NEWS LETTER

'TIS NOT ENOUGH TO RUN WELL,
UNLESS YOU SET OUT IN DUE TIME.

--- French Proverb.

AUGUST

1937

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VEGETATIVE PROPAGATION OF CREEPING BENT AND VELVET BENT

(In going thru our files recently we came upon the following treatise by the late Dr. C. V. Piper. It is interesting to note that practices now in vegetative planting are little different from those advised by Dr. Piper some fifteen years ago.—Editor.)

Any grass can be propagated in at least two ways—one by seed, and the other by a portion of the parent plant. In bunch grasses a tuft can be subdivided into many portions, each of which will grow readily. In creeping grasses a new plant can be produced easily from a single joint of a rootstock or runner. This can indeed be done with nearly any grass, but it is particularly easy with creeping grasses. Indeed, it has long been employed by farmers in planting fields to such grasses as Bermuda and Para. This method of planting is called vegetative propagation.

Some years ago, in studying the behavior of creeping bent (all in all, the best of putting green grasses), it was discovered that a single plant, in moist, cultivated soil free from other plants, would make a mass of turf 6 feet in diameter in a single year. The turf really consisted of innumerable runners. or stolons, radiating from the start at the center and rooting at each joint. It was at once evident that this grass could easily be propagated vegetatively. The runners were lifted, chopped into joints about 2 or 3 inches in length, scattered over well-prepared soil, rolled in, and then covered lightly with soil. The quickness of growth of the joints thus planted is truly astonishing. At first only small plots of turf 8 by 8 feet were thus produced, the turf from each parent plant being perfectly uniform in color and texture. The finest of these were selected for further investigations. The method was soon adopted by greenkeepers, and in the fall of 1922 about 150 putting greens were planted vegetatively.

There are two distinct operations connected with vegetative planting of turf: (1) planting the nursery or increase plot, and (2) planting the putting green.

CREEPING BENT

Planting the Nursery Rows.

It is necessary to produce a quantity of the stolons before any extensive planting for turf can be done. These stolons multiply rapidly when planted in a nursery. The land should be prepared as if for seeding a cultivated crop and should be as free from other grasses as possible. Trenches about one inch deep and six feet apart are made and the stolons planted in these trenches in a continuous row. The stolons are then covered with about one-half inch of soil, and tamped down. This can be done by walking on the row or with a tamper or a narrow roller. If the planting is done in the fall the creeping bent will grow in one year into a tangled mass of runners three feet on each side of the original row or six feet in width. Of course it is necessary to keep the weeds out of the grass and to keep the soil between the rows loose. One square foot of the creeping bent stolons which have been grown in a nursery row is sufficient to plant from ten to twenty square feet of putting green, depending on the thickness of the mass of stolons. Therefore it will take about 100 linear feet of row to plant one average-sized putting green.

Planting a Putting Green.

The putting green should be prepared exactly as for seeding. In addition, there should be a pile of top-dressing convenient to the green for covering the stolons after they are planted. It will take about ten cubic yards of top-dressing to cover a 6000-foot green. This should be one-third top soil, one-third sand, and one-third rotted manure, mixed and screened for best results.

The stolons are cut into pieces about 1-½ to 2 inches long. An ordinary farm fodder cutter may be used to cut the sod into chunks, which should then be picked apart by hand. These pieces of

stolons are spread evenly over the green and a light sprinkling of top-dressing added. The next step is to roll lightly and add more top-dressing until the pieces of grass are just covered. The layer of top-dressing should be about three-eighths to one-half inch in thickness. If the covering is too heavy the grass is slow in starting growth; if too light, there is danger of the grass drying out and dying.

As soon as a portion of the green is planted it should be watered with a fine spray and kept continually moist for two or three weeks, after which watering every second day will be sufficient.

There is this caution to be given in vegetative planting,—**never let this living material become dry.**

The cut runners should be spread soon after they are picked apart and the top-dressing added immediately. While creeping bent stolons with some dirt attached can be shipped long distances and will keep alive indefinitely if open to the air and kept moist, not over half an hour should elapse from the time the chopped runners are spread on the green before they are covered with top dressing.

VELVET BENT

The fine velvet bent may be propagated in the same manner as creeping bent except that it is necessary to use tufts of the grass in the nursery and the runners should not be chopped up for planting. Velvet bent will not stand the rough treatment recommended above. There is little trouble, however, in separating the stolons of velvet bent, which are planted entire when turf of that grade is desired.

AUGUST MEETING

The club met on August 2nd with Ed Buecher at the Manchester Country Club, Manchester, N. H. In the morning there were demonstrations of two rough cutting machines, the National Mower, distributed by the Power Lawn Mower Service, and the Toro Parkway, distributed by the New England Toro Co. The National had a 40″ sickle bar, rode on two 16 x 4 tires, and was powered with a 1 H.P. Briggs and Stratton motor. The Toro had a 36″ sickle bar, 18 x 4 tires, and a 3 H.P. motor.

