



# NEWS LETTER

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*RECENT TURF EXPERIMENTS IN NEW JERSEY*

*DEPRESSION MAINTENANCE*

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**APRIL**

**1933**

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

GUY C. WEST ..... Editor  
312 Mt. Pleasant St., Fall River, Mass.  
HOWARD D. FARRANT Business Mgr.  
132 Russert Rd., West Roxbury, Mass.

April, 1933

Vol. 5, No. 4

### THE FUTURE OF GOOD WILL

In the universal competition for survival and increase, what chance has good will? In the long run it has every chance. Good will, like all ethical action, is best in the light of its total consequences.

A man may sometimes profit by selfishness and greed, but if his neighbors have the same policy, internal dissensions will weaken that social group. It will lose ground before a society made up of men of good will who give their united strength to the common good. The men of ill will ultimately will fail, along with the society they have weakened. A community is strongest only when men of good will greatly predominate, and thereupon they will undertake the complete elimination of ill will and greed as a needless social waste.

This picture, while greatly over-simplified, is true and representative for the long run. Good will toward men is not a quixotic dream. It is the rule of economy, effectiveness, and power, and fate fights for it.

### THE NEW COMPETITION

The old law of growth, expansion, and competition will not be annulled. Energy of increasing life forever seeks expression. But the nature of the contest will change. With increasing wisdom, men will more clearly distinguish friend from foe.

Men will fight against ignorance, disease, and poverty, and not against each other. They will combat selfishness, privilege, greed, and hate. They will free themselves from the constant pressure of blind increase of population. They will war against crime, feeble-mindedness, and insanity. They will attack every blight of inheritance and en-

vironment. Superstition, prejudice, and credulity will be overcome.

Men of the future will look back at the present as a time of civil strife, when brother fought brother, while both were vulnerable to the common enemy; but also as a beginning of rebellion against this stupidity, and as a period of transition from the old age to the new.

ARTHUR E. MORGAN,  
(Pres. of Antioch College)

### RECENT TURF EXPERIMENTS IN NEW JERSEY

By Howard B. Sprague

(Abstract of Address Before the New England Greenkeepers Association)  
April 3, 1933

#### Root Studies

Root studies conducted at the New Jersey Agricultural Experiment Station indicate that at least half of the root systems of turf grasses are regenerated each year during the spring months. The ability of such species as Kentucky bluegrass to develop early top growth, is the result of the formation of roots at comparatively low soil temperatures, which permits early absorption of water and nutrients. The minimum temperature at which root growth begins is peculiar to each species, but may be modified by soil conditions, rich soils encouraging earlier growth than poor soils. Since a large part of the root system of grasses is formed in spring, conditions that are unfavorable to extensive development and occupation of the soil at this period will affect the growth of the turf plants for the rest of the season.

Poor drainage, excessive amounts of soluble nitrogenous fertilizers and puddled soil structure are now known to limit root penetration. Data were presented to show the effect of close mowing on root development. Regular mowing at a length of 1 inch did not restrict root development of Kentucky blue grass, whereas similar treatment adversely affected the root system of redtop. Although Colonial bent, creeping bent and velvet bent are tolerant of close mowing, the quantity and depth of roots in these species was considerably reduced under regular clipping at  $\frac{1}{4}$  inch as compared with mowing at a  $\frac{7}{8}$  inch length. The greatest difference in root occupation of soil produced by

the height of cutting occurred below the 4th inch, with putting green turf making scant use of the soil below this depth.

#### Water Absorption By Turf Soils

Investigations in New Jersey on the response of turf grasses to soil conditions, indicated that soil acidity greater than that represented by a pH. 5. 5, prevented decay of grass roots which normally die each year. The combined effect of high soil acidity and accumulated dead roots produces the so-called "sod-bound" condition of turf. On sod-bound areas the entrance of water is greatly retarded, and such areas therefore suffer chronically from drought even in periods of normal rainfall.

