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The NATIONAL GREENKEEPER and TURF CULTURE

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The Editor's Chair

IT HAS occurred to me that the editor and his readers should be more intimate and that an exchange of frank and honest opinions on the problems of turf culture would be beneficial and interesting to all concerned. So this is our column where we can talk freely through the printed word, and your suggestions and criticisms always constructive and for the good of those engaged in turf culture, are always welcome.

* * *

TIME was when the greenkeeper of golf courses and the groundskeeper of estates, cemeteries, parks and schools and college grounds was secretive. He never divulged his way of doing things. If his plans were successful he smiled, if they weren't he kept still. He seldom conferred with others in his line of work. He had no guidance except his common sense and experience. Until the NATIONAL GREENKEEPER came into existence there was no medium of up-to-date information; just a series of pamphlets from obsolete political sources.

* * *

NOW the door is open and the sun shines on both sides of the street. We shall have free and unfettered speech and a column of type to say things, that encircles the globe. Great day—let's go.

* * *

ALONG in this morning's mail, right out of a blue sky, comes an article on "Iron Sulphate" from Ludwig Erb, greenkeeper, Philipsburg Country Club, Philipsburg, Pa. Erb is a thinker and he has delved deep into the history of iron sulphate and its use with plants and grasses—also why it eliminates weeds and stimulates plant growth. He combines years of personal experience with authentic history from England thereby completing a world-wide picture. Watch for it in a later issue.

ONE thought I have had in mind for years is a medium of information on employment. For instance, here is a man experienced in the growing of fine grasses and shrubs and plants. He may be, through no fault of his own, out of a job. His life's work may be wasted if he has to start anew on a different vocation. Someone is in dire need of his knowledge and experience. So I propose an editorial section in the NATIONAL GREENKEEPER and TURF CULTURE wherein those who are looking for new positions may tell those who are in need of greenkeepers, gardeners or groundskeepers that their services are available. On the other hand owners of estates and superintendents of parks, cemeteries and school and college grounds may know where they can secure the services of a first-class, experienced man. It works both ways.

* * *

WE WILL publish "help wanted" ads free for one insertion. Additional ads will be 50c each. For those who are seeking positions in any one of the many fields of turf culture we will insert one "position wanted" advertisement for our subscribers free of charge. Extra insertions will be 50c each, accompanied by currency, money order or check.

* * *

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Editor.

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RACINE, WISCONSIN

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Very truly yours,

JACOBSEN MANUFACTURING COMPANY.

OTJ:S

(Signed) **O. T. Jacobsen.**

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The NATIONAL GREENKEEPER *and* TURF CULTURE

The only trade journal in the world devoted to the growing of fine turf grasses.

Rehabilitating Old Golf Courses

By GRANGE ALVES, *Pro-greenkeeper and Manager*
Acacia Golf Club, Cleveland

Reprinted from address delivered at the Annual Greenkeepers' Educational Conference in Chicago

OUR worthy president, Mr. MacGregor, has greatly honored me with the task of discussing with you a most interesting subject—the rehabilitation of old golf courses. In delegating this privilege to me, I can sense a certain degree of foresight in the mind of Mr. MacGregor. It may be that he is an admirer of our newly-elected president of the United States, and is hoping to have a portion of the glory in bringing back our lost prosperity, and in returning ten million unemployed to work. If we could convince our several thousand country clubs of the advisability of building their golf courses all over again, the situation as to the unemployed would begin to clear up immediately. This would be very easy to do, if only the clubs had something to use for money.

It is true enough that hundreds of golf courses could stand a lot of revamping and reconstruction . . . that alterations would make the game more interesting for hundreds of thousands of players. A necessary preliminary in each instance of rehabilitation, however, is the dull job of balancing the country club budget.

In 26 years as a professional greenkeeper, and golf architect in the United States, I have seen the



Very few men (I know of no other) combine in their knowledge and experience every department of golf course construction and management as does Grange Alves. He built the Acacia course and many others—he acts as pro and instructor—he has charge of the maintenance of the course—and he serves as manager of the clubhouse. That takes brains and Grange has them.—Editor.

courses undergo many changes. When I came to this country from Scotland in 1907, golf had been under way here for nineteen years, but was still in the embryo stage.