At the regular business meeting Ted Anderson of the Ellenwood C. C., and Richard Mansfield of the Northfield G. C. were elected to membership.

The winners of the 18 hole golf tournament were:

Ted Swanson, 1st net, 80-12-68.
Ed. Buecher, 2nd net, 104-34-70.
Les Wildgust, 3rd net, 101-30-71.
Steve Hannon, 4th net, 96-25-71.
Lloyd Stott, 5th net, 98-24-74.

TALKS ON TREES

By E. Porter Felt

Bartlett Tree Research Laboratories
Stamford, Conn.

Roadside signs indicate directions, places to go, things to buy. The story is short and to the point. Can you read tree signs?

Stripped woodlands in southeastern New England usually mean bad gipsy moth conditions; in some cases on hundreds of acres.

Browned elms in the Hudson Valley and New England localities are mostly injured by elm leaf beetles. The grubs eat only the softer portions of the leaves. The leaves of elms along the New England Route 7, especially near Kent, Conn., show bronzing, the work of a lace-bug and in cities of northern New Jersey, there may be a grayish-green cast, the work of a leafhopper.

Grape vines, roses, horse chestnuts, sweet cherry trees and sassafrass are a few of the woody plants badly damaged by millions of Japanese beetles. The pests are locally extremely abundant within sixty miles of New York City and in a larger area centering on Philadelphia.

The fall webworm with its large filmy webs enclosing the tips of branches is somewhat common on a variety of trees.

The work of the willow leaf beetle produces a grayish or brownish foliage, a condition which may prevail through much of the season. The willow is unfortunate in being attacked also by the willow scab fungus, a disease which has killed thousands of these beautiful trees in New England.

The Lombardy poplar with its slender columnar form is a striking landscape feature. Dead branches and occasionally dead trees indicate the presence of this serious poplar disease.

All of these troubles except the leafhopper, the lace-bug and the fall webworm have come to us from abroad. The signs of their presence displayed so blatantly along roadsides and in fields indicate their destructive potentialities and may well arouse questions as to their ultimate effect on tree welfare. Here is a novel field for car window meditations.

Certain introduced insects, really additional hazards, are most evident in early July in the northeastern United States.

This is the case with the Japanese beetle, the Asiatic garden beetle and the Oriental beetle, all introduced about 1916 and less than half an inch long. The grubs are pests of lawns and golf greens. The Japanese beetle is a dayflyer with brilliant green and coppery hues and marginal white dots on the hind end of the body. The brick-red, nocturnal, Asiatic garden beetle resembles a small May or June beetle. The Asiatic beetle, yellowish-brown with black markings, flies in the day.

Japanese beetles have become widely established in the northeastern United States. They are voracious feeders upon sweet cherry, apple, horse chestnut, linden, elm, rose and grape vines, to mention a few of their favorite hosts. They fly from the latter part of June through September, being most abundant in July and early August. They are veritable scourges in some localities, defoliating fruit trees and ornamentals while the grubs have destroyed many lawns and seriously injured golf greens.

Asiatic garden beetles usually attract notice by injury to such plants as asters, chrysanthemum, salvia, carrots, radish, peach, plum and apple trees. The beetles remain in the ground during the day, their depredations being committed after nightfall.

The yellowish, black-marked, moderately stout Asiatic beetles fly in the day time. They may be found in the blossoms of white roses and hollyhocks, especially the former. They do little feeding and if it were not for the work of the grubs in the lawn, the insect would not be considered a pest.

Early and thorough spraying with a poison will protect ornamentals and fruit trees from the ravages of the Japanese beetle and the Japanese garden beetle. Poisoning the sod is the most satisfactory control for the grubs of these three species.

The effects of hail storms on agricultural crops, especially corn and tobacco, are well known. They frequently cause severe losses.

The following is a record, unusual in character, of the effects of hail on shade trees. The storm occurred May 23rd on the property of Mr. F. A. Bartlett, South Kent, Conn. The effected area covered several square miles in a generally wooded area, the forests from a distance appearing as though they had been stripped of leaves by the forest tent caterpillar or gipsy moth. The hail stones were reported to be disk-shaped with a diameter of 2¼ to 2½ inches.

The severity of the injury was indicated by the practical loss of all foliage on hickory, oak and other trees with large leaves and the nearly complete loss of foliage on trees with smaller leaves, such as birch. Many of the smaller branches or stems of the white oaks, red oaks, red maples, flowering dogwood and birch were badly bruised by the hail stones, the bark being cut from areas the approximate size of a nickel and in some cases the wood was bared over half the circumference of the twig. There were many branches three feet long with fifteen to twenty such wounds. In some cases the wood itself was cut. Small white pines some five feet high were damaged in this way along the main stem and a number of the smaller branches were cut off by the hail.

