

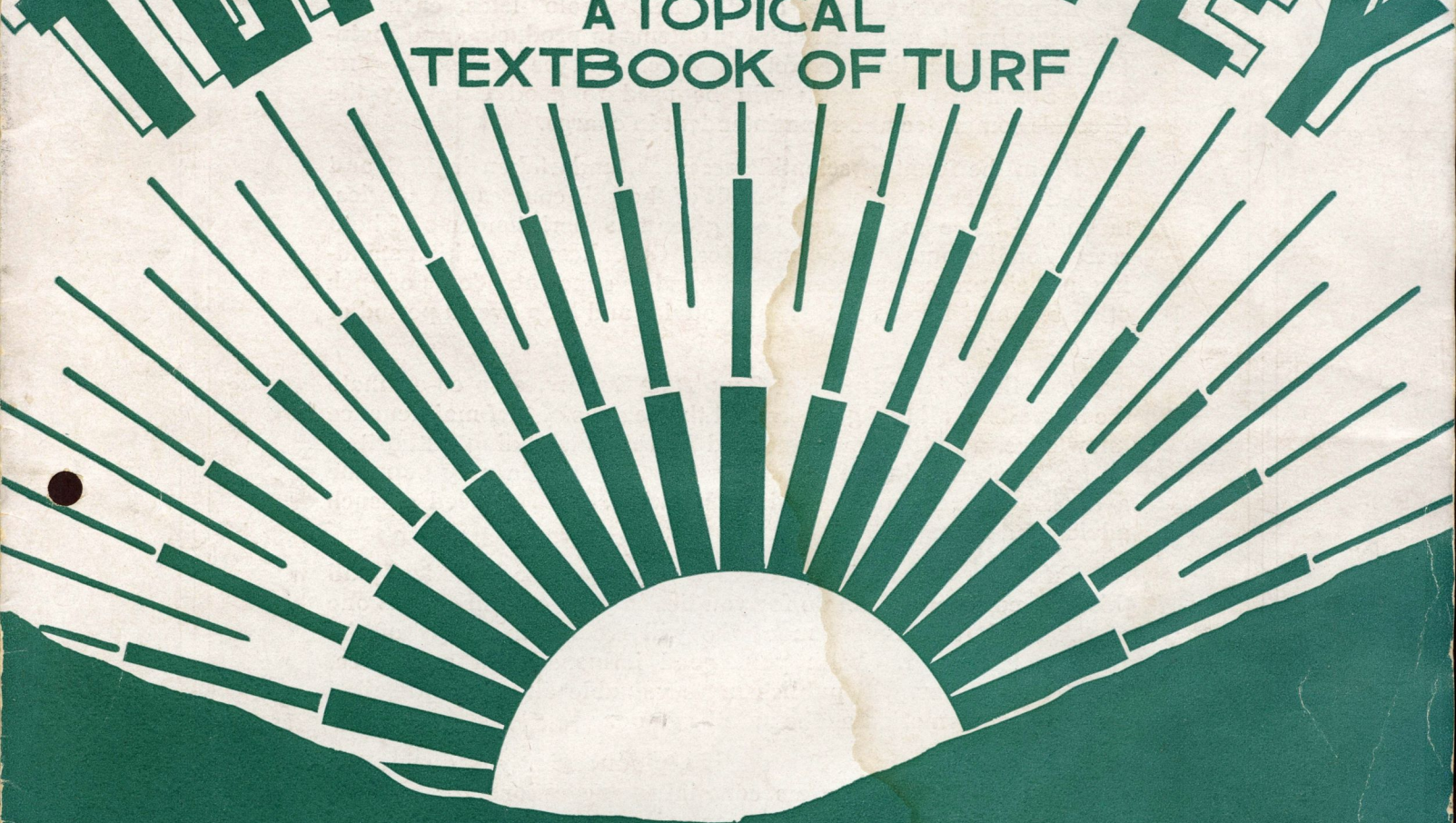
VOLUME I  
NUMBER 1

FEBRUARY  
1936

*The*

# TURF SURVEY

A TOPICAL  
TEXTBOOK OF TURF



**GOLF COURSES      AIRPORTS**  
**POLO FIELDS      CEMETERIES**  
**ATHLETIC      FIELDS**  
**PARKS      LAWNS      ESTATES**

A MONTHLY MAGAZINE DEVOTED TO THE INTERESTS  
- OF ALL TURF GROWERS IN THE -  
- UNITED STATES AND CANADA -

## A Message to Turf Growers in General



**T**HE excellence of the turf grown on recreational grounds of all kinds is one of the most important factors in drawing and holding public patronage.

Airport landing fields, athletic fields, polo fields, each and every one has its own particular problems in producing and maintaining turf, and the instructions which will be printed in THE TURF SURVEY every month will be used to good effect by the Grounds committee and superintendent in charge.

From the fount of scientific research, undertaken in 1921 and carried on ever since for the benefit of the golf courses of America, much assistance has already been given to superintendents of both recreational grounds and cemeteries. Greenkeepers of high standing in their profession have contributed to superintendents of such other and allied areas of turf their advice and help over a period of many years.

It is the chief purpose of THE TURF SURVEY to so co-ordinate the interests of all turf growers that the benefits of turf maintenance knowledge, acquired and practiced by the outstanding authorities on turf problems in the United States and Canada may be made available to every man growing turf who stands in need of such advice and help.

THE TURF SURVEY is consecrated to your cause. Practically all this new publication can do for you lies in your own hands, as one of the 3,000 turf-minded men who will receive this copy of the Inaugural number. With your good influence and assistance, THE TURF SURVEY will publish more valuable and more detailed articles of information as the months go on.

This is distinctly your magazine, planned for you during the entire year of 1935. Letters containing suggestions for articles, questions for the Turforum section, offers to contribute personal experiences in growing the various types of turf grasses in all localities throughout America—in fact, educational material on every subject of turf growing and subjects allied to turf production will have the most careful attention in the office of THE TURF SURVEY. Golf course, park, athletic field and cemetery drainage problems are of increasing interest from year to year. So is construction in all its phases, cement work, growing blooms suitable for use as cut flowers, the planting and care of trees and shrubbery, and landscaping.

THE TURF SURVEY extends to you the hand of friendship, keen interest and full co-operation. Will you extend yours to meet it?



# THE TURF SURVEY

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**Volume I**

**FEBRUARY, 1936**

**Number 1**

## TURNING THE CLOCK BOTH WAYS

**S**OUND progress in any venture is based upon selecting those experiences from the past which tend to make activities of the future more beneficial to one and all concerned.

In presenting THE TURF SURVEY as a monthly educational medium for all turf growers in the United States and Canada, it is well to first turn the clock back to 1921, the year in which the demands of golf club members for more perfect playing surfaces were met by the United States Golf Association in establishing the Green Section at Washington, D. C. With Dr. C. V. Piper as Chairman, Dr. R. A. Oakley as Vice-Chairman, and Professor Lyman Carrier assisting, the first organization for turf research got under way, aided by numbers of interested amateur turf growers, chairmen of Green committees and greenkeepers throughout the country.

For a number of years Dr. Piper and Dr. Oakley carried the torch for the Green Section, which under their management and due to their unflagging efforts, made rapid and steady progress in solving the difficulties encountered by member clubs all over America. On February 11, 1926, Dr. Piper passed away, and in 1928 Dr. John Monteith, Jr., plant pathologist and agronomist of exceptional ability, became the active head of the national bureau, as Dr. Oakley's health, never robust, was then failing. With Dr. Oakley's passing, on August 6, 1931, at Monrovia, California, the torch of scientific investigation was placed in Dr. Monteith's hands, hands which have held it steady and kept it alight during the most difficult years ever known in this country and all over the world.

One of the most valuable and far-reaching services of the Green Section was the bulletin, issued monthly to member clubs, and covering reports of the progress made in the various phases of research conducted at the Arlington Turf Gardens and with the co-operation of chairmen of Green committees and greenkeepers deeply interested in the work. In 1933 it was found necessary to discontinue the publication of the monthly bulletin, and from then on such service as has been possible to render has

been carried on by Dr. Monteith by correspondence in answer to inquiries.

With this Inaugural number of THE TURF SURVEY, a section called The Turforum carries a number of the questions which have been asked the Green Section by member clubs in many localities, together with the replies mailed to each. It is the belief of the editor of THE TURF SURVEY that such inquiries outlining turf growing problems, as answered by the Green Section office, embody for the readers of this magazine a service which is second to none available to turf growers at the present time. It is expected that The Turforum will continue to be a regular monthly feature, together with such other material as the limited personnel in the office of the Green Section permits.

The sun over the turf world, with the good help of readers of this "magazine with a mission," will remain in the rising position as long as THE TURF SURVEY is published. Those among you who have knowledge to contribute to others; those among you who need the help other readers can give you—all are cordially invited to communicate with the office of THE TURF SURVEY. Write and specify what you would like to read in the pages of this new service magazine. If you do not find what you are looking for in any number, ask for it, and it shall be given unto you as soon as humanly possible.