Field plots with a pH. of 5.3 or lower required 6 to 8 times as long a period for absorption of a unit volume of water as adjoining plots with mild soil acidity. As a result of slow absorption and large run-off losses of water, the acid plots suffered greatly from drought. Excessive acidity in these tests was produced by the regular use of such materials as sulfate of ammonia, ammonios, urea, and sulfur.

Spike discing of impervious turf was exceedingly difficult because of its low soil moisture content, and required long soaking before the treatment could be made effective. Although spike discing temporarily increased the permeability of sod-bound turf, liming is regarded as a more certain and satisfactory method of overcoming the harmful properties of such soils. Since the injurious effects are primarily associated with the soil, the use of acid tolerant grasses will not eliminate the difficulty.

#### Toxic Effects of Ammonia Nitrogen

In both field plot tests and carefully controlled greenhouse experiments, ammonia nitrogen proved to be actually toxic to bent grass in the presence of strong acidity. On the contrary, nitrate nitrogen was an entirely satisfactory form of nitrogen for the growth of bent turf under acid conditions. With mild acidity, little or no direct injury to Colonial bent could be detected from the use of sulfate of ammonia in moderate amounts. There appeared to be far less danger of poisoning from heavy applications of nitrate of soda than from sulfate of ammonia, particularly on acid soils.

These experiments are not interpreted as meaning that sulfate of am-

monia is unsuitable for fertilizing turf, but rather that it must be used carefully. The application of limited amounts of this fertilizer, at fairly frequent intervals should be entirely satisfactory on putting greens, provided the development of strong soil acidity is avoided. Although heavy feeding with any soluble nitrogen fertilizer tends to produce a soft tender growth and restrict root development, the unlimited use of sulfate of ammonia is more apt to prove disastrous than similar applications of nitrate fertilizer.

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#### DEPRESSION MAINTAINENCE

(Paper presented by Guy C. West at Braeburn Meeting, Feb. 27th)

Fourteen years ago, Golf in this country began to increase in popularity, and each year since that time a greater number of people have taken up the game. To provide for this increasing number of golfers, new golf courses were constructed, and old courses remodelled. Golfers began to demand better playing conditions, and large sums of money were spent annually in maintaining these golf courses in satisfactory condition. To produce the desired results, greens committees engaged men trained in the work to supervise these expensive golf courses. With the additional amount of money at their disposal, greenkeepers and others interested in turf culture introduced finer playing conditions than had ever been obtained before. Fine and highly cultivated grasses came, bringing new problems and diseases, which required much thought and expense. New machinery was made available, which made it possible to groom the courses better than ever before. We all have noticed this upward trend, and must keep it in mind during this discussion, for the golfers have been educated thru this period to a high standard of maintainence.

We can all realize that there is little comparison between the conditions of the golf courses of today and those of fifteen years ago. It is probably true that some money was wasted in the past, but even before this present Depression, an economy program had struck golf course maintainence at most clubs. We believe that greenkeepers anticipated before anyone else the necessity for getting golf course maintainence costs as low as was consistent with



the resources and demands of their individual clubs. The greenkeeper has always been accustomed to close supervision of the expenses on the golf course, and has invited it; but, we advise as close supervision of other departments of the club.

In this discussion we are mainly interested in the golf course, but it must be remembered that the average greenkeeper has under his supervision other game areas, the club house grounds with its lawns, shrubbery, trees, roads, walks, etc., and often other work. In many clubs the budget is not presented as a golf course maintenance budget, but rather as a Grounds Budget, and the greenkeeper must maintain these other areas as well as the golf course out of this budget. However, in most country clubs here in New England the golf course is by far the most important item in such a budget.

In this discussion it is our intention not only to suggest certain ways to save, but also to point out certain points where it will be wise to proceed with care unless there are to be costly results.

There are various angles to the subject of golf course costs. One angle is to divide the costs into labor, and supplies and equipment. Probably from 75-85% of the average golf course budget is for labor.

