

Compost and Charcoal

By JOHN MORLEY, Greenkeeper
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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 nitroifying



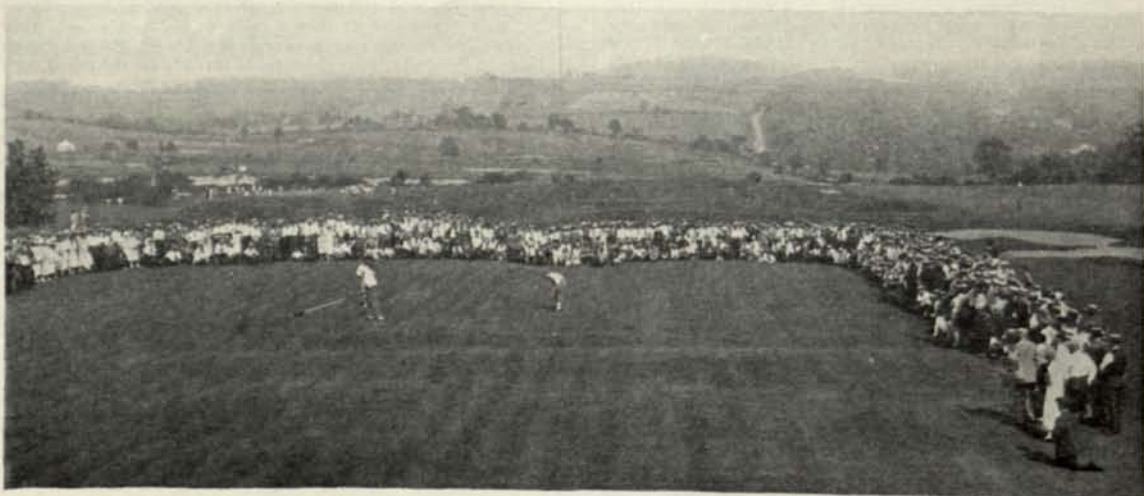
JOHN MORLEY
This veteran's success as a greenkeeper has given him a world-wide reputation

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



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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.

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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-

tain a good porous soil, well supplied with nitroifying bacteria for topdressing of putting greens. We must remember that these bacteria play a very important part in both plant and animal life—for without bacteria there would be no decay and where there is no decay there is no life.

Where soils have become too acid either by excessive use of sulphate of ammonia or other sources, the acidity can be neutralized by the use of pulverized charcoal made mostly from hardwood. I believe that I have used more acid fertilizers on my putting greens than any other greenkeeper in America and by using charcoal my putting greens are never over media acidity, while some are neutral.

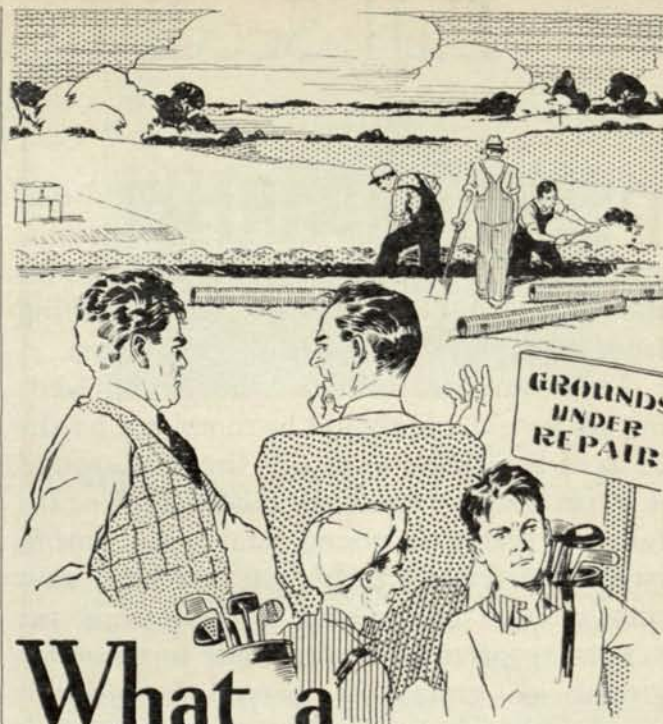
It has often been stated that the use of charcoal on a putting green is only necessary under certain conditions. When through the heavy character of the neutral soil abnormal rainfall or other causes the surface becomes wet and sticky, the use of charcoal is advisable. If a putting green goes bad in color from any cause a dressing of charcoal will soon improve matters and leaves the grass healthy and vigorous. As a purifier of the soil and an absorber of moisture charcoal has no equal.