Fraternal organizations are founded on by-laws, aims and objects to which each member subscribes. THE TURF SURVEY is founded upon a background of experience which of itself demands the strict observance of such aims and objects as are ordinarily part and parcel of associated endeavors of a fraternal nature. The keynote of all such movements is that which, in relation to the program undertaken by THE TURF SURVEY must be printed in capital letters, SERVICE.

To readers and advertisers alike this publication extends the hand of good-fellowship, with the assurance that this, the Inaugural number, presages a more complete coalition of the many interests embraced by turf growth and maintenance than has ever before been known.

**Please distribute blanks on Page 17. Thank you!**

## INCREASING 1936 INCOME

**A** BUSINESS depression, such as was experienced from the fall of 1929 until conditions became definitely better in 1934, enforces a program of economy upon the so-called rich and poor alike. On the part of families occupying positions of security, luxuries were curtailed and finally during 1931, 1932, and 1933 thousands of golf club memberships were regretfully thrown into the discard by members who had for years regarded their club privileges as their only relaxation and form of healthful outdoor exercise, their game of golf played a few times during the week as anything but a luxury.

As names were crossed off club rosters, each one diminishing club income, the golf course payroll was cut to the bone at the majority of clubs, less and less was spent for equipment, seed, fertilizer, and other necessary items used in maintaining the course, and the spring of 1934 opened upon a scene generally unattractive to the golfing public. Lack of grass food and care was evident, and most courses could be diagnosed as suffering chiefly from an aggravated case of malnutrition.

The same conditions existed in all fields of turf culture. Lack of natural rainfall season after season was Nature's bitter protest against all the other evidences of the failure of humanity to safeguard its own.

During the latter part of 1933 there were signs of an uptrend, and appropriations were stepped up in many cases, resulting in a definite increase in the orders placed all over the country for new machinery and supplies needed for the rehabilitation of turf surfaces on golf course, park and other recreational areas in 1934.

In 1929, waiting lists were so much in style that membership campaigns were given no thought except by the slew of new clubs busily building up their lists to the saturation point, which opened to them the privilege of presenting to their membership an additional list of prospective members breathlessly waiting for a chance to sign up.

Meanwhile, what is going to be the chief drawing card in the hand of every membership committee put to work to fill the membership list during the coming 1936 season? The answer is on the cover of this new magazine. You will find it on every page contained herein. It is the reason *THE TURF SURVEY* exists, as the result of much careful thought and planning on the part of numbers of men who have for years on end realized that the one and only answer to such a question is *TURF*.

Old members approached to resume their membership will hesitate and prove to be decidedly sales-resistant unless a walk over the old home course arouses in them by reason of its good condition a nostalgia difficult to control except with a fountain pen setting their signatures on the familiar dotted line. In a trip taken over the course with a prospective new member, he is more than half sold providing the playing surfaces are better than those on some other course which he has also been considering. Comparisons are never more odious than when

a good course and a poor one nearby are both seeking members, either old or new.

Location, architecture, clubhouses and social opportunities, the standing and ability of the golf instructor, the calibre of membership—all play their parts, and important parts they are. **BUT** the card that takes the winning trick for the membership committee in its campaign for members during 1936 is the same card they depended upon with excellent judgment before the smash of 1929, *TURF*.

Grassed areas which have been subjected to the enforced economy of the past few years, starved to the point where they constitute a burden of apologetic conversation on the part of committees in talks with prospective members, like the skeleton at the feast, spoil the appetite of the golfer for the course, regardless of its fine architectural features and all other attractions.

During 1935 much was done to restore turf surfaces to their former thrifty growth, but there is far more yet to be done in 1936 and 1937 in an effort to keep pace with the membership sales promotion already in high speed. Re-employment of experienced greenkeepers and workmen trained in golf course maintenance, throwing into the discard machinery and tools worn past the point of efficient service, and buying the seed and fertilizer necessary for complete jobs of turf-renovation—these are the high lights on the program which is laid out for 1936 in support of golf club membership drives.

## THE HOLLOW SPOT AND WINTERKILL

**T**HE term "winterkill" is ordinarily affixed to any injury of turf which shows up for the first time as soon as the surface is cleared of ice and snow in the spring of the year. Injuries which become evident at this time may be due to any one of several causes, but the kind of injury which is caused by bad contouring and lack of surface drainage is the particular type under discussion here.

Depressed areas, where ice and snow collect and remain as the last areas from which excessive moisture disappears constitute the "hollow spots" that are a definite menace to early spring turf recovery and growth. Often such areas are easily discernible during the winter months, and wherever they are noted they should be marked for grade checking, to be later raised to a level from which surface water may run off quickly during the entire year.

Such pockets are trouble-makers all the year around, holding not only surface water for too long periods of time, but absorbing far more than their allotment of fertilizer whenever spread and watered in.

Checking surface drainage before definite growth starts in the spring allows turf growers time to remedy the fault in contouring, filling and planting or re-turfing the newly raised area to become one with the surrounding surfaces and present a uniform appearance early in the growing year.

WHILE the methods I have used to train young men under me at the Youngstown Country Club course may call forth a diversity of opinion among readers, it has been my experience that no two greenkeepers see things in the same light, the work as a whole being such that what applies with good results in one place and under one set of conditions does not apply in another. At some courses it is possible to engage a higher type of labor than at another, and in my case there have been many men hired who turned out to be fine greenkeeping timber.

The training of greenkeepers is to teach them by progressive steps how to obtain economically that perfection which is essential for the perfect enjoyment of golf.

#### DISCARD OLD TIME METHODS

The aim is to encourage them to study greenkeeping as an art, subject only to the practical methods of golf maintenance. That turf culture is a science, which if they desire to hold their own as a greenkeeper, must be studied to a greater extent from year to year. That they must do away with old fashioned methods, as these no longer satisfy the exacting demands of the modern golfer. That greenkeepers everywhere must have reliable knowledge founded upon the conclusions of a trained authoritative body.

#### TEACH LAWS OF GROWTH

Time and space in this issue will not permit me to enter into all the ramifications pertaining to training, but I regard as first in importance the necessity for a young greenkeeper to learn everything possible about the life processes of the grass plants under his care. That they must breathe, drink their food, and have a sanitary environment for healthy growth. He must be versed in the mechanical conditions of the soil, and be taught how to modify native soils to create ideal conditions for grass growth before planting. He should study soil structure, and be taught the importance of the fact that the productiveness of any soil for grasses is determined by the amount of water it can hold, the manner in which it is held, and by the facility and completeness with which the grass plants growing therein are able to withdraw that water for use as it is needed.

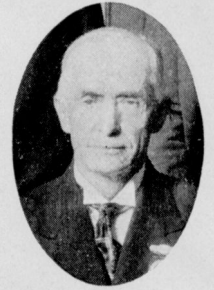
#### INSTRUCT FROM PLAYING STANDPOINT

I devote considerable time with a promising man in teaching him the proper management of putting greens in relation to the playing of the game, and in talking with him I try to remove from his path of progress such ordinary stumbling blocks as a man unacquainted with the playing of the game is apt to encounter when he has charge of his own course. I encourage such a man by informing him that most of our leading greenkeepers were not born with silver spoons in their mouths. That they rose to their present prominence almost without exception by their own ability, their will to forge ahead, and by individual efforts to get the best information obtainable and apply such information intelligently. They are impressed at all times with the fact that most greenkeepers succeed by giving everything they are capable of in the way of service to the club.

## TRAINING GREENKEEPERS

By JOHN MORLEY

President Emeritus The National Association of Greenkeepers of America



Mr. John Morley

#### GOOD GREENKEEPING TIMBER

What I call good greenkeeping timber in a man is a noticeable interest in any work for which he is to be responsible. In some cases, such interest will show up the first day such a man is put to work. He seems to immediately want to know the how and why of each duty imposed upon him, and such a man, when it comes his turn to take hold of the maintenance of a putting green, goes ahead with exceeding care.

In my declining years it is a great pleasure to look back upon the number of men I have trained, and who have made good where they were placed. Whatever the sacrifice may be in losing a good man, I invariably place him on a course of his own as soon as I am confident he is qualified.

Occasionally a man will fail because of the difference in soil conditions and grasses on a new job, or because after they have been given charge of a course they apply information as to methods without using good judgment as to whether such information was suited to the new course. I have trained and placed fifty greenkeepers during my lifetime as a greenkeeper, and it is a great satisfaction to review the many who have been outstandingly successful.

#### SELECTING LABOR ON NEW JOB

Perhaps some suggestions as to new duties as a head greenkeeper may be of value, chief among them being that when placed in charge of a course fresh from training, the greenkeeper should be careful in hiring labor to select men of various callings, some with mechanical training, some with experience in farming or gardening, and a few who enjoy digging ditches. The responsibilities toward employees are many and all talents hired must be made to work together in harmony. A program which is generally followed in handling labor on the course is to encourage men to hustle in the forenoon so as to have the course clear for play in the afternoon. An important phase of management is not to expect the men to keep a fast gait up all day, but to find some light work to occupy them for the balance of the day.