The small evergreens were probably ruined for ornamental purposes and may eventually die. It is probable that many of the more badly damaged twigs will suffer a similar fate, although new leaves were beginning to appear ten days after the storm. The bruised areas afford excellent opportunity for invasion by fungus diseases, while the loss of leaves and the lowered efficiency of the twigs have alike produced conditions favorable to invasion by fungus diseases, especially wood rots. The lowered vitality resulting from the damage may be followed in the oaks by invasion of two-lined chestnut borer and in the birches by attack of the bronze birch borer.

Shade trees damaged as seriously as those described above should be trimmed to eliminate the severely damaged wood. They would be greatly helped by feeding to hasten the leaf growth and thus

materially assist the recovery of the trees.

The history of a planting may be read in part from the trees. The information thus gained may be of great service in avoiding similar troubles elsewhere.

Some four years ago a number of obviously ailing white birch trees were examined in a small Columbia County, N. Y. cemetery. The trees had been planted approximately thirty years and although there were but thirty-three standing it was evident that originally there had been four rows of sixteen trees, a total of sixty-four. At that time sixteen of the thirty-three remaining trees were dead or had the greater portion of the tops killed and the remaining seventeen were so badly infested by the bronze birch borer that it was expected they would be in nearly the same condition another year. In June 1937 there remained but four of the original sixty-four birches, two dead or nearly so, and the others in almost the same condition.

The above record throws light upon the death in recent years of thousands of ornamental birches in the northeastern United States. The cemetery was in a light, gravelly soil where drought effects would be at the maximum and plant food approximating a minimum. Birches grow in such soil but attain their most satisfactory development in moist, rich areas. The average lawn with its closely clipped surface and the constant removal of grass approaches the condition of this cemetery except that in most lawns the grass may be somewhat more vigorous. It is possible for a lawn area to produce a luxuriant sod with comparatively little benefit for the underlying roots of trees. Both the birch trees in the cemetery and many of those which have died upon lawns were greatly weakened by malnutrition and drought extremes in mid-summer and the combined effect of these produce conditions favorable to invasion by the bronze birch borer. This insect commonly kills first the tops and later the lower portion of the trees.

Experiments at the Bartlett Tree Research Laboratories have shown that early infestations by this destructive borer can be checked and frequently overcome by feeding to restore a vigorous growth. Feeding is a valuable preventive. It pays.

St. Elmo's fire, or the brush discharge of electricity is not commonly associated with trees, yet it kills them.

A striking example was seen in 1934 on a 38-inch elm at Dartmouth College. A professor observed at the instant of a violent lightning stroke on a tree 250 feet distant a flaming or brush discharge from every twig and leaf of this elm. Two or three days later the leaves on branches here and there withered and in ten days the tree was dead. This was caused by an earth-to-cloud discharge, a current which frequently produces no external injury in wood or branch. In this case it was probably a resurge from the bolt which struck the tree 250 feet away. There were numerous brown parallel lines about the width of a pencil mark in the cambium running with the grain from the roots and out on individual limbs to twigs with a diameter of less than half an inch.

In June 1935 similar injury, though not so severe, was observed on the twigs and smaller branches of a sixteen inch sugar maple at Bolchertown, Mass. The electrical current killed that year approximately 80% of the foliage and observations a year later showed scattering bunches of dead leaves here and there, an additional dying back, presumably from the injury of the preceding year. A few of the lower limbs with a diameter of two inches were dead.

A sugar maple with a trunk diameter of 20 inches at Brattleboro, Vermont, suffered in 1937 from a similar earth-to-cloud discharge. There was a violent thunder shower May 30th and on June 7th many tips commenced to wilt, and two days later there were spotted areas of dead leaves here and there throughout much of the top. Three days thereafter the tree was almost entirely brown. The killed twigs were drier than normal tissues and there was a distinct brown layer in the cambium. The brush discharge was not observed on either of these two maples. The most probable explanation is that both of these trees were killed by earth-to-cloud electrical discharges.

St. Elmo's fire as well as the thunder bolt may be rendered harmless to trees with well installed lightning rods.

The July meeting of the Rhode Island Greenkeepers Association was held on July 12th at the Winnapoag G. C. in Westerly.

JOHN SHANAHAN MEMORIAL TROPHY WON BY WILDGUST AND McSPADEN

The annual greenkeeper-pro tournament for the John Shanahan Memorial Trophy was held on July 19th at the Woodland Golf Club, Auburndale, Mass. Play this year was in Scotch foursomes, with selected drives, and this new type of play for this tournament proved popular with most of the field. Scoring was particularly good, with at least half of the net scores under seventy.

The Trophy, which goes to first net, was won by Les Wildgust and Jug McSpaden of Winchester with 81-22-59. Second net went to Paul Wanberg and Art Johnson of Weston with 82-22-60. The best score turned in was a gross 71 by Ralph Thomas and Jerry Gianferante. Three teams tied with gross 72, Walter and Tom Howe of Wellesley, Emil Mashie and Alex Briggs of Oak Hill, and Tom Mahan and Phil Frederickson of United Shoe.

The summary.

