs. per 1000 square ft. of material weighing 70 lbs. per cubic ft.

— S O L D B Y —

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## DISEASES OF GOLF GRASSES

(from a circular by R. H. Porter, issued  
by Iowa State College)

The most prevalent and destructive diseases of turf grasses in the northern states are (1) **brown patch**, (2) **snow mold** and (3) **scald**. Other troubles include leaf spot and winter injury.

### BROWN-PATCH

Brown patch has been known and recognized in eastern United States for many years and since bent grasses have been introduced into Iowa the disease has made its appearance in the state. There are two types, "Large brown-patch" and "Small brown-patch" or "dollar spot."

#### Symptoms

Large brown-patch occurs more generally in the southern section of the bent-grass area but may be found in the middle west. It appears suddenly as large discolored areas several feet across. In the morning the blades of the affected grass are black as if scalded and a white fungous growth of threads is found spreading over the grass. As soon as the sun's rays dry the grass the white growth disappears, the grass in the affected area shrivels and dies leaving a brown color. If the attack is not severe the stems and runners are not killed so that if favorable conditions for the grass return, the green color reappears. It is not uncommon to see green blades here and there showing prominently in the brown area. Frequently the fungous threads produce small black bodies called **sclerotia**.

Small patch is different from the large in that the affected areas seldom becomes larger than a silver dollar but all the grass in the spot is killed to the ground and the blades have a bleached appearance. Sometimes several spots of the small patch occur close enough together to form one large area which may be mistaken for large brown-patch.

#### Cause of Brown-Patch

The primary causes of both types of brown-patch are two species of fungi which live in the soil and under favorable conditions for their growth attack the roots and stems of susceptible grasses. There are numerous other

factors such as temperature, moisture, soil acidity and soil fertility which increase or retard the development of these diseases but it is important to recognize that organisms are primarily responsible for the trouble.

The cause of large brown-patch is **Rhizoctonia solani**, a fungous parasite which occurs commonly in soils that have never grown cultivated crops, especially in peat soils of Iowa. The organism causes a serious disease of potatoes, the symptoms of which are stem lesions, stem rot, reduced yield and black specks known as **sclerotio** on the surface of tubers. Because this organism is so widespread in Iowa soils it is to be expected that brown-patch would occur.

Small patch or dollar spot is caused by a species of **Rhizoctonia** distinct from the one causing large patch. The distribution of this species is not known.

### Influence of Environment on Brown-Patch

All forms of plant life are affected by variations in their environment, hence it is not surprising that numerous factors affect the development of the brown-patch organisms, because they are low forms of plant life.

#### a—Effect of Temperature and Moisture:

The fungous causing large brown-patch grows best at a high temperature (72-85° F.) but bent grasses are favored by moderate temperatures. Furthermore the fungus requires more moisture than bent grasses so that high temperature and high soil and air moisture would give the fungus a decided advantage over its host. However, a high temperature with low soil and air moisture would tend to check the development of the disease. Hot weather, heavy dews and cloudy weather are decidedly favorable to the development of brown-patch. Conversely, cool weather accompanied by abundant sunshine distinctly favor the grass provided the soil is well supplied with moisture. The important thing to realize is that several factors affect both the grass and the fungus and that sometimes the balance is in favor of one, sometimes the other. Lack of water, while unfavorable to brown-patch may so weaken the grass that it cannot withstand a later attack.





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### b—Effect of Soil Reaction:

There is considerable evidence that if soils growing bent grasses become too acid brown-patch is more likely to develop. Experiments show that even when fertility is properly balanced an application of hydrated lime to sweeten the soil may check or prevent an attack of the disease. It should not be assumed, however, that lime alone will control brown-patch but that its lack may often provide favorable conditions for the disease.

### c—Effect of Fertilizers:

Most turf grasses require plenty of readily available fertilizers but the plant food elements must be balanced. If only sulfate of ammonia is used and no phosphorus the plant food supply becomes unbalanced and the plants become more susceptible to attack by disease organisms. Furthermore the ammonium sulfate tends to increase the soil acidity which further increases the susceptibility of the bent grasses, at least to the brown-patch organisms. Too high a supply of nitrogen and high soil acidity, combined afford excellent conditions for brown-patch.