#### DIPLOMACY IN GREENKEEPING

Diplomacy is one topic which I always discuss with a man before sending him out as a qualified greenkeeper. I try to impress his mind with the fact that his boss on

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Mr. Guy C. West

## COST FACTS

By GUY C. WEST  
President Greenkeepers' Club  
of New England

**C**OST records as applied to work done on a golf course are of value to the Greenkeeper for many reasons, but cost records by themselves are of no value unless they are analyzed and used. If there are no records, there is no definite idea of costs. Cost records should represent the Greenkeeper; they should be presented to the Green committee by the Greenkeeper as his records, with his remarks and his recommendations.

Probably the greatest value of cost records is in their giving the cost keeper a chance to compare, not his costs with those on some other course, but his own costs from year to year. To enable the Greenkeeper to thus compare costs, the various items should be unchanged year by year, so that comparisons may be similar. Units should be established, to give suitable comparisons.

In keeping labor costs, the first step is to separate all strictly maintenance work from new construction. Separate cost figures should be kept for all new construction items, such as the building of a new green, remodeling a trap, or even enlarging a tee. New construction should cover any item not strictly maintenance. If the Greenkeeper so desires, he may include under his maintenance figures certain items which, while not strictly maintenance, are not actually new construction either, but rather a sort of middle ground, and often termed "renovation." Renovation is usually kept as a separate item under maintenance, and will include the improvement of an existing part of the course, without actual physical change. In some systems, renovation items are carried as sub-items under main items of maintenance.

The costs of maintenance of various practice areas should be kept separate from the costs on actual golf course. If this is done, and all new construction items have also been kept separate, at the end of the year the actual cost of maintenance of the golf course may easily be seen. It is of real interest and help to have this figure to compare yearly, and with which to compute the maintenance cost per round, if the number of rounds per year is known.

The keeping of cost records makes the Greenkeeper of more value to his club; he can talk more intelligently of his work; he can plan better; he can give estimates as asked by his committee; he can form a budget and follow it. He should therefore, by reason of careful cost distribution, command a higher salary. Keeping cost rec-

ords raises the standing of the Greenkeeper in the eyes of his club officials, and is a definite step toward management.

A motto for every Greenkeeper should be "Keep costs faithfully and make full use of the results."

EDITOR'S NOTE: *This is the first of a regular column series in which Mr. West will give specific examples relating to course expense distribution. His record is outstanding as one of the first greenkeepers in the country to work out a year-to-year cost comparison record which has been for several years in use at his club.*

## WATCH FOR SNOW MOLD!

**I**N accordance with information printed in Volume 12, Number 4 issue of the Green Section bulletin, the fungus causing Snow Mold, one of the most injurious of turf diseases, grows under snow and even through snow. As a rule snow mold infection is first noticed when the snow is melting, which may be after a warm spell in the winter months as well as in the spring.

At times the injury is superficial, affecting only the top leaves of the turf, but in some cases the affected areas are completely destroyed, leaving bad scars requiring months for healing unless replaced with new turf.

Snow mold has been found as far south as Virginia, and seems to attack red fescue and some of the strains of creeping bent more than other types of grasses. Of the common bents used on putting greens seaside bent has been found most susceptible, while Columbia bent and one quite widely distributed under the name of Inverness have been found to be unusually susceptible to snow mold injury.

Grasses which have been fertilized late in the fall with excessive quantities of nitrogenous fertilizer are most apt to attract this disease, therefore putting greens in the snow mold area should be fertilized as little as possible after August. Coverings, such as straw, which keep the grass wet after the snow has melted, should be avoided, and any treatment such as sweeping off any debris or any mass of fungus remaining on putting greens in the spring will in many instances tend to reduce late damage by snow mold.

Wherever snow mold has shown up on turf, the following fall preventive measures should be used, treating the areas with either corrosive sublimate or calomel, both of which have been found satisfactory in their results. These should be applied in late fall or early winter at the rate of from 2 to 5 ounces to each 1,000 square feet of surface. Where care has been taken to avoid late fall fertilization, and there has been no attempt made to cover the turf with straw or brush, the lighter rate is usually sufficient. In locations where environment conditions seem to be particularly favorable to the disease, the heavier rate is recommended.

## GOLF TRANSFORMATION

By CUSTER STALLMAN, Greenkeeper,  
Durand-Eastman Park, Rochester, N. Y.

GOLF today is more than a game; it is an industry. Hundreds of thousands of acres of land in this country are devoted to it; millions of dollars are invested in it, and millions of people are employed because of it. Think of the thousands upon thousands of caddies, greenkeepers, helpers, club house employees and others who are engaged directly upon the various golf courses. Add to them the thousands engaged in the construction of golf courses and club houses, and the further thousands employed by manufacturers and retailers of golf clubs, balls, clothing and other products used by golfers. The total of all of these is astounding.

It is not my purpose here to discuss golf as an industry, for after all I am only a greenkeeper, and as such am principally interested in the development and maintenance of golf courses rather than in industrial statistics.

In 1902 I got a job in the Park Department of the City of Rochester. I was assigned to Genesee Valley Park. The foreman gave me a four-blade Continental mowing machine and told me to cut the grass on some small plots which he called "putting greens." This was the first golf course in the City of Rochester and one of the first in the County of Monroe. It was laid out by a professional by the name of Al Ricketts who came from down east. There were only fourteen holes, but that was more than enough for the few golfers who took part in the game at that time. The grass on the so-called greens was the same as that on the fairway except that it was cut shorter and more often. It was ordinary timothy and clover, such as could be found in any hay field. There were no traps or bunkers. All the water for the greens and fairways was supplied by nature. The golfers consisted principally of those who had been ordered by a doctor to indulge in moderate outdoor exercise. The fairways were cut once or twice a year with an ordinary farm mowing machine drawn by a team of horses. Someone in the Park Department got the idea that it would be cheaper to pasture the fairways with sheep, and so a bunch of sheep was turned onto the course in charge of a shepherd and a collie dog. They, of course, had no respect for the greens, which soon were filled with holes. To remedy this situation a special roller was constructed. In the summer time rain was insufficient to keep the grass growing on the greens and it was, therefore, necessary to haul water in oil barrels for sprinkling purposes on the greens.

It was on this course that Walter Hagen got his start as a golfer. It was here that George Christ of the Country Club of Rochester and the McKenna Brothers of Oak Hill Country Club, and many other outstanding professionals, first learned the science or art of propelling a golf ball by the means of a rhythmic swing of a club.

A short time after I started to work at Genesee Valley Park, the Genesee Golf Club was organized. One day I



Holes Numbers Eleven and Thirteen in the hills and valleys of the course at Durand-Eastman Park, Rochester, New York.

was told that I was greenkeeper. That was the first time I had ever heard that title. I became interested in the finding and development of a grass suitable for greens and fairways. In 1906 white grubs of the June beetle ate up about seven acres of fairways. In the fall of that year the course was plowed up and the plots used as the greens were leveled off so as to make them more flat. In those days the golfers did not want rolling greens. The grass was re-seeded with South German mixture, purchased from Henderson's.

In the spring of 1907 my brother and I took a canoe trip from Rochester to Baltimore. From Baltimore we went to Jacksonville, Florida. While there I saw a man planting grass in rows. He told me that he was doing it to keep the sand from blowing away; that this particular grass would creep and would hold the sand down. When I returned to Rochester in the spring of 1908 I spoke to Mr. Dunbar, who was a botanist in the employ of the City, about the grass I saw in Florida. He told me that there was some grass in the bed along the Genesee River that would creep in the same way. I pulled up some of this grass and put in ten rows of it and the rest of it I just scattered in a bed that I had prepared. I did not pay very much attention to it until one day I saw it was beginning to look green. I ran the mower over it and soon the grass in the rows started to creep. That which I had planted broadcast was growing more smooth. I took some of this grass and made a green. I top-dressed it and to keep up the process made a compost pile. To Mr. Dunbar I owe much for the directions and knowledge which he gave me.

I read all the articles I could find on the growing of grass and visited many golf clubs in the south for the purpose of getting information.

Some time after the United States Golf Association Green Section was organized it sent a questionnaire to various greenkeepers to assemble information concerning

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If you have to, you can take a tree right over a hedge—or even a wall for that matter.

## MOVING TREES

By H. L. JACOBS, Arboriculturalist  
The Davey Tree Expert Company, Kent, Ohio

WE folks who make a business of struggling with trees and tree problems are biased enough to feel that nothing in the landscape quite equals the beauty of a great green, vigorous healthy tree. But prejudiced as we are, we have to grudgingly admit that the charm of fine trees depends a good deal upon their surroundings. Trees, to be most effective, usually need other trees around them, and shrubs and flowers and good flowing, rich green turf. Then you do have a picture to talk about.

You turf experts have much the same problem. If you want outstanding beauty you have to have something more than rolling, luxuriant, carefully-cared-for turf, attractive as that is in itself. You have to complete the picture and build the background. And a part of the background is trees.

Now, if you don't have all the trees you want, what is the best way to go about getting some more? You can go to the woods or to the nurseries and secure infant trees at relatively small cost. A far larger proportion of the trees will survive if you get root-pruned nursery trees—and you will get better tree types. Twenty or thirty years from now the trees will be large enough to start giving you the finished effect that you want. The plan is well worth while if you can afford to wait for results.

If you aren't as young as you used to be and if you are selfish enough to want your own generation to enjoy the fruits of the tree planting plan, then you ought to play with the idea of planting mature trees now; trees that

will give you the immediate effect that you want and that will be magnificent specimens when the next generation takes over the driver's seat.

