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The NATIONAL GREENKEEPER

Official Organ of The National Association of Greenkeepers of America

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No. IX

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A very few of many fine courses for which I have supplied creeping bent grass during the past seven years.

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Would you like
Washington strain
Creeping Bent
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such as these clubs have?

NOW is the time to plant stolons for quickest and best results. They are shipped shredded ready for planting, arrival in good condition guaranteed.

Make sure your club is getting the best putting turf obtainable.

I have planted Washington strain all over the country, and as a practical greenkeeper I believe it surpasses all other strains so far selected for fineness, lack of nap or grain and resistance to fungus. I feel sure you would be as well satisfied as are all my past customers.

HIRAM F. GODWIN
Bent Grass

Box A., Redford Sta., Detroit, Mich.

Eastern Nursery, Box 51, Wayne, Pa.

September
1929
Volume III
Number 9

The NATIONAL GREENKEEPER

The Leading Journal of the World on Turf Culture and Golf Course Maintenance

Official Organ of The
National Association
of Greenkeepers of
America

Preparing the Seed Bed

Importance of proper preparation of the soil in order to
produce healthy turf and lower maintenance cost

By C. M. JENKINS

The author of this article was graduated from Ohio State University in 1920, after which he was connected with Elwood and Frye of Columbus, Ohio, landscape architects. Later on he became affiliated with the Florida Landscape Engineering Company, and was with Stiles and VanKleek, golf course and landscape architects of St. Petersburg, Florida and Boston, Massachusetts. While there he supervised the construction of a number of courses principally in Florida and Massachusetts and is now connected with Arthur D. Peterson, Inc., of New York City. Mr. Jenkins combines a university education with several years of practical experience in golf course work.—
Editor's Note.

THE possibility exists that many of the troubles might be eliminated from the trying routine of a greenkeeper if a more careful study were made during construction, of the general conditions necessary to promote the best turf. This study the greenkeeper is constantly making but it is usually not until after the course has been turned over to the club members.

With this in view I believe many clubs would lower their operating maintenance cost if a capable greenkeeper or turf specialist were employed while the course is being constructed to collaborate with the architect.

When club officials first select an architect they have a right to expect that he be a golfer or a thorough student of the game; an artist who will make the most of the landscape he is permitted to model; a construction engineer who will have knowledge of the best methods of moving soil, blasting rock, draining

swamps and clearing timber. But are they asking too much to expect him to be an agriculturist and an agronomist familiar with conditions of all localities that are necessary to obtain a putting green that will be maintained in the best condition at a minimum expense? That old English quotation, "Men come to

build more stately sooner than to garden finely," is just as applicable to golf as it is to other architecture.

What Affects Turf Requirements

LOCAL turf requirements are affected principally by climatic and soil conditions. Also by insect,

weed and fungus infestations. The climatic conditions cannot be changed but the most suitable grass for that climate can be selected.

Certain grasses will or will not grow, but of those that do, some will give better greens easier to maintain, with certain cultural and fertilizer practices. I have seen beautiful fescue greens in New Jersey and New York that



9TH GREEN ON THE NEW COURSE AT HISTORIC PUT-IN-BAY
This course was seeded last fall and the photo shows how it looked on opening day June 22nd. Alex Miller the greenkeeper has been highly complimented on his work

have stood the tests of time; but there are probable locations in Ohio, and Pennsylvania where this would be impossible.

New grasses are being used every year under different climatic conditions. It was just recently that a smart greenkeeper located on the border of the bluegrass and Bermuda belts has utilized to advantage that excellent grass for extremes, *Poa Trivialis* and won further admiration from his members.

Soil Causes Trouble

HOWEVER, it is the soil that causes the greenkeeper the most trouble. The prerequisites being drainage, texture and fertility. Of these the fertility can most easily be modified after construction. But there is a certain fertilization that should be done before seeding to obtain a thick uniform turf.

If the soils are sand they will be apt to need potash. It is desirable that all the nitrogen and phosphoric acid that the grass needs for establishment during the first three months be incorporated in the soil before seeding. This is particularly true of phosphoric acid since this fertilizer precipitates readily into insoluble phosphate particles which do not penetrate soil to sufficient depth to promote best root growth. The nitrogen penetrates readily but the danger lies in burning the new seedlings. It is, therefore, much better to have sufficient nitrogen present in a slowly available form to establish the turf.

Drainage Most Important

THERE are many greens built with only surface drainage. This is not adequate except in very sandy soils. It is my belief if more tile were used in construction there would be fewer mercury compounds used in maintenance. Proper underdrainage will aid in the improvement of the soil texture, prevent toxicity and minimize snow mold, drum head and brown patch.