ST. ANDREWS ON THE HUDSON WAS FIRST CLUB

THE first golf club in the United States was organized at Yonkers, near New York City, Nov. 14, 1888. The club was called St. Andrews, and Robert Lockhart, born in Dumferline, Scotland—the home town of Andrew Carnegie—was the organizer. Lockhart, making numerous trips to Dumferline as buyer for his firm, came to the belief that the United States should not be without this indispensable adjunct to civilization.

At Yonkers, Lockhart attracted an enthusiastic recruit in Jack Reid, also from Dumferline, and the first games were played in Reid's orchard. Reid was elected president of the first club, Lock-

hart declining that honor because it was necessary for him to be abroad so much of the time. A certain John C. Ten Eyck, of historic Dutch stock, was the secretary. It is with considerable satisfaction that I go into detail about these two Dumferline "bairns" and the origin of golf in this country, as it

happens I recently won a bet as a result of an argument on some of the facts.

In the beginning, courses for the playing of the royal and ancient game in this nation were of rather painfully plain design. The putting greens would lead you to believe they were laid out with a plumb lever, square and compass. The greens were almost all perfectly round or perfectly square, and the putting surface practically flat. These greens were generally located in hollows or gulleys, where nature would do the watering, irrigation at that time being considered out of the question. This enabled them to hold all available moisture.

Driving tees were small and square and bunkers had face designs like stone walls. Players did not expect perfect playing conditions in those days; this was before the day of extravagant spending; players were not taxed heavily, and they made the best of what was available. At that, there was one hole that was far superior to anything we have today—the nineteenth.

RUBBER CORE BALL CHANGED EVERYTHING

THE first great change in everything relating to golf courses came about 1903 and 1904, when the old gutta percha ball went into the discard, and was superseded by the Haskell ball, with a hard rubber core. The new ball lengthened drives, and in fact, all shots, many yards, and players had to adjust themselves to new conditions, because of the ball's liveliness. Naturally, this brought a necessity for rehabilitating and lengthening the courses. This meant purchase of more land, and almost every club faced the problem. Careful consideration was given all plans, but by 1910 the reconstruction generally was well under way.

It was about this time, I believe, that the big golf "boom" began. The game grew by leaps and bounds. It was about this time, too, that the first fairway power mower, manufactured by the Coldwell Mower company, was introduced. The horse departed from the fairways, and his leather boots were tossed on the ash pile.

The knowledge gathered in these rehabilitation and enlargement processes has been of inestimable value to the study of golf architecture. Credit for the rapid advancement of the game can be given largely to the lively ball.

MANY OLD COURSES STOOD THE TEST OF TIME

MANY of those courses rebuilt 20 to 25 years ago have stood well the test of time; they remain, today, fairly modern and interesting. Others have lost their attraction; clubs find their members drifting away to other organizations with more recently-built layouts. Then, too, we have the clubs that started modestly with nine-hole courses, desiring at the time of organization only a "place to knock the ball around." Members of these younger clubs soon want a real course, and eventually, have to dig down in their pockets and build one.

So the subject of rehabilitation, reconstruction and enlargement is always with us. It is a matter that requires a great deal of study. Primarily, the club's officials, who must shoulder the responsibility for whatever is done, should consider first the size of their pocketbook. It is much the same as in going abroad. The steamship company offers you the choice of first, second or third-class passage. If you take first-class, you get the milk and the cream; if second class, the milk without the cream; if third class, you get what is left.

This same thing applies to the original establishment of a golf club. The club that has the vision and the money to buy the best expert knowledge, and supervision, as a rule always gets the best results and has to worry the least of the future. If the course is built of championship caliber and on proper land, with favorable soil conditions, so that maintenance costs will not be excessive, that course is destined for success.

The clubs that suffer the most, in my opinion, are those clubs that, with rehabilitation in mind, seek the most for the least amount of money. They generally wind up confronted with everything wrong, and have to begin all over again.

EXPERIENCE HAS BEEN A GREAT BUT COSTLY TEACHER

EXPERIENCE has been a great teacher, and in the era of inflation and overproduction, from 1920 to 1930, there were formed some golf course contracting companies that I blame, along with too credulous club officials, for disastrous results. Eventually new expenditures of money were necessary to correct conditions that, if the job hadn't been let out on too close a margin, would have been right in the first place. It seems to be true that you get what you pay for and no more.

I am not a believer of contracting golf course work. I believe in the old-time practice. My suggestion to any club contemplating changes is to secure the services of a competent architect and greenkeeper. Hold your architect responsible for the planning and frame-work of putting greens, driving tees, traps, etc. Then the greenkeeper should be held responsible to the architect in supervising this part of the work. He should employ whatever equipment and labor is necessary at the lowest possible figure.