This business of moving large trees isn't a new one, by any means, but up until recent years, the results weren't anything to brag about. The moving was successful but too many of the patients died. There were two main reasons for this—first, woefully inadequate equipment, and second, too foggy an idea of how trees should be handled and cared for if they are to be transplanted successfully in the larger sizes.

The old tree moving hayracks and two-wheeled cradles have within the last ten years gone the way of the dodo bird, insofar as big tree moving is concerned. In their stead you find carefully-engineered equipment, skillfully constructed of sturdy steel. These can really pick up a tree with a ball of earth large enough to leave the tree happy and contented following its arrival at its new home. Where most tree moving falls down is in the inadequacy of the ball of earth and roots that is taken with the tree. You can't hew the roots away to a few scraggly remnants and expect the tree to live. With big trees you don't dare economize too much on the earth that you pick up with the roots. It's a whole lot better to do the job right than to be faced with an array of expensive dead trees the next year.

For economy's sake, you have to use equipment that will carry the tree with plenty of earth and roots, and do it safely. You have to have equipment that will pick up a tree without injury to the trunk, roots or bark. You have to have equipment that will do these things swiftly, surely and economically. The old time battle to get the tree safely out of the ground was too hard on the nerves and too expensive.

Tree moving equipment, of all but the largest caterpillar or platform type, now rolls along on pneumatic tires; having six, eight, ten or as many wheels as are



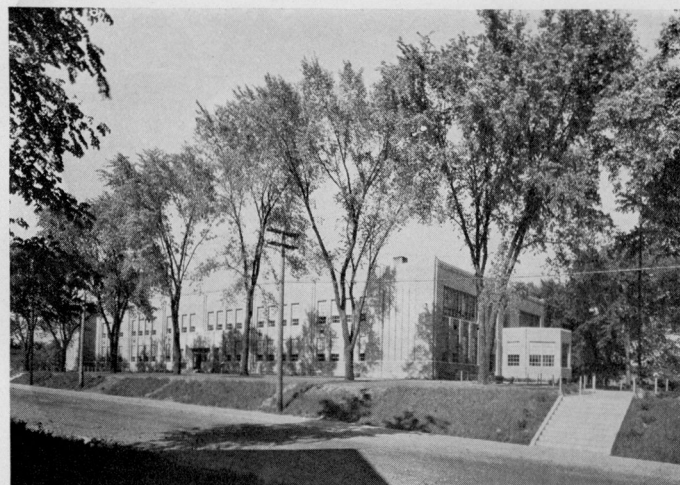
With a power winch and sturdy equipment you can pick a tree up and set it down gently and safely.

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In building this school in Peoria, Illinois, the grade was lowered, leaving the trees on earthen footstools.



During the winter the trees were lowered and more attractively spaced. The next summer they looked like this.

needed to support the tree's weight. On the highway, it moves right along. No more crawling, tedious, expensive hauls.

But it takes more than equipment to move big trees, so that they will live and thrive. It's like working with turf or with any special type of plant. You have to know a good deal about tree structure, how to avoid doing injury, and what the response of the tree will be under varying conditions and difficulties. Each to his own line. Tree men ordinarily know little about your turf problems. You would not employ them as turf experts. But they do know trees, tree behavior and tree needs. That is, they do if they are associated with a reliable company that selects its men with care and provides them with the extensive special training that is so all important. You can quickly spot the quacks if you are a careful buyer.

Right now is the time to get enthusiastic about planting deciduous trees, if anything at all is to be done this year. The trees ought to be moved and in the ground before the

buds burst. Winter moving, while the ground is hard, reduces costs considerably. When you are dealing with tons of weight, soft ground is likely to be a costly hazard.

Trees six inches in trunk diameter to two feet in diameter can be moved with fine success. Usually the trees under eighteen inches in diameter are the best investment. They are large enough to give you the size, the fine shade and the finished effect that you like to think about in your mind's eye. They can be moved at relatively low cost, while the huge trees, because of their unusual size and weight, cost disproportionately more.

If you have a leaning toward evergreens, make your plans now but wait until March or April, when the ground has thawed out. In the northern sections of the country, evergreen planting should be completed by the middle of May or the first of June.

Get a good landscape architect to help in planning the plantings. By following a carefully prepared, systematic plan, you can create an amazing amount of permanent new tree beauty and do it economically and within a short time.

## TRAINING GREENKEEPERS

(From Page 5)

the new course, usually the chairman of the Green committee, is not likely to immediately let him have his own way, and that he is fully as responsible as the chairman in cementing the bonds of mutual respect which must exist in order that club members be properly served. I instruct him as to his duty to his chairman, and the attitude he should take in regard to the ordinary progress of their mutual responsibility.

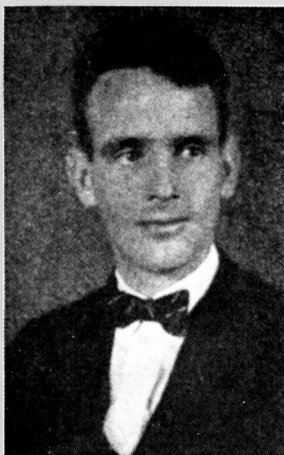
Personally, I have worked under five different chairmen, and have never encountered any serious trouble with any of them. I have always realized that the chairman is anxious to please as many of the membership as possible, and that he is desirous of making good while holding the honor of the position. I have always seen to it that the orders of the chairman are carried out without delay. In some cases such orders do not concur with certain items of management that I have in mind to accomplish, but I have learned to bear the unpleasant, keeping in mind

that the desires of the membership, registered with the chairman, must be at all times accepted by the greenkeeper.

### CARRYING RESPONSIBILITY

It matters not what calling we follow in life, those who are capable of shouldering responsibility will get it to carry, and while the responsibility of a qualified greenkeeper is heavy, the variety of duties and the interest in them, the love of the outdoor work, and the satisfaction of providing a golf course over which members and their guests enjoy a fine game combine to form a good reason why greenkeepers love and nourish every blade of grass under their care, and derive an immense amount of inspiration from their vocation. A natural love for the work is undoubtedly why the average greenkeeper is not of a roaming disposition, and is content to remain for a lifetime loyal to one club.

Please distribute blanks on Page 17. Thank you!



Dr. John Monteith, Jr.

## THE TURFORUM

DIVISION OF GREEN SECTION  
INQUIRIES AND REPLIES

### NEBRASKA

**T**REATMENT OF TURF INJURED BY GRUBS.—Our bluegrass fairways were badly injured in the spring by a fairly small white grub with a black head. To the best of our knowledge this was the first time the turf was so thickly infested with the grubs. We treated our bent greens twice with arsenate of lead applied at the rate of  $2\frac{1}{2}$  pounds to 1,000 square feet, and with fine result. We have been advised to treat the fairways with arsenate of lead at the rate of 300 pounds to the acre.

**ANSWER.**—*It is probable that the injury to your turf was caused by the larvae of the May beetle. It is likely that there is only one brood, appearing only every two or three years, which does much damage in your particular area. It is possible also that due to drought and perhaps lack of fertilizer the fairways suffered more than usual during the season and the grub injury was accordingly more noticeable than might ordinarily have been expected. The application of 300 pounds of arsenate of lead to the acre is more than the full rate which is applied even in such districts as Philadelphia, where serious injury from the Japanese beetle larvae can be expected each year. The ordinary rate is 5 pounds to 1,000 square feet, which amounts to 215 pounds to the acre. Since your two applications at the rate of  $2\frac{1}{2}$  pounds to 1,000 square feet were satisfactory on your putting greens it would be well not to exceed this rate. For the control of white grub injury when the grubs are the larvae of the May beetle, an application of 3 pounds to 1,000 square feet has often been found to be sufficient. We feel that in your section of the country money can usually be expended to better advantage in the purchase of fairway fertilizer than for arsenate of lead. It has been demonstrated that heavy, vigorous turf is usually not seriously injured by ordinary broods of May beetle larvae.*

### INDIANA

**IMPROVING GREENS THE SOIL OF WHICH IS PACKED.**—Our greens are too hard. We have been told that chalk and other substances placed on the greens will work down into the soil and make it soft. We have been top-dressing our greens with good soil, which has been helping some-

what, but the improvement is too slow to suit some of the members of our committee. What is your advice?

**ANSWER.**—*We presume those who have advised you to put chalk on your greens mean lime. In agricultural practice lime is used to help improve soil structure. On a putting green where the soil is in a packed condition and can not be cultivated as in agricultural practice, the use of lime alone would have only a minor effect in loosening the soil. Lime used with a sandy loam top-dressing would be of more value. Under your conditions we would spike or disc the greens as deeply as possible without turning the turf, and work a good top-dressing of sandy loam containing a liberal quantity of organic matter into the openings. Lime at the rate of 25 pounds to 1,000 square feet could be mixed with the sandy loam top-dressing. The greens should then be matted and watered, and fertilized about a week later. If this treatment is continued for some time the topsoil will gradually improve.*

**NEED FOR COMPLETE FERTILIZER ON FAIRWAYS.**—The bluegrass on our fairways has thinned out considerably. A test of the soil by the hi-lo-phos method shows it in need of phosphorus, the average of the test of the soil of the 18 fairways being  $2\frac{2}{3}$ . The last complete fertilizing we gave them was about three years ago, when we applied activated sludge at the rate of about 800 pounds to the acre. Since then we have been using sulphate of ammonia on the fairways. What fertilizer program would you recommend?

