

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

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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

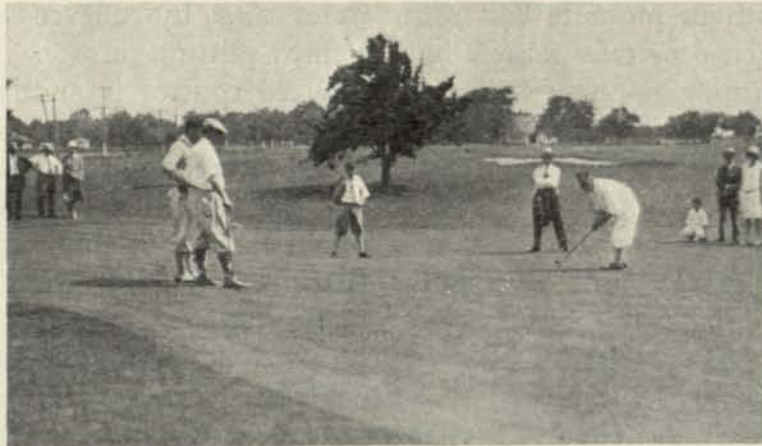
build more stately sooner than to garden finely," is just as applicable to golf as it is to other architecture.

### 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

**H**OWEVER, 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

**T**HERE 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

**T**HE 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

**W**ITH 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,