Harold McSpaden, Leslie Wildgust, Winchester—81-22-59.

Art Johnson, Paul Wanberg, Weston—82-22-60.

Henry McIvor, Art Anderson, Brae Burn—79-18-61.

Bill Cosgrove, Simeo Braio, Wachusett—79-17-62.

John Bernardi, Frank Wilson, Charles River—81-18-63.

John Horgan, Ed Ohlson, Segregansett—75-12-63.

Joe Stein, W. J. McBride, Sandy Burr—79-16-63.

Jack Ford, John Counsel, Salem—76-13-63.

Art Gusa, John Latvis, Tatnuck—80-17-63.

George Apple, L. G. Stott, Meadow Brook—82-18-64.

John Homan, Harold Mosher, Riverside—82-18-64.

John Freitas, Manuel Braga, Bristol—87-22-65.

Paul Yurick, Joe Oldfield, Stoney Brae—76-11-65.

Harold Cahoon, Ed Hanson, Concord—80-15-65.

Maurice Hyland, H. C. Darling, Juniper Hill—76-11-65.

Bob Crowley, Nick Bruno, Norfolk—75-10-65.

Lester Dunn, Steve Hannon, Winthrop—84-19-65.

Marty Higgins, Guy West, Fall River—80-14-66.

Clarence Gibney, Sam Mitchell, Ponkapoag—87-21-66.

Jerry Gianferante, Ralph Thomas, Monoosnock—71-5-66.

George Gordon, Martin Green, Wannamoisett—81-15-66.

Tom Howe, Walter Howe, Wellesley—72-5-67.

Roland Wingate, Howard Farrant, The Country Club—82-15-67.

Leslie Cottrell, Ted Swanson, Bear Hill—77-9-68.

Ed Burke, R. W. Peckham, Newport—73-5-68.

Jack Leary, J. J. Fitzpatrick, Scituate—81-12-69.

George Ford, P. Cassidy, Needham—81-12-69.

Steve Golbert, M. Sperandio, Marlboro—77-8-69.

Gene Anderson, Mike McDonough, Oyster Harbors—82-12-70.

Mike Haley, Bud Hayden, Woodland—84-14-70.

John Gilholm, Mike O'Grady, New Bedford—79-9-70.

Alex Briggs, Emil Mashie, Oak Hill—72-0-72.

Tom Mahan, Phil Frederickson, United Shoe—72-0-72.

Fred Lowe, Louis Maretti, Oakley—89-15-74.

Harry Nettlebladt, Tom Mattus, Pakachoag Hill—82-12-74.

H. B. Randall, A. M. Barney, Wampanoag—88-14-74.

Gab Gavatsos, Jim McCormack, Unicorn—83-8-75.

Charles McAndrew, John Sheehan, Albemarle—79-0-79.

Alex Bird, Cliff Hunt, Marshfield—79-0-79.

Jim Fogertey, Jim Ferme, Myopia—80-0-80.

John McGregor, C. Salter, Ould Newbury—84-0-84.

Charles Malloy, Ralph Wentworth, Wildwood—85-0-85.

Charles Chambers, R. D. Mansfield, Colonial—85-0-85.

Jack Harvey, Bill Margeson, Sagamore—86-0-86.

Ed Lally, Gene Mauro, Framingham—86-0-86.

George Aspacher, Bill Clark, D. W. Field—87-0-87.

Tony Slipkowsky, Tom Burke, Amesbury—92-0-92.

Accepting a Definite Offer

A pedestrian on a road that paralleled part of a golf course was hit on the head by a ball.

Recovering quickly, he rushed in a rage to the tee whence the ball had been driven and yelled:

"Who hit that ball? You'll pay plenty for this. You see this lump that's comin' on my head. Well, I'll sue you for $1,000."

Ensued some discussion, during which the pain of the blow disappeared, and the victim, somewhat mollified, asserted:

"Well, you didn't aim to do it, and to save a lot of lawin', I'll let you off easy for $10."

"But, my dear sir," protested the player who had made such a wild drive, "I saw you on the road. But didn't you hear me call 'Fore'?"

The victim paused a moment and replied:

"No, I didn't hear you say 'four' but I'll take it."

—Bank Notes.

Among the great epics in the English language are Lincoln's Gettysburg Address, Shelley's "Skylark," Burns' "To a Mountain Daisy," and Senator Ingalls' "Grass."

John James Ingalls, class 1855, Williams College, deceased 1900, statesman, scholar, was, among many other honored appointments, acting vice-president of the United States; president of U. S. Senate, and a writer of note. His "Tribute to Grass" follows:

"Lying in the sunshine among the buttercups and dandelions in May, scarcely higher in intelligence than the minute tenants of that mimic wilderness, our earliest recollections are of grass, and when the fitful fever is ended and the foolish wrangle of market and forum is closed, grass heals over the scar which our descent has made, and the carpet of the infant becomes the blanket of the dead.