### Control of Brown-Patch

It is evident from the foregoing discussion that no one method of control is adequate. The greenskeeper must study his local conditions and knowing the factors to observe, apply the methods necessary. If in doubt a simple experiment on a small scale is desirable and may save time and money. The various control measures are as follows:

#### a—Cultural Methods:

Under cultural methods are included such things as drainage and location of greens to permit free circulation of air. Poor drainage will provide conditions unfavorable for the turf grass, but favorable for brown-patch fungi. Poor drainage does not always occur in low spots but may frequently be encountered on a hillside. Observation after watering or following a heavy rain will reveal defects in drainage.

Free circulation of air encourages evaporation of moisture collected by dew thus reducing the length of time the fungus may be benefitted. A north slope will not usually dry as rapidly as a south slope. It is important to reduce the period that moisture remains on the

grass to a minimum. Sheltered greens remain wet hence greens should be placed to get the maximum circulation of air so as to encourage evaporation. Thick brush on one or more sides of a green help to hold moisture.

### b—Use of Lime and Fertilizers:

If the soil of greens is low in nitrogen and phosphorus, the grass will not grow well hence it is often necessary to use top dressings of compost, ammonium sulfate or nitrate of soda and superphosphate. It is easy to create an unbalanced condition by an over-supply of nitrogen which makes the growth soft and tender and more susceptible to brown-patch. Excessive use of ammonium sulfate also increases soil acidity. Under such conditions lime should be applied until the sour condition is corrected. Not over 25 pounds of hydrated lime per 1,000 square feet should be used at any one time. The need of fertilizers and lime is also determined by the character of the soil prior to the establishment of a green. If rich in organic matter the physical condition will usually be good and nitrogen will be available. Each green must be studied and treated according to its needs.

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We understand that the next meeting will be another greenkeeper-green chairman best ball tournament at the Charles River C. C., on October 5th. Watch for the notice!

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“The best is not necessarily the most expensive—nor is the cheapest always the most economical.”

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“The memory of quality remains, long after the price is forgotten.”

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Dot: “Give me a sentence with the word ‘bewitches’.”

Dash: “Go ahead—I’ll bewitches in a minute.”

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Auto owner: “What are you using for gas now?”

Indisposed: “Same as always—bicarbonate of soda.”

---

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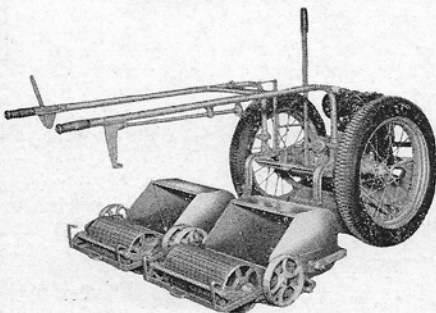
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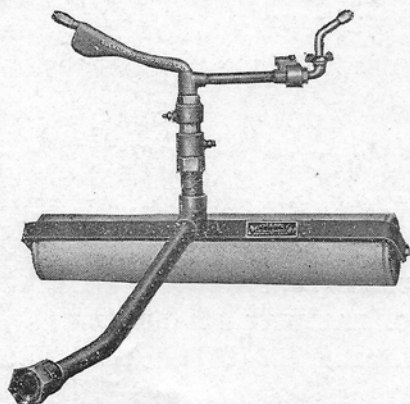
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No. 6A Junior, 80 to 110 feet coverage. Item No. 77 Mounted on roller stand with 3-4 inch or 1 inch hose connections . . . . .15.00

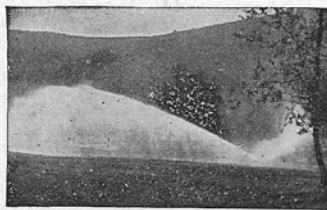
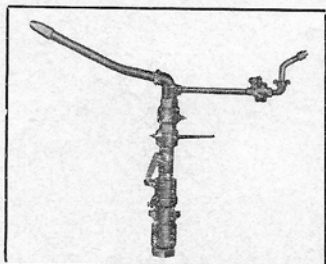
No. 6A Standard, 100 to 140 feet coverage. Item No. 79 Mounted on roller stand with 3-4 inch or 1 inch hose connections . . . . .18.00

No. 6A Oversize, 130 to 160 feet coverage. Item No. 81 Mounted on roller stand with 1 inch, 1 1-4 inch or 1 1-2 inch hose connections . . . . .23.00

## Quick - Coupling Irrigation Systems

Fairway Hoseless Assembly;  
Sprinkler, Coupler and  
Valve.

Fool-proof. Easy to use.



This system employs the use of quick-coupling valves and portable sprinklers. These sprinklers are moved from place to place at the will of the operator. No hose is necessary as the long throw of the sprinkler reaches out and covers the area that ordinarily requires hose to convey the water such distances.

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