Let us consider this human factor which we call labor. Usually we feel that labor is a fairly cheap commodity, easily replaced. We agree that labor has been a cheap commodity. Golf course labor has not enjoyed the inflated wages of the past few years and yet is not common labor. The experienced man on a golf course is skilled to a high degree in certain specialties peculiar to his work, and in general he is versatile, adaptable, and willing to a surprising degree. This is decidedly out of the ordinary when we realize that his wage has been no more, and often less, than a ditch digger, and his wage earning period in any one year is considerably less than twelve full months. Probably nine working months out of a possible twelve is putting the employed period quite high, and yet we expect him to return year after year with no extra inducements for loyalty, faithfulness, and high value to the continued economical maintenance of any golf course.

Where too little wages are paid, the men working on the course do not return each year, and each year brings

its quota of men to train to golf course work. The necessity of training a new crew each year is reflected in the condition of the course. There is always the fact to face that a workman ignorant of golf course conditions may ruin an expensive green, mishandle equipment, and he is sure to waste much time. No business can be conducted successfully by men who know little or nothing about it. To keep the same men year after year, providing they are good workmen, is sound economy.

When we talk of making major savings thru wage reduction are we not planning questionable economies? A wage cut which is very appreciable to the individual is so small when set up against total cost as to be hardly appreciable, and yet this individual cut is very liable to have a very decided bearing on the morale. We feel that when wage cuts must be put into effect, careful thought must be given to the cuts, and a careful scaling down of all employees in proportion to their total yearly earnings and perquisites shall be set up, and not as is the custom, an arbitrary cut.

It is often possible to keep the majority of the workmen year after year by finding them work during the winter months at some club member's business. If there is work at the club during the winter months with winter sports, etc., a stagger plan, or working the men three or four days a week, so that each will get some work, will often prove successful.

The number of men employed on an average 18 hole golf course has decreased steadily the last few years. At the Amherst Conference in 1930 the sentiment was that twelve men were necessary, but the following year this number had dropped to ten. This past season many courses were maintained with a less number. To reduce further in many cases is impossible.

The purchase of all supplies and equipment should be governed by the need; only those items actually needed should be bought. It is sound economy to buy standard, tested products. Cut prices are usually an indication that someone wishes to unload quickly, often do not denote quality nor economy. It is the knowing of **how**, **when**, and **where** to buy that saves the money. In this connection, we believe that any greenkeeper worthy of the name is vitally interested in producing the very best possible results from the money spent. In other words he is more



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anxious than any other employee or any member of a club in making each dollar spent return 100 cents of value. We therefore feel that it is an imposition on his rights, as well as being inefficient, to take from him all authority to exercise his judgement in the purchase of supplies and equipment. It is not absolutely necessary that he be allowed to place the orders, but no purchase of supplies or equipment should be made without getting his opinion, and this opinion should have very great weight. We condemn the policy of any club official or member exerting influence on a Greenkeeper to secure the purchase of a particular piece of equipment or to favor any one particular firm. We believe that a club will benefit if the responsibility of purchasing is put squarely on the shoulders of its greenkeeper, and we do not hesitate to say that when such a responsibility is placed, time will prove that confidence of the club has not been misplaced.

One of the largest items of expense is often fertilizer. To attempt to cut drastically in the amount spent for fertilizer is often very unwise. The prices of various fertilizing materials are low at this time and most clubs can buy their requirements at a low cost as compared to a few years ago. The question of how far can fertilizer be eliminated from the budget depends entirely upon the individual club, its soil, its past fertilizing program, whether fertilizer was used last year or not, and if so, what kind. It is difficult to keep good greens without fertilizer. Fairways which have been fed regularly may be skipped; they will not improve, but will not suffer greatly if we are fortunate enough to get a wet season.

The item of equipment is of major importance in the maintenance of a golf course. Many club officials are in favor of trying to make worn-out or nearly worn-out equipment last another season. This policy is usually disastrous, for if the equipment gives out in the middle of the season, the delay may prove very expensive. Then too, the repair bill on this type of equipment may be very excessive. It does not pay to try to keep costs down with worn-out equipment when wisdom calls for replacement.