The texture of few soils is perfect for the requirements of a putting green. Often it is worse after construction than before. The top soil is stripped, the rough grade formed and recovered all at a time when the soil is too wet to be properly handled. All good turf soils have a certain percentage of clay. This, where worked too wet, destroys the aggregates

causing the soil to cake and bake making it more impervious to the passage of water and air. Considerable time is necessary to remedy this condition. The use of lime and organic matter, underdrainage and alternate freezing and thawing are all beneficial.

Water Retention Necessary

THE texture must be such as to favor the retention of water. A twenty per cent clay, fifty per cent silt and thirty per cent sand would be near ideal. The existing texture may be such that to improve the soil it will be necessary to add any one or more of the following materials: charcoal, cinders, sharp sand, clay, peat moss or organic matter in various forms such as commercial humus, manures and cover crops.

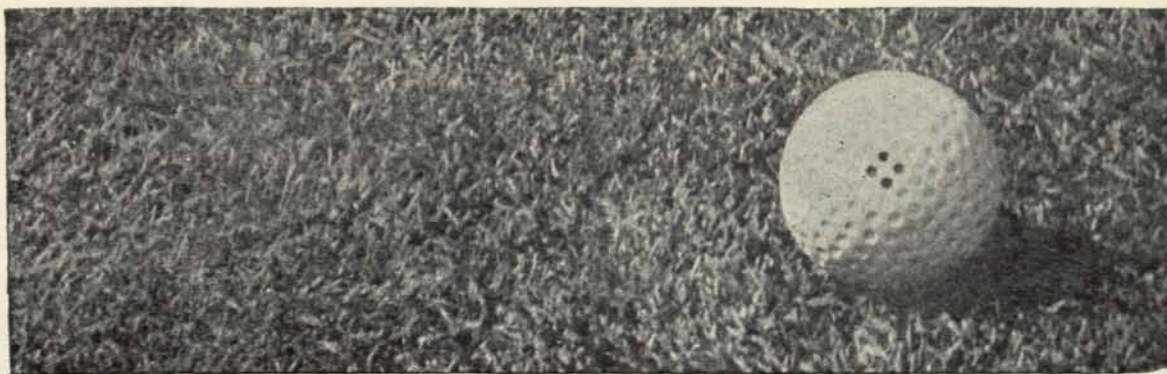
It is not sufficient that the necessary materials are present in the green but they must be thoroughly incorporated if the desired structure is to be obtained. This seems very elementary but there are greens on some of the most expensive courses in this country that have been constructed by layer methods. It may be clay that forms an impervious layer and checks capillarity or it may be manure that decomposes and by uneven settlement leaves a bumpy putting surface.

Weed control is another item often overlooked in construction. It is not unusual to spend several hundred dollars per green during the first year in eradicating weeds that might have been eliminated at less than half that cost before the green was seeded. I have steam-sterilized greens at a cost of fifty to eighty dollars per green that eliminated weeding entirely the first year the course was in play.

Using Arsenate of Lead

WITH the spreading of the Japanese and Asiatic beetles the proper treatment of the top four inches with arsenate of lead might prevent the greenkeeper further worry and it will pay its way alone in worm eradication and June grub control.

I realize that we have earned our reputation of impatient America as truly in golf as any other field. Clubs want their course at once and often due time for proper construction and seasoning are not permitted. That's why greenkeepers must have broad shoulders to survive,



A Piece of Coccoos Bent Turf

For Your Fall Work, whether in connection with renovating or new construction, late summer or early fall (Aug. 15th to Oct. 1st) is by all odds the best time to sow seed.

For the Finest Turf sow Bent Grasses! Because of the extreme fineness and beauty of turf produced from **Bent Seed** we recommend the use of a certain percentage of Bent in all mixtures for *Fairways* and *Lawns*. Its superiority for use on golf courses, especially the putting greens, has long been recognized.

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of Known Quality

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South German Bent Colonial Bent Rhode Island Bent (*Washington Grown*) Bent Stolons

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We offer the **true Coccoos Bent**, the finest of the *Agrostis maritima* grasses, in sealed bags.
Per lb. \$2.50, per 10 lbs. \$22.50, per 100 lbs. \$200.00

Special Putting Green Bent Formula — Consists of imported and domestic grass seeds of the highest quality, that will produce a fine, uniform and enduring turf. Use 15 lbs. to 1000 sq. ft., one-quarter to one-half this quantity for renovating **25 lbs. \$18.75, 100 lbs. \$70.00**
Standard Putting Green Formula, 25 lbs. \$16.00, 100 lbs. \$60.00

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Special formulas for Tees, Rough, Bunkers, Polo Fields, Airports, Club or Private Lawns, furnished upon request

Remember:— We are one of the largest direct contractors for foreign-grown Grass Seeds in the United States. Over thirty years of Seed Service have enabled us to segregate those collectors of Bent Seeds who are reliable from those who are not; to single out those growers of Chewing's Fescue whose strains are pure; also to contract for true American-grown seeds of high vitality. All our seeds are botanically true to name and are cleaned and re-cleaned until brought up to the highest possible state of purity and germination, special care being given to the elimination of weed seeds.