"Grass is the forgiveness of nature—her constant benediction. Fields trampled with battle, scarred with the ruts of cannon, grow green again with grass, and carnage is forgotten. Streets abandoned by traffic become grass-grown like rural lanes and are obliterated. Forests decay, harvests perish, flowers vanish, but grass is immortal. Beleaguered by the sullen hosts of winter, it withdraws into the impregnable fortress of its subteranean vitality and emerges upon the first solicitation of Spring. Sown by the winds, by wandering birds, propagated by the subtle horticulture of the elements, which are its ministers and servants, it softens the rude outline of the world. Its tenacious fibres hold the earth in its place, and prevent its soluble components from washing into the sea. It invades the solitude of deserts, climbs the inacessible slopes and forbidding pinnacles of mountains, modifies climates, and determines the history, character and destiny of nations. Unobstrusive and patient, it has immortal vigor and aggression. Banished from the thoroughfare or the field, it bides its time to return, and when vigilance is relaxed, or the dynasty has perished, it silently resumes its throne from which it has been expelled but which it never abdicates. It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit in earth or air, and yet should its harvest fail for a single year famine would depopulate the world."

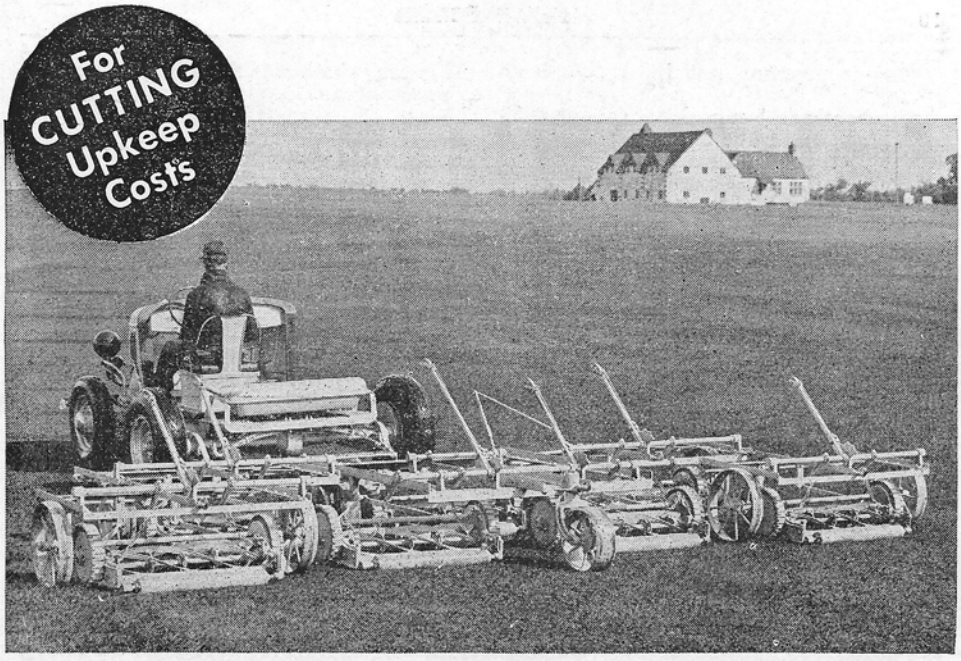
—Seed Trade News.

TURF INJURY BY A MANURE BEETLE

W. D. Whitcomb, Entomologist
Mass. State College Field Station

Considerable injury to turf on several golf courses was found July 12-15 from a small beetle which heretofore was not considered a serious pest. This beetle is one of the manure beetles and has no common name. Scientifically, it is called **Ataenius cognatus,** and belongs to the family Scarabaeidae which includes the June beetles, the Japanese beetle, and the Asiatic beetle. It is a native insect and has been found in most of the north central and northeastern states, usually near cow dung in pastures.

Injury to turf is caused by the grubs which live in the soil and eat the roots of the grass. In the most seriously infested spots the turf can be easily rolled back in large sections. Also, the holes which the beetles make in emerging from the soil might be harmful on greens but



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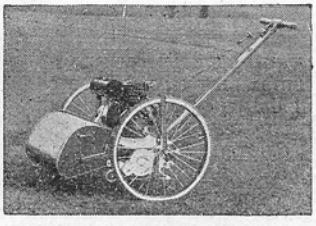

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so far injury has not been found on greens.

The beetle is 5 mm. long (about 3-16 of an inch) and about one-half as wide. When mature they are dark brown or black in color, but many of them are very light brown or tan in color when they first emerge from the soil. The grubs are about 1-4 inch long, white with a light brown head, and usually curled in a position typical of white grubs. The abdomen has a dark purplish appearance characteristic of grubs of this family which feed on soil.

Little is known about the life history but the beetles apparently spend the winter in or under dry manure and they may be active on warm days throughout the winter. It is presumed that the eggs are laid in the spring and grubs feed in the soil during May and June. There is probably one generation in a year, and the beetles which are appearing now (mid to late July) will live through next winter.