After the plans are completed, the job is the greenkeeper's. He knows the texture of his soil, what are its requirements, and what it will take to bring it to perfection. If he grows up with the course, he is familiar with every detail from the beginning. I am sure there are many clubs that can vouch for the success of this practice, who have learned that it is more satisfactory and much more economical.

You have often read articles appearing in our golf magazines, of certain individuals building a standard 18-hole course at a cost that would in our district at least, hardly begin to purchase the grass seed, fertilizer, and galvanized pipe. These articles read well, but if you take time to go and investigate, you will find that these projects generally are built from the top down instead of the bottom up. Whether building old or new golf courses, one of the most expensive mistakes a club can make is the above type of construction.

Experience has taught me that wherever this kind of construction has been practiced, it has meant beginning all over again. If club executives, who have their club welfare at heart, give the proper attention to procuring the right set-up to solve their problem, they will save money in the end.

It also can be said that there are many clubs existing today, who are striving to correct a wrong start, who would have been much better off if they had started more modestly. In the beginning, they were not financially ready, but they insisted on having a full length 18-hole layout. It is the old story of "keeping up with the Joneses"—trying to maintain the same standard of living as a neighbor, who may have or be making much more money.

NINE GOOD HOLES BETTER THAN 18 POOR ONES

A CLUB that hasn't the backing to build a real 18-hole layout should do the next best thing—con-

struct nine holes, and build them right. You can always add to a golf course, but trying to straighten out 18 holes that are a hopeless hodge-podge of mistakes, is a task that requires real financing. I should think a club member would prefer nine holes well-built than 18 gone to destruction through trying to stretch \$50,000 to \$75,000.

There is just one more thought I would bring to your attention, having to do with the matters of accessibility and tax rates. There are often clubs located near city limits who have contemplated making alterations on their courses. They hire the best architect possible to recommend his ideas, and when he begins to deal with the problem, he generally concludes by seeking from the club executives information as to land valuation. This is the deciding factor in making his report.

If the information is unfavorable, a conscientious architect tells the club the truth. He advises them to sell out and get another site, further from the city. If, with an excessive tax valuation, he goes ahead with the work, the membership soon finds itself burdened with high dues, assessments, and you hear the complaint about the high cost of golf. This is bad for the game; it creates the impression that only millionaires can play. What the members of these highly accessible clubs are paying for is not golf, but for the upkeep of their property. Further from the city, even though it did take a few more minutes to get there, they would be much more contented, and the club much more successful.

In this day and age, transportation is becoming more and more rapid with every succeeding year. What used to be a 45-minute drive is now less than half an hour. I bring up this point because it may happen that in the audience are greenkeepers or members of clubs who are studying rehabilitation problems. Or it may be, that some of you come from clubs that are faced with virtual extinction because of diminishing revenue in the face of taxes that refuse to come down to any appreciable degree. There is but one solution; to give up the club built on expensive land, and start again elsewhere.

SOUND ADVICE TO THE GREENKEEPER

I MIGHT wind up this talk with some advice to the greenkeeper—advice that in most instances hardly is needed, but that does no harm by repetition.

Insects, Their Habits and Control

By DR. W. P. HAYES, Associate Professor of Entomology,
University of Illinois, Urbana, Illinois

Reprinted from address delivered at the Annual Greenkeepers' Educational Conference in Chicago

A SOLDIER engaged in battle would want to know about his enemy—his strength in numbers, when and where he will attack and particularly where he is weakest. The same is true in man's fight against injurious insects. If he knows their habits and life histories, his combat against them can be carried on more profitably and efficiently. Like Achilles with his vulnerable heel, nearly all insects have a time or period in their life when they are more susceptible to control operations. On the other hand, most insect damage comes only at certain times of the year or in certain yearly cycles.

As an example, the greatest injury by common white grubs may be expected the second summer after the heavy flight of adult beetles which occurs every third year. Because such knowledge is helpful in combating any particular pest, it is essential that you know the habits and life histories of those which you are attempting to combat.

FIGHTING INSECTS INTELLIGENTLY

THE problem of fighting injurious insects involves more than an acquaintance with habits and life cycles. One should know the processes of nature which develop natural checks to their outbreaks. What will it profit to employ some costly or laborious control measure if in a short time nature will do the work for us?