Without obligation, we shall be pleased to send a representative who, from long experience, is qualified to advise regarding grasses and furnish such other information as is necessary for the best results

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Compost and Charcoal

By JOHN MORLEY, Greenkeeper
Youngstown Country Club, Youngstown, O.

DISCUSSION has been rife the past two years, both by experts on soils and experienced greenkeepers regarding the advisability of eliminating the compost pile and produce other methods to create suitable porous soils, especially adapted for topdressing of putting greens.

The preparing and mixing of compost forms one of the most important items in greenkeeping. To meet the requirement of a modern putting green, the dressing and preparing of compost must be carried out in a more scientific manner.

The greatest care must be taken to use only that compost or manure which may be best expected to repay the outlay. There should be a proper place provided for the compost with a hard bottom to prevent the heavy rains from washing the better materials contained in the pile away. If the compost is properly made and allowed sufficient time for the nitrofixing

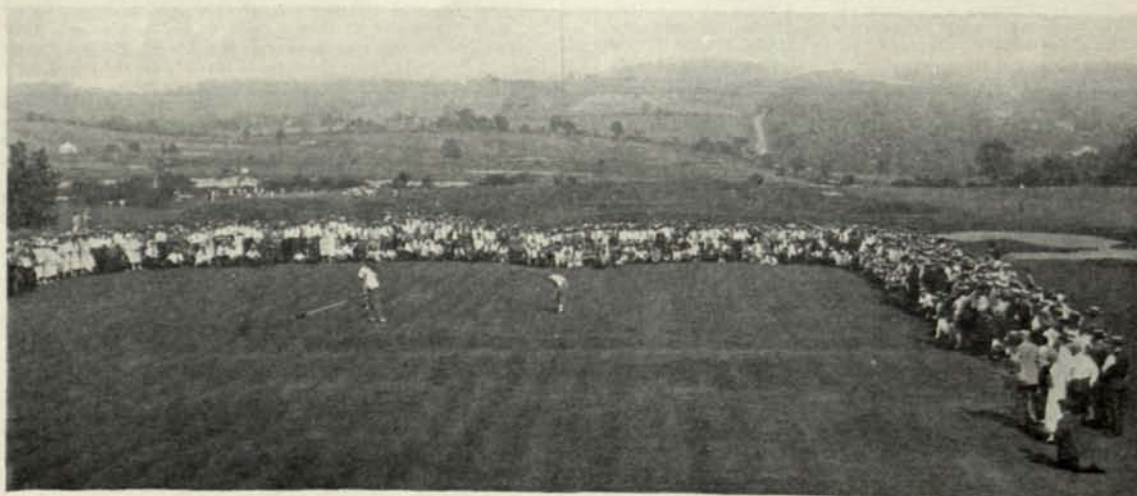


JOHN MORLEY
This veteran's success as a greenkeeper has given him a world-wide reputation

bacteria to release the various elements which the organic matter in the compost contains, and the materials used are carefully selected, I find no reason to discontinue building them.

Some of the troubles with the average compost pile, which I have observed during my visits to various courses is that they are not properly built. For an illustration—a number of greenkeepers often, owing to insufficient help cannot afford the time to make compost, especially through the summer season. They are often compelled to wait until late fall. The greenkeeper can get together at that time all the employes available and proceed to erect the compost pile and keep working at it until it is completed.

Preceding its erection he has secured a good supply of stable manure. A fair portion (especially horse manure), has begun to heat and has the appearance of a light gray color. This



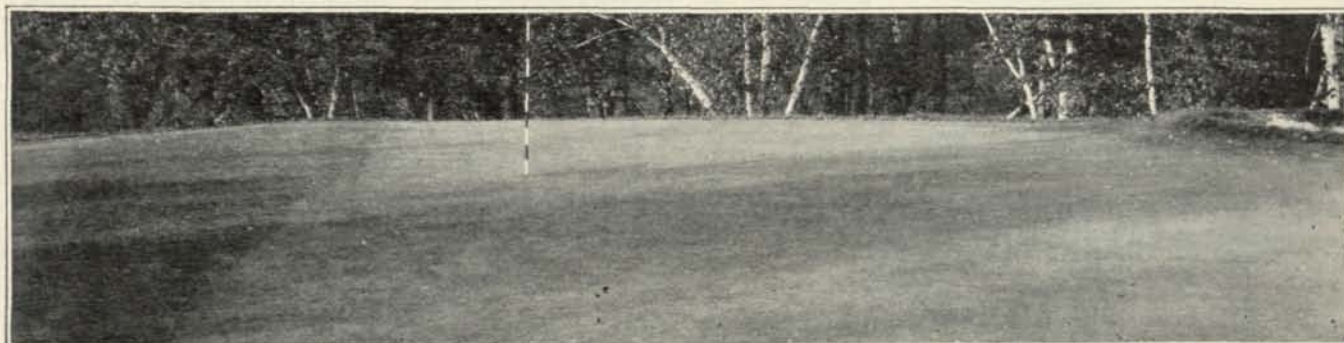
THE 9TH GREEN ON THE FAMOUS OAKMONT CHAMPIONSHIP COURSE
Expert greenkeeping on the part of Emil Loeffler together with the judicious expenditure of money has made this course famous throughout the world