The keeping of all equipment in repair is absolutely necessary for economy of operation. The repairs may be made at the club shop or at a recognized service station; this is a point for the indi-

vidual club to decide. However, all equipment must be kept in efficient repair.

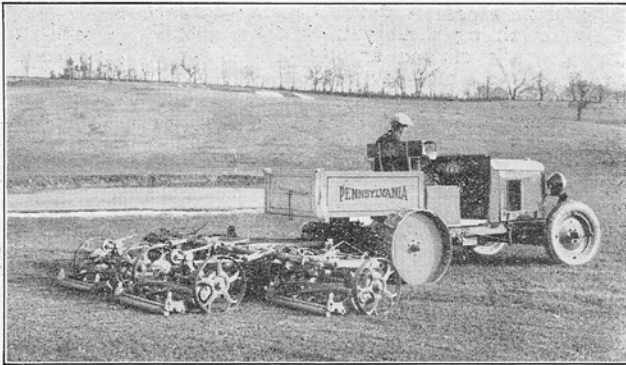
Labor saving machinery, so-called, will save money in some instances. Power mowers are often useful for mowing tees, and around greens. On the greens, they are still an unknown quantity. The rapidity of the cutting may be proved, but the cumulative effects to the turf by the weight, continuous pounding, slipping, etc. may tell a different story in a few years. The question to consider seems to be—is the lower labor cost sufficient justification for their use?

It might be well for us to consider another angle. Given a good layout, what constitutes a good golf course? Briefly, **greens** without blemish, weed free, disease free, grub free, worm free, ant free, free from ball marks, the grass being of fine texture, without nap, with a true surface on which the ball runs smoothly without deviation into a well-set cup; **tees** which are level, with a continuous surface of grass, not slippery; **fairways** with a continuous grass surface, free from divots, on which wherever the ball lands, the golfer obtains a good lie; **traps** with a good depth of sand, free from foot prints, banks free from holes; **rough** well kept so that a ball can be easily found, but hard enough to penalize a poor shot. These, with sufficient equipment, kept in repair, a well trained crew of men, fertilizer, seed, chemicals, etc. in sufficient quantity, and a greenkeeper who knows his job, and the total result gives a course where the golfers are **almost** satisfied.

It might be well here to point out that weather conditions greatly affect the cost of operating. The greenkeeper grows grass under unnatural conditions. Close cut greens, where the shortness of cut leaves very little leaf surface to support plant growth, the removal of clippings and corresponding plant food loss, the soft green demanded by golfers, and the necessity for constant watering are not conducive to natural vigorous growth, and necessitate careful handling to prevent root rot, brown-patch, scald, leaf spot, and other troubles. A wet hot summer means an extra outlay of money for chemicals and labor to control disease. On the other hand a cool dry summer means a saving. 1932 was such a year. In wet years the constant tramping of feet

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packs the soil more, stifling the grass. If the greenkeeper could control the water supply which falls on his course, many of his difficulties would be eliminated.

In the various items of work done on the golf course there are certain methods by which some savings may be made when necessary. The first method is to entirely eliminate all new construction; be satisfied with maintaining what you have. Some greens are oversized anyway, and there is a possible saving there by cutting their size. Similarly, fairways may be narrowed at some points, less rough cut, traps raked less often, greens mowed four times a week instead of daily, and similar savings.

All operations on the golf course come under one of two headings, routine work, or what is variously called "tinkering", "puttering", "nursing", or "housekeeping". Tinkering includes the hundred and one items done on the golf course which when done make a good course very good. Professor Lawrence Dickinson of the Mass. State College has said, "Routine operations on most golf courses represent the bare necessities of golf course maintenance. Whether the management is good or bad, they consume an almost uniform number of labor hours each week or day. Routine work seldom considers its influence on the turf next week, next month, or next year. Today is all importance". The puttering or tinkering operations are the things done which use much time and which do not appear necessary to the untrained. In addition to the real nursing operations necessary because the grass is growing in such an unnatural condition, there are countless other items which help to give the players pleasure in their play. Probably the tinkering on a well kept course takes 15 to 20% of the labor cost.