Insects have many natural checks, heavy rains, hot, dry, or cold weather, fungus, protozoan and bacterial diseases, parasites and predaceous enemies. Webworms are with us every year, but thanks to their natural enemies they are seldom present in sufficient numbers to attract attention by their injury as they have the past two seasons.

Two or three reasons brought on our recent webworm outbreaks. The winters preceding the out-



Dr. Hayes' address here on insect control is a masterpiece. Like our chief executive he uses plain language and sticks to facts. More power to him. The author has described the problems of municipal course maintenance in a most accurate and interesting way.

breaks of 1931 and 1932 were so unusually mild that a greater number of overwintering forms survived to start the summer generations. The dry summers were unfavorable to their parasitic and predaceous enemies and, moreover, caused the webworm moths to concentrate their egg-laying in artificially-watered areas such as golf greens. Weather brought about these outbreaks and weather will eventually reduce the webworm numbers to a negligible factor for a series of years.

When nature lays down on the job of holding injurious insects in check, it is necessary to use artificial or applied methods of control. Against insects in the soil, we must resort to some measure involving cropping, cultivation, the use of soil insecticides, or fertilizers.

CONTROL OF SOIL INHABITING INSECTS

INSECTS affecting the turf of golf courses may be roughly classified into two groups, those working above ground and those whose damage occurs at or beneath the surface of the soil. For the purpose of this discussion, only those insects whose injury would rate them as soil insects will be considered. Prominent among these are the many kinds of white grubs, webworms, and ants. Numerous measures have been advocated for the control of soil-inhabiting insects. It is evident that their practical application involves more than a study of the effect upon the insect itself. Those engaged in the control of soil insects should recognize the importance of the soil problems which are connected with the subject of insect eradication.

There are many factors which must be taken into consideration in any attempt to control underground insects. In general, it may be stated that the insect, the plant and the soil type determine the

methods to be applied. It is obvious that insects attacking grass roots in the rough and fairway cannot be combated in the same manner as those which are concentrated in the soil of a green where it is more practical to apply chemicals, or other expensive measures to secure control. In particular must it be emphasized that a knowledge of the soil and its reactions is fundamental to the intelligent application of control practices.

The reaction of any treatment upon the physical, chemical, and biological factors of the soil must be known. Insect control measures should not be attempted simply because they control the pest. Subsequent developments may show that they seriously injure the constituency and productivity of the soil. The use of control measures for underground insects, therefore, should take into serious consideration:

- (1) Their effectiveness against the insect.
- (2) Their effect on the physical properties of the soil.
- (3) Their effect on the chemical properties of the soil.
- (4) Their effect on different types of vegetation.
- (5) Their effect on other biological factors such as parasites, predators, fungus diseases, nitrifying bacteria.
- (6) And finally, the cost of treatment.

THE USE OF SOIL INSECTICIDES

A LARGE amount of work has been done by various investigators relating to the use of insecticides for the control of underground insects. The comparatively recent introduction of the Japanese beetle into the United States has stimulated research along this line and considerable investigation is being conducted in various localities. Soil insecticides may be used as poison baits, fumigants or direct poisons.

The list of materials which has been suggested for use is extensive and includes the more important items of carbon disulfide, calcium and sodium cyanide, kerosene emulsion and various arsenicals. These are all chemicals which must have some effect on the soil. We know very little about what changes they may cause in the structure, texture, composition, and organic matter in the soil nor do we know whether injurious accumulative effects occur through repeated applications.

It has been pointed out that with such chemicals it is necessary to determine the maximum dosage non-injurious to the grass, the minimum dosage that will kill the insect and the influence that temperature, moisture and soil chemicals will have on the effectiveness of the treatment applied. In other words, a definite ratio must be established between the least killing strength and the greatest dosage which can be applied with safety to the plants. It should be remembered when you are trying to kill soil insects, that plants are often more easily killed than insects.

REPELLENTS AND THEIR USE

THE use of repellents has frequently been recommended to prevent injury by soil-infesting insects. They are thought to serve as preventatives rather than remedial measures to forestall injury to seed and roots or to prevent invasion of the soil by injurious species. So many conflicting results have been obtained with their use that they are not safe to recommend. There is need for further investigation in this field to develop satisfactory repellents that are objectionable to the insect and harmless to the plants. We know little of their effect on soil conditions.