**ANSWER.**—*It is likely that your fairway soil is becoming deficient in mineral elements, particularly phosphorus. When you applied activated sludge as a complete fertilizer three years ago the rate at which you applied it was probably not sufficient to provide for any considerable reserve of phosphorus and potash in the soil, since activated sludge is rather low in phosphoric acid and contains only a trace of potash. The sulphate of ammonia has added only nitrogen. We would recommend that you use a 6-12-4 fertilizer. This should be applied at the rate of 500 pounds to the acre. Sulphate of ammonia could later be advantageously applied at the rate of 200 pounds to the acre. If the complete fertilizer is applied in the fall the sulphate of ammonia should be applied in the early spring, or vice versa.*

**HAS 20 PER CENT SUPERPHOSPHATE A TENDENCY TO MAKE SOIL ALKALINE?**

**ANSWER.**—*Neither 20 per cent superphosphate nor any other grade of superphosphate appears to increase the alkalinity of soil to an appreciable extent.*

**CRAB GRASS CONTROL IN TURF.**—We have a fourteen-acre estate with about eight acres of lawn. The whole place is maintained the same as a park; that is, it is mowed frequently, the edges are kept trimmed, and plenty of grass seed is sown. We have had a great deal of trouble, especially this year, with what is called "crab" grass—a very heavy, rough grass which comes along in August and is still showing in some fairly large patches. We do not want to tear up our lawn. What is the best procedure

to keep from having a recurrence of this grass every season?

ANSWER.—*We have had many reports of the heavy infestation of crab grass throughout your district during the past season. We have some chemical control treatments which hold some promise but as yet they are in the experimental stage so we can not make any definite recommendations for their use. We have found however that to check crab grass it is well to set the mowers as high as possible during the early summer particularly. One objection to a high cut on the fairway is that the ball does not roll as far as most golfers desire. However in turf on an estate this objection does not hold, and we therefore advise that the mower blades be set so that they cut high. We advise also that most of the fertilizing be done in the fall in regions infested with crab grass.*

### TEXAS

SO-CALLED "ATLANTA STRAIN" OF BERMUDA GRASS.—Some of the seed houses are advertising seed of the "Atlanta strain" of Bermuda grass as possessing superior qualities for putting turf. What information have you concerning this strain?

ANSWER.—*Years ago the late Dr. Thomas P. Hinman, of Atlanta, observed an especially fine strain of Bermuda grass on his golf course and called it the Atlanta strain. Since that time any fine strain of Bermuda grass in that section of the country has been called the Atlanta strain. As far as we know, however, no seed of any of these strains has been produced. These fine strains originated from Bermuda grass seed from Arizona. The Arizona Bermuda grass contains some coarse strains, but it also contains numerous fine strains. The only way to plant a pure fine strain of Bermuda grass on putting greens is to select a fine strain as it develops, and propagate it in nurseries so that eventually the greens may be planted solely to a particular strain.*

SEASIDE CREEPING BENT FOR WINTER PUTTING GREENS IN THE SOUTH.—Last fall we shaved the top off one of our Bermuda grass putting greens and sowed it with seaside creeping bent seed. We kept it well watered and cut close and now, in May, it is the finest green on our course. Have you any information on experience of other golf clubs with this grass as a putting green turf in the South? As the seed is high in price would equally good results be obtained by mixing redtop seed with it?

ANSWER.—*The seaside creeping bent seed planted as a winter grass on our demonstration turf garden at Miami Beach, Fla., produced an excellent turf throughout the winter. In one plot it was planted on a Bermuda base and in another plot it was planted on a new seed bed. It did equally well in both cases. It seems likely that this grass will produce good putting green turf throughout the South for winter play if properly handled. The results to date, although by no means conclusive, would indicate that clubs might well afford to try the grass out in an experimental way. In most of the South it will not sur-*

*vive throughout the summer but will need reseeding in the late fall or early winter just as is customary in planting other winter grasses in putting greens. A mixture of red-top and seaside creeping bent should give a satisfactory winter turf.*

### PENNSYLVANIA

SOIL-BED METHOD OF PREPARING TOP-DRESSING FROM HEAVY CLAY SOIL.—Our soil is a heavy clay. The soil water is high in lime content, rendering the soil alkaline. Last fall we started a soil bed of approximately 2 acres for the purpose of furnishing us suitable material for use as top-dressing and for constructing new greens. For producing a loamy top-dressing material the soil now requires the addition of three parts of sand and one part of humus to two parts of soil. In the fall we planted a cover crop of winter vetch and applied about 25 tons of green manure to the acre. This spring we intend to plow the winter vetch under and sow the area in spring vetch and rye, first inoculating the vetch seed with a suitable bacterial culture. Before sowing we plan to fertilize with a mixture of 100 pounds of activated sludge, 100 pounds of sulphate of ammonia, 100 pounds of superphosphate, and 50 pounds of muriate of potash, this 350-pound mixture being applied to an acre of land. In the fall we shall plow under the spring cover crop and shall allow the ground to lie fallow over winter. The following spring we expect the soil bed will give us suitable material for our purposes, sand to be added to the material as required. Have you any criticisms or suggestions on this program?

ANSWER.—*We consider your program is an excellent one. Few clubs appreciate the large quantities of sand required by heavy soils in preparing them for top-dressing purposes.*

### NEW YORK

HOW ARE EARTHWORMS BEST CONTROLLED ON FAIRWAYS?

ANSWER.—*The most effective way is to apply lead arsenate mixed with some carrier such as fertilizer or sand. It is usually necessary to apply as much as 250 pounds of lead arsenate to the acre. The lead arsenate will also control grubs in the soil.*

MIXING STRAINS OF CREEPING BENT FOR A PRACTICE PUTTING GREEN.—We expect to build a new practice green of 45,000 square feet. Both the Washington and Metropolitan strains of creeping bent appear to be so satisfactory that we are thinking of planting the green to these grasses in equal proportion. What is your advice?

ANSWER.—*We have never found any advantage in mixing the Washington and Metropolitan strains of creeping bent. If the matter is a choice between the two strains, for a practice putting green we would probably choose the Metropolitan, in your district.*

YARROW IN GOLF TURF.—Considerable yarrow is showing in our greens notwithstanding special efforts have been made for several years to keep this weed mowed on surrounding territory before it flowered and

went to seed. We note that some seed mixtures for tees and fairways are advertised as containing yarrow. Is it common practice to use yarrow for tees and fairways? We have read also that in some places all-yarrow greens are used. What are the objections to the use of yarrow for greens? If it is objectionable, how can it be removed?

ANSWER.—*The yarrow in your greens was probably introduced in German mixed bent seed, which often contains small quantities of yarrow seed. It makes a fairly satisfactory turf when mixed with grasses. The only way to remove it is by hand weeding, or by replacing infested areas with new turf. Yarrow alone makes a satisfactory turf but is difficult to maintain. It is not a common practice to use yarrow in seed mixtures.*

CAN ALUMINUM SULPHATE BE USED TO CHECK CLOVER ON FAIRWAYS?

ANSWER.—*It has been found that aluminum sulphate is toxic to the common turf grasses and its use is therefore not advised on grass. In order to control clover on turf it is best to apply fertilizers high in nitrogen content. It is also advised that for the spring application of fertilizers those which are the more soluble be used.*

#### NORTH CAROLINA

COTTONSEED MEAL AS A FERTILIZER FOR FAIRWAYS.—

We have one fairway that we have thoroughly fertilized with a high-grade fertilizer. One of our members has suggested that we scatter a goodly amount of cottonseed meal on this fairway. The grass is just now (April 24) getting started. What do you think of cottonseed meal in a case of this kind?

ANSWER.—*Cottonseed meal is a very good fertilizer and can of course be used following the other fertilizer if you think the grass requires still further feeding. As a rule, fairways are under-fertilized rather than over-fertilized. The slow start of the grass this spring may be due more to unfavorable weather than to lack of fertility. If, however, it does not come along in good shape soon you would be quite safe to make further applications of cottonseed meal. The usual application is 500 to 700 pounds to an acre.*

#### OHIO

RIDDING A LAKE OF CAT-TAILS.—We are having trouble with cat-tails growing in a small lake on our property which we use for supplying irrigation water and also water for a swimming pool. The cat-tails are spreading so rapidly and growing so densely as to reduce the capacity of the lake and make it unattractive. We have attempted to dig them out, but find it a difficult task. In the winter we drain the lake dry. What could we use to kill the cat-tails and at the same time permit us to continue using the water for our turf and the swimming pool?