35% OF AMERICA'S COURSES

with Bent Grass Greens

CONTROL BROWN PATCH WITH

DU BAY FUNGICIDES



Du Bay fungicides kept this green at St. Andrews Golf Club, Mt. Hope, N. Y., free from brown patch damage

Greenkeepers of 533 of the nation's golf courses—more than 35% of the 1510 estimated by *Golfdom* to have bent grass greens—depend on Du Bay fungicides to control destructive brown patch.

They know from experience that Semesan and Nu-Green quickly destroy brown patch fungi, and promptly restore the affected area to normal health. The treatment is so simple, and the directions so easy to follow, that there is no danger of burning or otherwise injuring the greens.

Now is the season when you cannot afford to imperil your turf by negligence! Mid-summer weather often clings on well into early fall, favoring the development of large brown patch. Small brown patch, as well, may appear late in the season.

For the control of large and small brown patch, one pound of Semesan or Nu-

Green to 50 gallons of water will treat 1000 square feet of turf by sprinkling. When application is made with a power sprayer 50 gallons of Semesan solution is sufficient for from 2000 to 3000 square feet of turf; 50 gallons of Nu-Green solution for from 1500 to 2000 square feet.

Turf damage from snow mold, which attacks the greens in early spring, is as easily avoided by Semesan treatment. To prevent it, apply Semesan solution to the greens just before the ground freezes, using 50 gallons to each 1000 square feet of turf.

SEMESAN	NU-GREEN
5 lb.....\$13.00	5 lb.....\$ 9.00
25 lb..... 56.25	25 lb..... 37.50
100 lb.....220.00	100 lb.....145.00
300 lb.....645.00	300 lb.....420.00



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Maintains Fairway Fertility

Proper feeding is the basis of turf improvement on fairways.

Turf on starved fairways first becomes thin, followed by infestation with moss, dandelion, plantain, and other undesirable weeds.

Clover invasion indicates nitrogen starvation.

Turf improvement should begin this fall. Prolonged drought this summer weakened turf in many sections. Milorganite applied this fall will insure good fairways in 1930.

Milorganite applied in September will effect marked improvement before winter, and benefits extend into the following year.

We are prepared to help devise an effective and economical program of fairway improvement.

For further information address

The Sewerage Commission

508 Market Street

Milwaukee, Wis.

manure is usually placed in layer formation, possibly three layers compose the make-up. Sod, soil and sand generally constitute the remaining material.

Let us see what usually happens when compost piles are made in a hurry, especially when the pile is made where it is impossible to obtain water. For in order to secure decomposition of the organic matter, the compost pile should have a fair amount of moisture from top to bottom.

Lime and Ammonia in Compost

ONE of our leading authorities on Soils and Bacteria states that in order to hasten decomposition in the compost it should be treated very liberally with sulphate of ammonia and hydrated lime—about two hundred pounds of the latter to a carload of compost. Where these two materials are used I would suggest that the compost pile should be constructed so that both sides and both ends contain not less than twelve inches of sod and the top should be flat and contain the same amount of sod as the sides and ends. This should be done to prevent the nitrogen gas, owing to the action of lime and other sources, from escaping out of the compost pile.

A compost pile should be allowed to stand until it is at least one year old, then it should be turned over and great care should be given to have all sides and ends thrown into the center of the pile to bring about decomposition. When the manure is stored closely in the compost and is not well supplied with moisture the aerobic bacteria are favored in their growth. Their activities may become so intense as to cause a rapid oxidation, that is a rapid burning up of the organic matter. Under such circumstances the temperature of the manure is raised to a perceptible extent, frequently giving rise to fire fanging.

Great care should be given the material placed in the compost to avoid a toxic condition in part or all of the soil which it contains for there is a possibility to create disease more dreadful than brown patch; such as molds, sclerotia or pythium.

Why I Make Compost

IF I were asked a direct question as to why I make compost, my reply would be to ob-