The standard control for grubs of this kind is the application of lead arsenate to the soil, and although no definite experiments are available observations on the infested golf courses indicate that such treatment is effective against this insect. So far, no serious damage has been observed on greens or approaches which have been treated with lead arsenate in recent years.

Since these grubs are small, it is believed that 3 pounds of lead arsenate to 1,000 square feet of turf is a sufficient dosage. This may be applied either as a spray in 12 gallons of water, or as a top dressing with loam or sand. In either case, it should be thoroughly washed in as soon as possible. Apparently, most of the damage is done in May and June and a spring treatment is most timely. Lead arsenate may be applied, however, whenever it is known the grubs are feeding.

Why this beetle should suddenly become injurious to turf in this locality cannot be definitely determined. Apparently, it is present in limited numbers wherever cow manure is present for any length of time. It so happens that the most seriously infested golf courses are located comparatively near to extensive truck farms, where much manure is piled and used each year. The past winter was the mildest in several years and perhaps the survival of this beetle was correspondingly greater. Abundant rain aided a luxuriant growth of grass, which was favorable to the development and activity of these beetles. Many of these native insects are sporadic in their abundance and destructive feeding. They may cause serious injury to turf next year, and they may not be economically injurious for several years. The injury by this manure beetle is unfortunate for the infested areas, but so far it does not seem advisable to treat large areas of uninfested fairways merely for future protection.

Service Section Committee.

TURF DISEASES

(Large Brown Patch)
(Small Brown Patch)
(Spot Blight)

At the present cycle we greenkeepers are going through, there seems to be more and more disease attacking our turf. In order to progress with the times, I think we must familiarize ourselves with the cause of diseases, the time they appear, symptoms, cultural conditions, and last but not least, controls.

In order to have the least trouble with turf diseases, you should consider your greens with regard to the mechanical analysis, drainage, and contour of the greens. Turf diseases are more common on poorly constructed greens that have a poor drainage and greens having an abundance of organic matter such as leaf mold, peat moss, etc. These factors, combined with various temperatures, humidity and rainfall (natural and artificial) cause different turf diseases such as small brown patch (dollar spot), large brown patch (Rhizoctonia solani), spot blight (Pythium) etc.

Of these diseases, large brown patch is undoubtedly the most common. Rhizoctonia is simply a fungus which belongs to a large group of lower plants. These fungi are not identical with the general makeup of the plant, however, but are made up of chains of cells known as hyphae. These hyphae cannot manufacture their own food so have to obtain nutriment either from living plants or animals (parasites), or from organic matter (saprphytes).

Fungi generally produce spores for propagation purposes. These spores may be considered indirectly as a seeding

agent. The spores are microscopic in size and millions in number. The sclerotium is another body that has a close connection with some fungi. Sclerotia are generally the dormant or resting stage of Rhizoctonia. A Sclerotium is a very hard mass composed of a mass of tightly woven hyphal threads, these threads being used to hold-over the fungus during adverse weather conditions.

It is quite interesting to know that most of our soils have a certain amount of sclerotia near or on the surface. Even though the turf is not attacked is no sign that sclerotial bodies are not present, and when the right conditions arrive, they will begin to grow.

When the temperature rises to about 85 degrees F. and then drops to about 65, rising again to 73 or 75 and remaining there, ideal conditions are present for Rhizoctonia solani to become parasitic. This is the time to apply a fungicide, before any harm is done. If at this critical stage no fungicide is applied, the hyphae continue to spread to the leaves, entering them at the numerous pores or openings called stomata. Once inside, nothing can be done to prevent the parasite from destroying the leaf, although if some fungicide is applied, it will help to prevent the fungus from spreading to other parts of the green. The fungicide for this large brown patch is one ounce of corrosive sublimate, 2 ounces of calomel mixed with 50 gallons of water per 1000 square feet. Care should be taken in spraying as uneven spraying may result in burning of the grass.

Poling or brushing also aids in checking brown patch when done in the early morning or any part of the day or night when the disease is noticed.

Dollar spot is similar to large brown patch but, however, is much smaller in size and the fungus spreads much more rapidly. This disease will appear in very hot and damp weather when suddenly cooled down. It may be noted that this disease shows up more on velvet bent than creeping bent and least of all on colonial bent. Poling probably does not help to any great extent in controlling this disease as the disease works too fast. The same fungicide mixture can be used for this disease as for large brown patch.

Pythium---sometimes called spot blight

---is not as common as the brown patches. This disease generally comes in very acid soil having poor drainage. It works best at a temperature of about 95 degrees F. The spots appear reddish in color and can best be noticed in early morning, sometimes being taken for small brown patch, although at times this disease has patches as large as large brown patch.

Fungicides and mercury will not prevent this disease and cannot be used as a control. The opening up of the soil such as forking or spiking for aeration, with the use of hydrated lime being worked into the root system, seems to be the best control. Too much water should be avoided.