Charcoal Keeps Greens Porous

PERSONALLY, I have realized by using charcoal that it helps to keep the surface of the putting greens in a good porous condition so that when the player makes a good shot to the putting green the ball will bite well and not bounce off the green. We often create this condition by the use of charcoal, especially where silt and clay loams predominate.

During the playing season, should it be a dry one, charcoal helps to prevent the surface of the soil from baking and cracking open, thus preventing the nitrogen gases from escaping out of the soil. After a heavy rain or watering charcoal expands, thus allowing more water to enter into the subsoil. Charcoal also helps to make the surface of the putting greens firm and porous. For illustration (and don't think this is a fish story), a year ago in the early part of the month of May our clubhouse was destroyed by fire. I had a large

(Concluded on page 26)



What a Chicago Golf Club learned about subdrainage

Frequent complaints from the members of a Golf Club near Chicago led to an investigation of why their fairways were slow to drain after rains. It was found that subdrainage was inadequate. That repairs were too frequent. That the ancient and royal game was being interfered with by that all too often appearance of men with shovels.

What to do?

Somebody suggested looking into the possibilities of Armco Perforated Iron Pipe. The report was favorable.

With the next drainage failure, Armco Pipe was installed. That drain caused no more trouble.

More Armco Pipe was purchased. As it took the place of broken drains, rain pools disappeared. And when the course was Armco drained throughout, repairs became unnecessary.

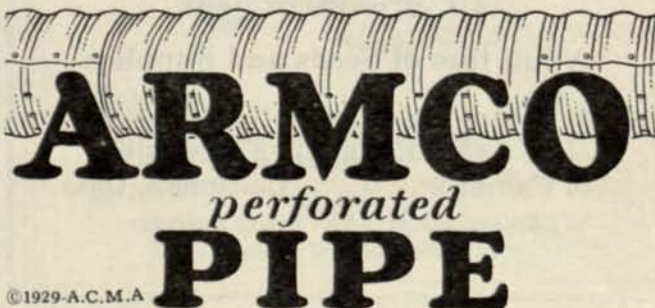
No more do the men with shovels interrupt play. For here is a pipe that removes surface water surely and quickly. It is proof against the heaviest rollers—against freezing or swelling soils.

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Seed Greens Late in August

THE greens are seeded late in August or the first week in September. Ten pounds of the best South German mixed bent is well mixed in one or one and one-fourth yards of compost and spread on each green averaging 8500 square feet. The green is spiked before compost is applied. I find that much of this seed germinates and replaces some of the natural grasses that are dying out at this season.

The compost used on the greens is a mixture of 40 per cent cow manure, 40 per cent light top soil and 20 per cent sand which has been composting at least two years. To the first topdressing in the Spring we add 20 pounds of ammonium sulphate per green and again the last topdressing in the Fall.

Except on six of our greens to which I mixed in the June topdressing, 100 pounds each of tobacco dust, they have not and will not receive any other fertilizer. On those six greens I had been particularly troubled with dollar patch, but have not seen it since, although it has appeared at different times on the others that did not get the tobacco dust. I am not advocating that as a preventative but just quote our experiment.

In closing, I would like to say to the younger greenkeepers, don't forget your fall topdressing. Put on all you can get hold of on your greens, tees, approaches and fairways. It

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Charcoal and Compost

(Continued from page 11)

practice green situated close to the clubhouse. A huge fire engine drove across the middle of the green and it did not destroy a square inch of sod. I have counted at least twenty women with high heeled shoes walk across this green and they never leave any evil effects.

I have never raised a divot on any of our short holes in two years and never have had a



THE CREW AT CHARTIERS HEIGHTS
Joseph Ball is the greenkeeper of this Crafton, Pa., course and is very proud of the men who work for him. Lower photo shows Ball on the left supervising the cutting of nursery stock

single complaint. The chief cause of maintaining a good firm surface I attribute to the liberal amount of charcoal in my putting greens.

Mid-West Greenkeepers

The regular monthly meeting of the Mid-West Greenkeepers' Association of Chicago was held at the Aurora Country Club, July 21. In the absence of President Binnie, first vice-president, M. Bezek presided.

It was decided to hold the next meeting at the Midlothian Country Club and later on to visit Knollwood.

Upon motion of Mr. John MacGregor, former president the secretary was authorized to send a letter of thanks to the Aurora Country Club.