ANSWER.—*The best procedure might be to drain the lake until the bottom has dried out fairly well, and then cut the cat-tails close to the ground, pile them over the roots where possible, spray them with kerosene, and burn them. If severe enough the burning will kill the roots.*

*The lake could then be filled for over the winter, but just previous to spring it should be drained again and calcium chloride sprinkled profusely upon the areas where the cat-tails may be growing. The lake should be left dry long enough to permit the calcium chloride to leach into the soil and kill the roots. Then allow the lake to fill partially and drain once before refilling for use. After that the water will be fit to use on turf and in the swimming pool. Cat-tails are perennials and it will be necessary to kill their roots to get rid of them. This treatment may have to be repeated occasionally.*

#### CONNECTICUT

PREVENTING SEED PRODUCTION OF FESCUE IN ORDER TO THICKEN TURF.—Chewings' fescue is the main grass in our turf, which contains also some bluegrass and red-top. If the fescue is allowed to go to seed will a thickening of the turf occur each succeeding year?

ANSWER.—*Seed of Chewings' fescue is produced in the summer on stalks 12 to 18 inches high. If the grass is allowed to go to seed it becomes too high to produce satisfactory turf. The turf becomes thicker when the plants are not allowed to go to seed. Our advice would be to purchase additional seed if necessary rather than attempt to produce seed in such manner.*

#### WEST VIRGINIA

USE OF WELL WATER FOR CREEPING BENT TURF.—

The source of our water supply is from a deep well, although it would be possible for us to obtain water from a stream some distance from the course in case the well water is not suitable for the Washington bent which we have. We are giving you an analysis of the well water. Do you think this analysis shows anything that would be injurious to the bent we are using?

ANSWER.—*The analysis of this water shows nothing harmful except in the case of sodium. The proportion of sodium to calcium and magnesium is high enough in this water to make it likely to cause some injury to the soil after a period of years. However, this condition can be overcome by the use of sufficient gypsum to counteract the effect of an excess of sodium. An application of gypsum at the rate of from 3 to 5 pounds to the 1,000 square feet a year should be sufficient to counteract the sodium in this water. If superphosphate is used as a source of phosphoric acid in the regular fertilizing program it would serve much the same purpose as gypsum in correcting the harmful effects of the sodium excess. Therefore this well water should be entirely satisfactory water for you to use.*

#### KENTUCKY

GRUB CONTROL WITH ARSENATE OF LEAD.—For many years we have been troubled with what we call the "grub" worm which is later transformed into a June bug. The grub comes to the surface in the fall of the year mostly during September and October and feeds on the roots of the grass, appearing in the form of a June bug the following midsummer. We have been treating our turf for a number of years with arsenate of lead, applying it with

a mixture of fertilizer as soon as we notice the worm casts appearing in September. Is the fall of the year the best time to apply it?

ANSWER.—*We regularly recommend the use of arsenate of lead for the control of grubs of the June beetle. It is well to make the applications when grub injury first becomes apparent. Early in September would be a satisfactory time for the poison stays in the soil for long periods and even if it does not kill all of the grubs in the fall the poison will still be present in the soil to affect them when they start feeding in the spring.*

## GOLF TRANSFORMATION

(From Page 7)

the development and maintenance of greens and fairways. Based upon the information contained in the questionnaires and from other sources, a bulletin was issued. This was very valuable because of the varied knowledge contained in it, practically all of which was the result of experience or experimentation.

Greenkeeping is no longer an ordinary job; it is a profession. To be a greenkeeper one must be a lover of nature. It is a profession that must be learned rather than taught. The best school-house in which to learn it is the school of experience.

There probably is no more beautiful public golf course than that at Durand-Eastman Park. It is equally true that there are few private golf courses more richly endowed with natural beauty and natural hazards. It is located on the shore of Lake Ontario. Its soil is rich and adapted to various grasses. The geologists tell us that its hills and valleys and rolling terrain were caused by the glaciers. Originally this was a nine-hole golf course which was laid out by Donald Ross. Although there were two eighteen-hole golf courses owned by the City of Rochester at Genesee Valley Park, and although there were nearly a dozen other golf courses in the vicinity of the city, such pressure was brought by golfers who loved to play at Durand-Eastman Park, that an eighteen-hole course was laid out.

All of the greens are vegetated and planted with Washington bent stolons, which I raised in a small nursery.

As things are today a new green may be vegetated in the fall and be ready for play early in June even in this part of the country where winters are severe. This indicates the advancement and progress made in the selection and growing of grass for greens.

I am not a photographer and have never taken photographs of the golf course at Durand-Eastman Park, but I borrowed one from a friend of mine which I am enclosing herewith. This shows holes number eleven and thirteen which were laid out two years ago with Relief workers. The layout of the new eighteen-hole course was made by Robert Trent Jones of the firm of Thompson & Jones of Rochester.

I think I have given enough of a picture to show how the game of golf has developed from a small pastime or hobby for a few to a national game which more people of all ages enjoy than all of the other games put together.



Mr. Everett J. Pyle

## EXPERIMENT IN VELVET BENT

By EVERETT J. PYLE

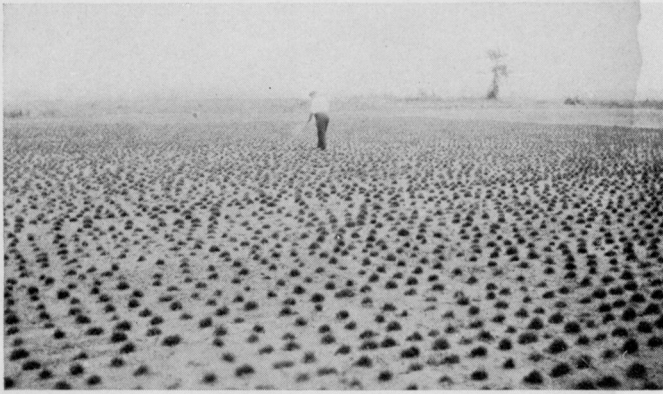
Superintendent Goodwin Park, Hartford, Connecticut

EDITOR'S NOTE: *Reprinted from November 1935 issue of the NEWSLETTER, official organ of the Greenkeepers' Club of New England.*

IN Goodwin Park, eighteen new greens are being constructed by the Hartford Park Department. Velvet bent was selected to plant on these greens, because it is without doubt the best turf grass for putting greens. There is a decided trend among green chairmen and greenkeepers to change their greens over to some strain of velvet bent, and the opportunity to plant eighteen new greens with this fine grass was too good to be overlooked. The 14276 strain was chosen because it has (1), a high degree of resistance to turf diseases, especially Brown-patch and Dollar spot, (2) a beautiful dark green color, (3) a fine texture and a stiff upright growth, (4) the highest rating at the U. S. G. A. Turf Gardens, Charles River Country Club, and at the Rhode Island Experiment Station, Kingston, R. I. Fortunately, Mr. George Hollister, Superintendent of Parks, was able to purchase from Frank Robinson, a member of our club and a man who loves to work with turf grasses, 3000 feet of the 14276 to start a nursery of  $2\frac{1}{4}$  acres.

The nursery is located in the South Meadows near the

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Here is the velvet bent nursery at Goodwin Park one month after planting on August 7, 1935.

Connecticut River, on a heavy silt loam soil. The land was plowed, harrowed, and smoothed with a plank drag in July of this year, and we started to plant the turf on August 2nd. F. E. R. A. labor was used to do this work. Rows were made nine inches apart and about one and a half inches deep. To mark the rows, a large home-made "rake" was used. It took six men to operate this "rake," which marked eight rows at a time. The turf, which had been cut one inch thick, one foot wide, and five feet long, was chopped with meat cleavers into pieces two inches square. Several experienced "butchers" from the ranks of the F. E. R. A. were brought to light during this operation. The pieces were then planted about nine inches apart in the rows and watered immediately. This involved a great deal of hand work, approximately 840 man hours, which was furnished for the most part by the F. E. R. A. From then on it was a case of watering, weeding and fertilizing.

Water is essential. It so happened that an extended dry spell, which lasted for three weeks, kept the men busy watering to keep the small pieces of turf from drying out. An additional line was installed to increase the amount of water, but even so, some of the turf got pretty brown. However, practically all of it came back when we got some rain and a little cool weather to help out. About the only ill effect of this drought was to set the turf back a couple of weeks. In applying water we tried to get the ground well moistened to start with, after which it was a case of going over the entire area as frequently as possible to keep the pieces of turf fresh and green, much as one would do in watering a green just planted with stolons. In our case it was just impossible to get too much water on. After the first rain the complexion of the nursery changed over night as if by magic, which goes to show that no amount of artificial watering can compensate for a good natural rain.

Weeding is very important and is responsible for the biggest labor item after the original planting is done. The most troublesome weed was creeping bent. This grass takes hold and spreads so rapidly that it will over-run the

nursery in no time. Other weeds found were Colonial bent, blue grass, quack grass, and some clover. There were several annual weeds, but these were not difficult to take out. We started to cultivate between the rows to keep the weeds down, but found that the men were not careful enough and the loosened soil, being crusty, would get onto the small pieces of 14276, which would kill out whenever it was covered. Cultivation was stopped and the men pulled all the weeds by hand for the first six weeks, after which the 14276 had made enough growth and was not so easily covered by the loose soil when cultivation was resumed. This cultivation was shallow, just enough to chop the weeds, and was done with small garden hoes. It was still necessary to do considerable hand weeding close to the small pieces of turf. One man did all of this work and he had to be careful to get every piece of creeping bent possible. I believe that the 14276 velvet bent, when planted on the greens, will crowd out all other turf grasses, except other strains of velvet, and this includes creeping bent. Yet, if too much creeping bent is allowed to grow in the nursery with the 14276, it will be chopped up with it and planted on the greens. Here it will make a more rapid growth than the 14276 and a spotty growth will be evident for a few years. We want to give the 14276 as little competition as possible so that a uniform stand can be obtained quickly.