This brings up the question of what constitutes pleasure on a golf course. This is probably a subject for endless controversy, but we offer for your approval that good turf alone is not sufficient. It is the little things which have been done, coupled with the good turf, which give the golfer pleasure. For example, a player is to try a strange course. As he starts at the first tee, he wishes to wash a couple of balls, but finds the ball washer dry, and a dirty towel. Is his first impression of the course good? No, and he hasn't used the turf at all yet. As he tees up, he notices that there is only one marker, the other lies off to one side broken,

the one remaining dirty and chipped. As he comes to the first green, he sees the flag, a bleached torn rag hung there on a dirty stick. Playing further he overplays one green to land in an old pile of grass clippings. He sees around every tee the accumulation of weeks of discarded cigarette packages, etc. The traps are unraked, the cups need changing. At the end of this round, is this player satisfied, has he had pleasure? Possibly, if all he sought were fresh air and sunshine, or possibly if he won all his bets; but, not as much as if these faults had not been so apparent. The impressions the player gets from the little things are important in giving him pleasure, as well as the quality of the turf. It is important to remember that cutting the number of the workmen too drastically, or attempting to use "labor-saving machinery" too much, will cause these little things to be left undone, and the impressions will suffer.

In the consideration of any method to save costs the determining factor should be whether the method will hurt the turf in the future. We know that it is impossible to let a course go absolutely, and then attempt to bring it back. Anyone who doubts this should look at the Ocean Links at Newport, which has been allowed to grow unmolested these past two seasons. Every method used to save should be as consistent as possible with good greenkeeping practices.

It will not be economy to attempt to cut too drastically the turf nurseries or the preparation of compost. In the event of trouble on the turf of the golf course, the nursery is of great value. Good compost will to some extent take the place of fertilizer, but nothing will take the place of good compost.

In any consideration of savings, the knowledge of what has been spent in preceding years is of help, and so we recommend the keeping of cost records. Many greenkeepers have kept accurate cost records for many years, and these greenkeepers can better tell when and where to suggest savings than can a greenkeeper who has no records of past costs.

In trying to find methods by which savings can be made, greenkeepers should endeavor to keep in touch with their fellows, and should follow all new thoughts that are developed by the Green Section, the various Experiment Stations, and elsewhere. Meetings such as this are of importance in helping greenkeepers and club officials to better

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understand their problems, to better suggest ways to save.

In conclusion, let us recommend as the best source of saving that any club possesses, its greenkeeper's fund of knowledge. Any good greenkeeper will save much by careful planning of his labor, careful buying of his supplies, and careful handling of his equipment. The best economy is to have a good greenkeeper and to make the most of his advice. Furthermore, a club which has not only a good greenkeeper, but also a green chairman who is really interested in the course and its problems, who will cooperate with the greenkeeper in all his efforts, and who will stand before the Directors of his club and tell them the needs of the course, that economy for the course means economy for all departments,—such a club is probably operating at low cost already, but such a club can usually find further ways to save without drastically curtailing the pleasure which the players get on its course.

#### FORMS OF LIME

(from a lecture by Dr. Odland at R. I. Short Course)

Lime may be bought in three forms: ground limestone, hydrated lime, and burned lime.

**Ground limestone**, as the name implies, consists of the pulverized natural limestone. Its effectiveness will depend largely on the fineness to which it is ground. A good grade of limestone should be fine enough so that at least 50% will pass thru a 100 mesh sieve.

**Burned lime** is limestone that has been reduced to the oxide form (CaO) by burning. It is also called "lump lime." Lump lime may be ground before being placed on the market. 100 pounds of limestone will make 56 pounds of burned lime. Burned lime is very caustic and difficult to handle on that account.