THE USE OF FERTILIZERS

THE use of various fertilizers such as kainit, lime and nitrate of soda, has been recommended for the control of underground insects. In some instances, the chief benefit has been that of stimulating growth, which thus enables plants to overcome a moderate amount of insect injury. It is well known that weak plants suffer more from insect attacks than healthy ones. Inorganic fertilizers have little or no insect-killing properties and some organic fertilizers, such as barnyard manure, are too attractive to certain species of white grubs to even be thought of in terms of an insecticide. Fertilizers are now being rather widely used as a carrier for certain insecticides that are applied to the turf.

PRECAUTION IN SOIL TREATMENT

IN THE following discussion of some of the more important insects injurious to turf, it should be emphasized that the known control measures have not been worked out for all types of soil or for all the different kinds of turf. What will work in one case may be useless and even harmful in another. Arsenate of lead, for example, is a Department of Agri-

culture recommendation for protecting turf from the Japanese beetle. It is recommended with the claim that it will protect turf over a period of five years. The Kansas Experiment Station and others have found that arsenates in the soil caused plants to be stunted and their root systems were weakened. Such conflicting results can be attributed to treatments made under different soil and weather conditions.

As a precaution in the use of any treatment, it cannot be too strongly emphasized that extreme care be exercised in its use. It is suggested that you know in advance what effect it will have on turf under your conditions of soil and climate. Test out the recommendations in small experimental plots and follow recommendations explicitly. The entomological and soil experts of the United States Department of Agriculture or those of the various State Experiment stations are always willing to advise and help.

WHITE GRUBS

WHITE grubs are the immature, growing stages of certain beetles variously known as May beetles or June bugs. This group contains the Green June beetles, Japanese beetles, Asiatic beetles and Asiatic garden beetles. There are nearly one thousand different kinds of these beetles in the United States. Many of them are not injurious. One group known as our "Common white grubs" has over one hundred different species widely distributed over the United States. Illinois is known to have about 35 different kinds of common white grubs.

Many of the known species are quite local in their distribution. The Japanese beetle, which was imported into this country about 1916 is perhaps the most injurious species in the eastern states, while the Green June beetle is a serious pest of turf in the south. Injury to greens by these insects is of two kinds—feeding by the grubs on the roots of grasses, and by the throwing up of small mounds of earth when the grubs or beetles emerge from the soil. The adult Japanese beetles and the grubs of the Green June beetle are especially bad in damaging the soil with emergence holes.

Although the various kinds of grubs and beetles differ considerably in their life habits—some flying at night, others by day—they all pass, during their development, through four life stages called the egg, larva, pupa, and adult. The adult beetles pene-

trate the turf to lay eggs which hatch into larvae or grubs whose length of life is quite variable with different species. At the end of their period of growth the grubs pass through a resting stage known as pupa, which is similar to the chrysalid or cocoon stage of a butterfly. After two or three weeks the pupae change to adult beetles.

The beetles then emerge from the ground, and fly to trees to feed and mate. Most of these beetles fly at night, but the Japanese beetle and the Green June beetle fly during the day. The day-flying species usually require one year to complete all stages of development, while the night fliers may take one, two or three years. Consequently we have some species occurring abundantly yearly, others every two or three years.

Before the arrival of the Japanese beetle, as pointed out above, little experimental work had been done on protecting turf from grub injury. Since then, many things have been tried. Practically all our treatments for grubs have been worked out against the Japanese beetle and fortunately, because of the close relationship and similar feeding habits, any Japanese beetle remedy for grub control should be useful against all grubworms.

CARBON DISULFIDE EMULSION IS EFFECTIVE

UNTIL recently the standard recommendations for Japanese beetle grubs in turf was the use of carbon disulfide emulsion. This treatment is fully described in general Bulletin No. 440 of the Pennsylvania Department of Agriculture. The material is difficult to prepare and its use is costly. The emulsion and labor will cost about \$20 to treat a green 80 by 90 feet. This emulsion can be purchased at 15 to 16 cents a pound in 500-pound lots, or the materials may be purchased and mixed by the operator. The ingredients for mixing consist of 1 part by volume of cold water, soluble rosin fish oil soap, 10 parts by volume of carbon disulfide and 3 parts of water. The mixture is emulsified by rapid churning and should be used soon after mixing. It is then diluted at the rate of 1 quart of emulsion to 50 gallons of water and applied at the rate of one quart per square foot of turf. It should not be sprayed on under pressure, but poured or allowed to flow on the turf.

Recent experimental work has shown that arsenate of lead when mixed with the upper layer of soil will control grubworms and will not unduly