In conclusion, I find that greens having the proper mechanical analysis, drainage, and contour are not affected with disease nearly so much as those having poor mechanical analysis, drainage and contour. Over-watering and an excess of rainfall probably plays a considerable role in our turf diseases.

Submitted by

Alfred Berghorn,
Normanside Country Club,
Elsmore, N. Y.
(A Winter School Paper).

A SINKING FUND

One of the largest troubles and worries for greenkeepers and chairmen of greens committees is not having enough equipment to maintain their golf courses. In most cases the greenkeeper has to do without equipment that, no doubt, would enable him to save a great deal of time and money, and also to improve the cultural condition of the course.

There is a way for greenkeepers to get the equipment that is needed in a way that you do not feel the cut into your budget all at one time. That is by having a "Sinking Fund".

This sinking fund consists of a certain amount that is put aside every year and is to be used only when you need some major equipment.

Some clubs take the initial cost of the equipment, divide it by the expected life of the equipment, and get what we term the depreciation of the equipment for one year. This depreciation is paid into the sinking fund, and by the time your present equipment wears out you already have the price of your new equipment to replace the worn-out piece. If, by good management, you are able to extend the life of the equipment, you might not need to buy anything for that particular year—which will make your sinking fund all the larger.

For example, a piece of equipment cost $700.00, and the expected life of the equipment is 7 years. Divide the $700.00 by the 7 years and you have $100.00 that you put aside the first of the year.

Another very good idea that some of the clubs are using to good advantage is as follows: If by good management the greenkeeper has been able to save a little on his budget, this is added to the sinking fund. In a very short time the greenkeeper will be able to save a little so that at the end of the year he will benefit by having it added to his sinking fund. However, there is one thing that must be definitely understood. That is, if you save from your greens budget, the saving is not taken from you to be spent in the club house or deducted from next year's budget.

If this saving is turned over to the greenkeeper to be put in the sinking fund it will give him an incentative to improve his management and costs, so that he may be able to get a much needed piece of equipment.

In all cases, everyone has benefited by the sinking fund. The club, by having a more efficient greenkeeper, and more equipment, which in turn will invariably lead to improved cultural conditions. Less worry, time, and energy used in the different jobs. This in turn is another saving to the club.

As for the greenkeeper, he can improve the course with machinery that enables him to keep the cost of maintenance down as far as possible. A man having all the necessary equipment for a particular job will do a better job, be happy and contented. All of us know the value of having our men contented with everything about the job.

If you do not have a sinking fund at your club, it is very advisable to ask your greens committee to adopt this method, explaining to them that this fund is to be used only as a means of getting some new equipment—and **only equipment.** They, no doubt will see the good points of the plan and adopt it.

Without this plan, you might find yourself in a position where you want to replace worn or antiquated machinery

and you would have to go much more deeply into your budget. In some cases you might have to lower your standard of maintenance to make up for the cost of the equipment.

If you have this sinking fund at your club, and you would like to make a report to the greens committee on a particular piece of equipment that you would like to buy out of the sinking fund, here are some of the questions that must be answered first:

1. Can you buy a similar piece of machinery at a lower price?
2. Is it a necessity?
3. Is it time-saving?
4. Will it improve the cultural conditions of the course?
5. Will it improve the playing conditions?
6. Are the men capable of using it efficiently?
7. Will there be necessary alterations or additions made because of the equipment?

Submitted by

Emery Thomas,
Red Hook Golf Club,
Red Hook, New York.

(A Winter School paper).

THE PRODUCTION CAPACITY OF A GOLF COURSE

One rarely realizes the amount of lost time in labor hours on a golf course. Most of this lost time is unproductive time due to the poor management of the greenkeeper. There are a great many items that can be the cause of unproductive time—as poor routing of the workmen. By this I mean that they may be walking a greater distance than is necessary to get to a certain point. There is also much time lost in labor changing from one job to another. But on top of all this lost time, there is one more item that I would like to discuss, and that is the effect of the number of rounds of golf on the labor hours.

We had a very interesting study of the production capacity of a golf course in our Winter School for Greenkeepers at Mass. State College. Each student was required to take the figures of his own particular course and make a graph on the production capacity of his course. I don't believe there was a student in the class who wasn't surprised at the way this graph worked out; we all found that there were one or more operations we had been doing that were creating a highly added cost, which could most likely have been corrected. This added cost of a particular job was due to the operation of the job when a heavy play was on the course, but which could have been done when play wasn't so heavy—as early in the morning, late in the afternoon, or on a certain day of the week. Or in some cases at night, such as the mowing of fairways before a tournament.