**Hydrated lime** is burned lime that has been slacked by adding about 18 pounds of water to 56 pounds of lump lime. The 56 pounds of burned lime thus makes 74 pounds of hydrated lime. Hydrated lime is caustic but to a less extent than burned lime.

#### Value of Different Forms of Lime

Experiments have shown that different forms of lime are about equally effective in correcting soil acidity if applied in equal neutralizing units. In other words 56 pounds of burned lime

or 74 pounds of hydrated lime may be expected to give about the same results as 100 pounds of ground limestone. Burned lime should not be used on turf, however, because of the danger of burning the grass. Hydrated lime has to be used with care for the same reason. It may be used safely during the cool weather of early spring or late fall. Ground limestone can be used at any time with perfect safety.

From Dr. T. E. Odland of the Rhode Island Experiment Station comes the information that the annual Field Day for Greenkeepers will be held this year on May 22nd. The program is similar to last year's with a trip to the experimental plots, lunch followed by talks and discussion, and an exhibit and demonstration of small equipment, such as lawn and putting green mowers, sprinklers, etc. Kingston should be the centre of your activity on May 22nd!

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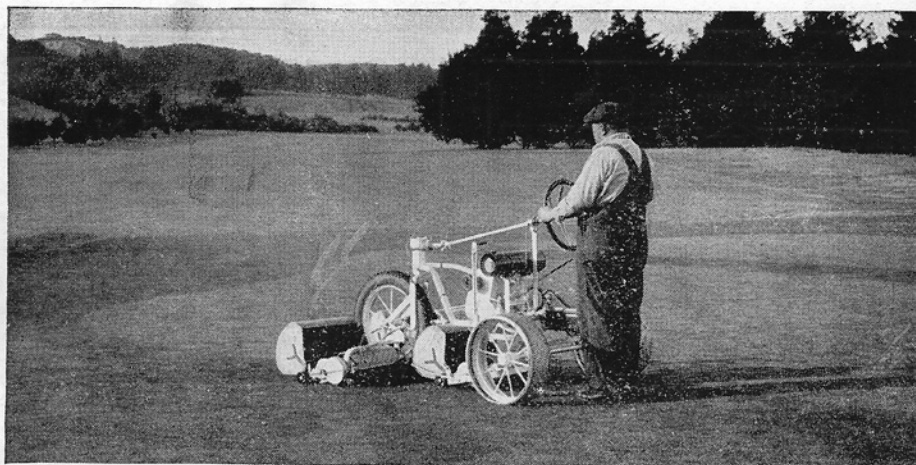
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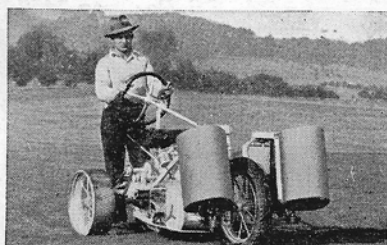
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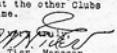
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Gentlemen:-

During the past three (3) months I have had on trial at The Olympic Club at Lakeside a Toro Power Gang Putting Mower. This machine has been given an extensive trial and has been used under all conditions, both normal and wet greens, and have found it to be perfectly satisfactory and certainly a great savings in green cutting expense, - and example of this is as follows. Our No. 18 Green on the Ocean Course has an approximate area of 2500 square feet and this was cut in fifteen minutes, whereas, it would have originally taken one hour cutting it by a hand green mower.

Personally, I am more than grateful to Mr. Bishop for the time and interest shown to prove the amount of time and labor that it would save. In fact, its performance has been so good that I am making arrangements to purchase three (3) more in the near future and by doing this I will save approximately \$300.00 per month in labor on the twin courses.

Also, I have discussed with several of the Clubs in the Bay area the possibility of their installing this equipment, and have advised Mr. Bishop that I will be more than pleased to cooperate with any of the Green Committees at the other Clubs in giving a demonstration at any time.

Yours truly,  
  
 W. H. Starr, Manager,  
 The Olympic Club at Lakeside