A ton of 7-9-2 fertilizer has been applied so far. The



Showing two months' growth of velvet bent at Goodwin Park planted in pieces two inches square.

first application was made one month after the turf had been planted. Only 500 pounds were put on at one time, and the applications were from ten days to two weeks apart, depending upon weather conditions. The spreading was done by hand, and except for the first time, was done in the rain, which eliminated the necessity of watering.

No disease of any kind has been noticed so far and no fungicides or insecticides have been applied.

We have taken photographs of the nursery every month since it was planted. These show the stages of growth at set intervals, and are very interesting. At the end of two months the pieces of turf had increased about twice their original size, and after three months had tripled in size. No stolons or rooting nodes were noticeable except those on the under side, which were short and close to the parent plants, until the end of the second month. From then on, however, numerous short stolons were evident, originating from all sides and from the tops of the tussocks also, for we allowed the turf to develop naturally without cutting. On the 14276 these stolons do not grow as rapidly nor as profusely as they do on creeping bent. This fact, which makes it necessary to allow more time for development in the nursery, is one of the desirable features of this turf for putting greens as compared to creeping bent, for it seems that this characteristic should eliminate some of the raking on the greens, which is so essential with creeping bent.

After the nursery was established, two experiments were tried on a small scale with some of the 14276. We wondered what results could be obtained if, instead of chopping the sod into pieces two inches square, we divided it into smaller units. Some of the two inch pieces were therefore broken up into individual plants. These were planted in rows as had been done with the larger pieces and they received the same treatment. It was very noticeable that the individual plants spread more rapidly and sent out stolons much sooner than did the larger pieces. If we were to plant more of the 14276 and could do the planting in cool weather with plenty of water available, we would undoubtedly use this later method.

On another plot we separated the clumps into individual plants and treated them like stolons; i. e., they were broadcast over the surface, top-dressed, and kept moist. In three days four or five long healthy new roots had been formed by each plant, and in four weeks each individual stolon, when pulled up, held by the new roots formed, a ball of soil larger than a golf ball. There is no question as to this 14276 being a vigorous and profuse rooter. It was necessary to top-dress the stolons a little heavier than would ordinarily be the case when planting stolons of creeping bent, on account of the enlarged stems at the base of the individual plants of 14276. As was the case with the separate plants set out in rows, the stolons grew very rapidly, and sent out jointed runners much sooner than the two inch pieces.

There is an enormous amount of labor necessary in the propagation of the 14276 velvet bent, and the two largest items are planting and weeding. Watering and fertilizing



Three months after planting, velvet bent at Goodwin Park presented this heavy and thrifty growth.

are important and must be done carefully if good results are expected. However, we believe that a nursery of this kind is well worth while in the Park Department, for an unlimited supply of this beautiful strain of velvet bent will always be available. In the Spring, we will have at least eight greens ready for planting. The remaining ten greens will all be planted during the coming season, and it will be a great day for us here in Hartford when eighteen greens of 14276 are opened for play.

### MISSING NUMBERS OF THE GREEN SECTION BULLETIN

**T**HE office of the Green Section, Box 73, Benjamin Franklin Station, Washington, D. C., asks readers of the Turf Survey to send in copies of the bulletin as follows, in order to complete their files:

Vol. II, 1922. All numbers.

Vol. III, 1923. January, February, March, April, May, June, November, December.

Vol. IV, 1924. January, February, March, May, June.

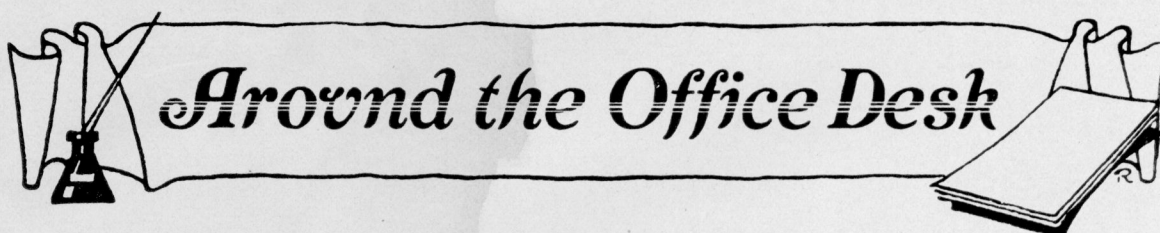
Vol. V, 1925. June, July, August, December.

Vol. VI, 1926. January and March.

Vol. VII, 1927. February, April, May, June, November.

Any readers who have complete volumes which they no longer need are asked to send the complete volumes.

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## Around the Office Desk

FROM many sections of the country this new publication has drawn keen interest since its introduction. One of the first letters came from Mr. John Morley, President Emeritus of the National Association of Greenkeepers of America, who writes, "I am pleased to know you have received so much encouragement and offers of co-operation from greenkeepers. Will be glad to send you something for your first issue, and I wish you every success."

Mr. Everett J. Pyle, superintendent of Goodwin Park, Hartford, Connecticut, suggests reprinting his article on velvet bent culture which appeared in the November issue of the NEWSLETTER, organ of the Greenkeepers' Club of New England. He advises he will send additional information for a later issue of THE TURF SURVEY, and closes thus, "I believe THE TURF SURVEY will be appreciated by all who are interested in turf problems, and wish you the success you deserve in undertaking this necessary work."

From Herb Graffis, editor of *Golfdom*, comes "I have a hunch we have only seen a bare beginning of golf in this country and that in ten years or so the extent of the game will be in dimensions far, far beyond those now contemplated by most of us. Good luck, and Allah bless you." *There's* a prediction for readers of THE TURF SURVEY, pointing directly to the necessity of preparing now for future expansion. We believe the prediction is as true as is the spirit of good sportsmanship and general helpfulness which has been for years exemplified by both "the Graffis boys" in the golf publication field.

Down on Wilmington Island, Savannah, Georgia, the course connected with the Hotel General Oglethorpe, during the past four years reverted to jungle. This past fall Arthur Boggs of the Cleveland district proceeded to do the job of reclaiming, and at Christmas the greens were practically in playing condition. W. H. (Bertie) Way, of Mayfield Country Club, Cleveland, was put in charge of this work, and both Mr. Boggs and Mr. Way are located there for the winter months. The story of this rapid resurrection into playing condition will be told in the coming March number. In the meantime, here are some of the remarks made in a letter received from Mr. Way when he heard that THE TURF SURVEY would be brought into being: "Glad

to hear from you, and first want to say that I wish you every success on this venture. I believe you will get the support of everybody concerned. I am sure Mr. Jacobus will work with you. I have found it a great pleasure to be associated with him."

In confirmation of Mr. Way's remarks comes a letter from Sarasota, Florida, Mr. Jacobus' winter headquarters, assuring us that we may expect a contribution from the pen of the president of the Professional Golfers' Association of America for the coming March number. Mr. Jacobus has devoted an immense amount of time and endeavor to interest his members in learning the fine points of greenkeeping, such efforts being of sufficient force as to define the keynote of his administration as the promotion of greenkeeping knowledge among the members of the PGA of America. After giving the textbook *Golf Course Commonsense* its degree of complimentary notice, Mr. Jacobus follows with, "I am terribly sorry I could not get some material to you for your first issue. If you will advise when your next goes to press, I will be glad to write something for it. Wishing you complete success with your new venture, and assuring you I will be glad to co-operate in any way I can, . . . etc."

Mr. Alex Pirie, of the famous Old Elms Club of the Chicago district, is averse to writing letters of any kind, therefore we feel very much complimented to receive from him with his advance subscription the following note: "I hope you will be entirely successful in the publication of THE TURF SURVEY. Such a magazine as you outline will be a great help to all of us." Just for that we intend to make a trip to Chicago this coming spring and write up some remarks which Mr. Pirie will undoubtedly make for the benefit of readers, as he is unquestionably the type of greenkeeper whose knowledge and long experience will form the basis of an unusual feature for an educational medium of this kind.

Mrs. Edith Prettyman, editor of the *American Cemetery*, has been so wholeheartedly co-operative in her several letters, that it is difficult to select the particular remark most suited for publication here. Perhaps we will just choose this one, with many thanks for the definite help she has accorded us,

(To Page 18, Please)

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**SEND YOUR SUBSCRIPTION BY RETURN MAIL!  
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CUT HERE

## AROUND THE OFFICE DESK

"I am very glad THE TURF SURVEY is getting such a fine start; you have my best wishes for its every success."

Among local associations of greenkeepers, the Indiana men, in the person of Mr. George Holmquist, secretary, advise that they are sending in their subscriptions, and that they know "this is the magazine they have been waiting for, for years." We can see where we are going to get a little open air this spring, for an agreement has been reached to publish a complete series on greenkeeping problems as written collaboratively by the members of the Indiana Greenkeepers' Association, each article to be taken down at regular meetings. This series bids fair to hold tremendous interest for workers in all fields of turf growing. First of the series scheduled for the April number.