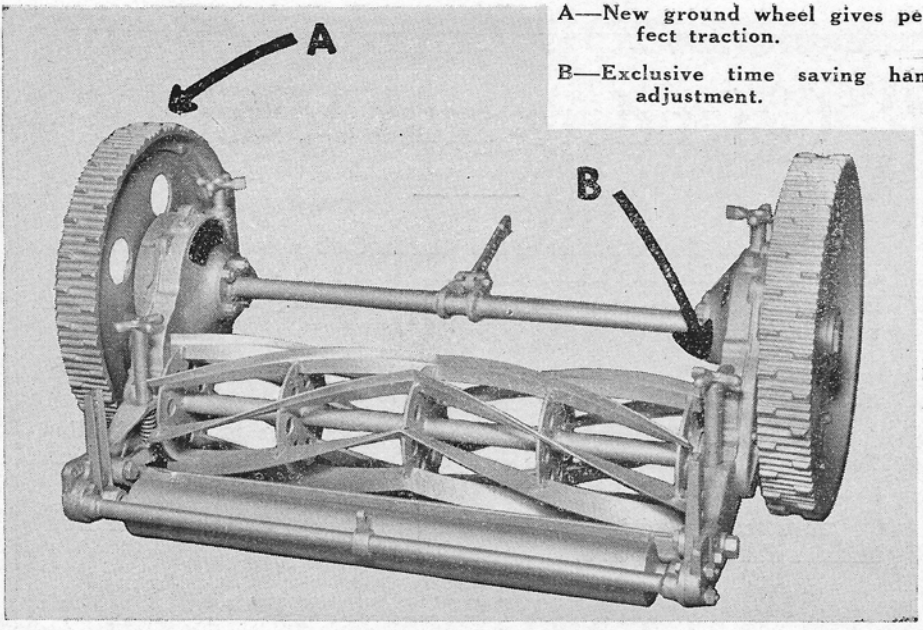
We arrive at these lost labor hours by taking the minimum time required to do a certain operation without play interruption or influence. Then take the maximum time that it takes to do the same operation due to player interruption. The minimum subtracted from the maximum gives the lost time due to play, but this lost time varies with the number of rounds of golf that pass through the course when a particular job is being done. You are usually operating under a margin of safety. By this I mean that you can have an increase in play and it will not affect added cost until it reaches a certain number of rounds. For example—if you only have one player a day, it still is costing you just as much as though you were having your regular play because you have to keep the course in just as good shape. When the play goes over the margin of safety, it results in added cost. The way to correct these added costs from being so high is to arrange the operations differently. For example, if the play for some certain day were going to be heavy and you were mowing greens and wanted to reduce the added cost you would either have to start mowing earlier in the morning, so as to get ahead of the largest amount of play that would later be on the course, or add more men to mowing the greens, so as to reduce the amount of interference on holdup due to players.

I believe that the average greenkeeper does not realize this amount of labor hours that are lost or stolen away from him due to his own poor management. It not only results in a loss of labor hours to the greenkeeper, but a loss in dollars and cents to the club.

Submitted by

Earl F. Yesberger,
Homelinks Country Club,
North Olmsted, Ohio.

(A Winter School for Greenkeepers paper).



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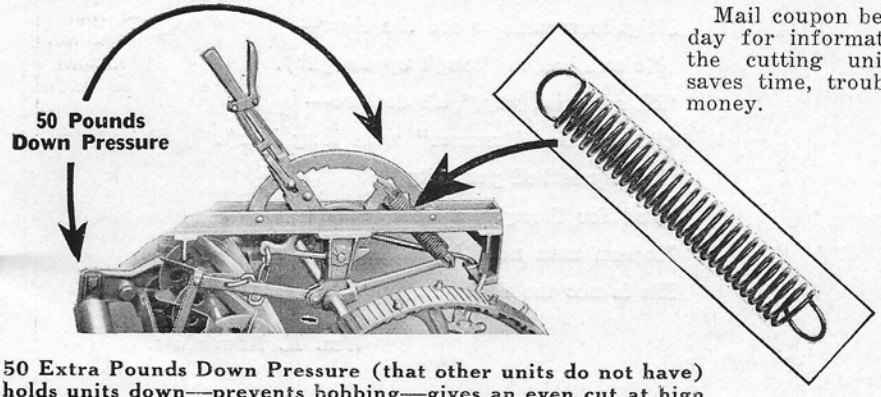

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Calenders and Musings

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Our supply will be limited, therefore we suggest you return the request card which will be mailed to you later this fall.

We have just received another very fitting verse prompted by the Toro Calendar. This one deals with the Goats while Charles' seemed to prefer the Dinosaurs.

It is contributed by Dr. William H. Rauchfuss, Curator of the Dey Mansion at Preakness, N. J.

"THE FIRST GANG-MOWER"

Thirteen goats, all in a row,
See the critters how they mow!
What a great wide swath they make!
("Old Stone Hammer" needs a rake).
Neighbors come to see the show—
(No one has to "cough up dough").
"He's a wise guy," all declare—
("Old Stone Hammer" with long hair).
He bequeathed posterity
Food for thought, a new "idee."
Modern man need be no blower:
His is not the first gang-mower.

Wm. H. Rauchfuss.

It is a pleasure to publicly acknowledge our appreciation to these two men who have helped us "smile" which after all is a large part of life.

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