Mr. Guy C. West, president of the Greenkeepers' Club of New England is offering assistance in the form of a series on course cost accounting, starting with this Inaugural number, and has made a number of most helpful suggestions. In starting a medium of the Turf Survey type along, nothing helps more than constructive criticism, and nothing is more welcome in this office.

Mr. Joseph Whitehead of Edgewood Country Club, Cromwell, Connecticut, acting secretary of the Connecticut Greenkeepers' Association, writes that he has mentioned THE TURF SURVEY to several of his members, and they are much interested in seeing the first copy. Subscriptions will be a topic taken up at their next meeting so that enrollments will be received before publication of the March number.

Here is what Mr. Joseph Varn Hagen, landscape architect and greenkeeper of Detroit, has to say about THE TURF SURVEY: "You know how much we all wish you a fully successful co-operation in this new venture. We are sure that it will be outstanding, and get better all the time. Many we know feel just as we do, and if there is anything we can do to help, just call on us and it will be done." Mr. Varn Hagen and his two boys are trained horticulturists, Mr. Joseph Varn Hagen, Sr., having received his education in Holland. His particular interest is naturally the planting and care of the many beautiful flowering bulbs, and as these constitute one of the most valuable and time-saving contributions to the cut flower garden, as well as one of the most ornamental collections of blooms for bedding, the contribution we have asked for is one devoted to bulb planting and culture. Expect this in the April

number, and regardless of the planting time prescribed, it will appear as a spring feature.

Mr. Custer Stallman, thirty-five years a greenkeeper, tells an interesting story of the development of golf under his observation in this issue. Mr. Stallman's subscription was the second received, and was accompanied by "Your announcement about the magazine you intend to start is a good idea, and you will have my most hearty support. I have one of your books, GOLF COURSE COMMON SENSE, and think it is the most 'commonsense' book ever published for turf growers. I have been much interested in the work of the Green Section ever since it started, and am certainly glad to know THE TURF SURVEY will carry on their reports. Getting ideas of greenkeepers and the Green Section together will be of much help to all. I will contribute whenever you get ready, and enclose subscription." Well, we got ready within two minutes, and therefore Mr. Stallman is with us herein. We believe that thirty-five years at greenkeeping has not slowed him down, as within a day or two later, he sent in another subscription for a neighboring greenkeeper.

Nothing much has been said about the prompt response on the part of the greenkeeping profession in general, but letters and messages on the order of "We'll be seeing you at the convention" have been coming in steadily since introducing THE TURF SURVEY. Subscriptions from individual greenkeepers in every mail, and while we are on the subject it is well to recognize the man who sent in the first subscription to the National Greenkeeper when it was started back in 1927, who repeated by being the first subscriber to THE TURF SURVEY, Mr. James Livingstone of Avondale Estates, Georgia. We wish to say directly to Mr. Livingstone that if this was intentional to be put on record as the first subscriber to both the *Greenkeeper* and the new TURF SURVEY, he may consider that no such record shall be relegated to the archives unsupported by a thoroughgoing story about greenkeeping down in Georgia—that is, if repeated calls for such material from this office bear fruit. We have asked Mr. Livingstone to send in a report of his work in the South, and believe his contribution will be forthcoming.

The line at the bottom of each page in this Inaugural number reads, "Please distribute blanks on Page 15 . . . Thank you!" In order to print more and better material from month to month, it is necessary to increase the subscription list rapidly. Readers who find this modest first number of interest may be assured that future issues will be far more so, and your co-operation in handing to others interested in turf growing the subscription blanks printed in this copy of THE TURF SURVEY will be fully appreciated.

Please distribute blanks on Page 17. Thank you!



Rust Resistant Snapdragon



Double Nasturtiums



Dixie Sunshine Marigold

## NEW ANNUALS FOR THE CUTTING GARDEN

**M**OST annuals are so easily raised from seed that only a few are listed as more satisfactory bought from a grower in plant form. The following varieties have been noted in the new catalogues of Stump & Walter, 132 Church Street, New York, and the Templin Bradley Company, Cleveland, Ohio.

**RUST-RESISTANT SNAPDRAGONS.** The strain described as Super-Giant grows to a height of from two to three feet, and being base-branching, each plant when properly cultivated bears a mass of eight to fifteen spikes of bloom. The shades are pale pink, soft rose pink, yellow, crimson, and a coppery old-gold. Few annuals are in a class with these snapdragons as cut flowers, as the blooms are large on long full spikes, and due to definite rust-resisting habit the foliage is clean, healthy and broad.

**DOUBLE NASTURTIUM.** Since the first introduction of the double nasturtium every year brings forth new shades in this most decorative and desirable flower for cutting. Now we have the new Dwarf Double Golden Globe from Holland, which scored forty-five points of excellence. A full color range in dwarf doubles is offered by Stump & Walter this season. Our experience with nasturtium seeds is that practically every one germinates, therefore transplanting from a ten-foot seeded row should produce sufficient plants to yield table decorations in plenty from July until freezing weather.

**FANTASY ZINNIA.** This chrysanthemum-flowered zinnia is mentioned under the heading above, although introduced a year or two ago, because of the fact that it is undoubtedly one of the most showy cut flowers in existence, and fully as easy to grow as zinnias always have been. The color range includes the brightest shades of red, yellow and orange, as well as the popular pastel pinks and cream. Here is a zinnia which is shaggy in petal form, somewhat curled, and entirely missing the stiffness of the older types. Grown the past season with little attention to proper cultural methods, there was a mass of bloom for cutting in Ohio late in October.

**DIXIE SUNSHINE MARIGOLD.** All the old-type

favorites that were erstwhile so prim seem to be going "chrysanthemum-flowered," and here is a marigold which is a miniature of the exhibition or greenhouse-grown yellow chrysanthemum so prominently displayed in florists' windows in the football season. Growing to a height of 2½ feet, and of strongly branching habit, a clump of Dixie Sunshines yields cuttings of beautiful loosely ruffled deep yellow blooms until cut down by freezing weather.

**DAINTY LADY PETUNIA.** The January issue of Mr. Madison Cooper's *Flower Grower* features this as an entirely new shade in petunias. It carries the Award of Merit of the Royal Horticultural Society of England, and was given highest points among petunias sharing in the ten flowers given the Award of Merit of the All-American Selection Committee. Dainty Lady is yellow, single frilled in form, and is a compact-form half-dwarf grower. It has taken ten years of careful breeding to produce this novelty.

**FLAMING VELVET PETUNIA.** The All-American Committee awarded the only gold medal to this variety, which originated in Holland. Nine of the ten judges gave it seventy-three points. It is a rich, deep red, uniform in color and habit of growth.

**HARMONY MARIGOLD.** Here is something which is distinctively unusual in marigolds, with a full and somewhat quilled center of pure yellow, framed by petals of rich maroon. It is of the dwarf French type, and bears profusely over a long season.

While perennials constitute the backbone of the year-to-year cut flower garden, no gardener growing flowers for clubhouse decoration can afford to overlook plenteous plantings of annuals. Most of the sturdy types can be encouraged to throw out branches and bloom more profusely over a longer period if the plants are pinched back during that stage of growth after transplanting when the root systems are well established, and top growth is from five to eight inches high. Included among those which respond to such pinching-back methods are snapdragons, marigolds, and others which re-seed themselves each spring.

## Notice To Readers . . .

YOU are cordially invited to write the office of The Turf Survey, 1900 Superior Avenue, N. E., Cleveland, Ohio, expressing your opinions and needs in relation to the reading matter which you would like to have appear in the pages of this SERVICE MAGAZINE from month to month.

The Turf Survey offers all turf growers in the United States and Canada an opportunity to discuss individual problems in open meeting each month, and such inquiries and suggestions as are received will be given prompt and careful attention. The division of this publication entitled The Turforum is one in which member clubs ask the advice of the U.S.G.A. Green Section on specific problems of golf course maintenance, and each question is answered in such a manner that all readers of The Turf Survey may receive the benefit of expert advice from month to month. In applying any information given in The Turforum, localities from which the inquiries were sent should be noted, and differences in soil and climatic conditions taken into consideration.

Arrangements have been made for educational articles to appear in following numbers of The Turf Survey covering subjects listed below. Subjects allied to turf growing are infinite in variety, therefore many others will appear in addition to the following partial list:

- Soil Modification
- Top Dressing Mixtures and Methods of Spreading
- Fertilization of Several Types of Turfed Areas
- Seeding and Stolon Planting
- Planting and Maintenance of Turf Nurseries
- Cutting and Laying Turf
- Drainage and Irrigation
- Turf Weeds, Diseases and Insect Pests
- Golf Course Construction
- Care and Repair of Machinery
- Golf Course Records
- Planting, Rehabilitation and Maintenance of Lawns
- Building and Maintaining Sand Greens
- Planting and Care of Native Trees
- Concrete Construction
- Selection, Planting and Care of Shrubbery
- Planting and Maintaining the Cut Flower Garden
- Road Building
- Turf Maintenance Short Cuts

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