

Uses of Peat and Muck*

By WRIGHT McCALLIP

Read at the January meeting of the Central Ohio District Golf Association

THE subject assigned for this meeting is the "Uses of Peat and Muck" to supply the lack of much needed organic materials in the construction and maintenance of our golf courses. It is a pertinent subject and one that should interest us all and by going back to the beginning we find the origin as well as the composition of the materials and will be better fitted to judge values.

Nature provides a cycle of life, growth and death followed by decay. She clears the path for the future growth of plants, animals and humans by this cycle. Unless this were the case, there would soon be no space available for life of any sort.

The first stage of decomposition is the same in either animal or vegetable matter. An animal soon starts to putrefy because its body is made up largely of water. Grasses, mosses, trees, weeds, straw and the like take longer because in dying they have dried out and must first come in contact with moisture before decomposition can set in.

Annually, as the plant growth of one season falls to the ground, it is soon covered with water from the fall rains, winter snows, etc., and by the following season has undergone partial decomposition. In many low-lying areas, this partially decayed organic matter has accumulated for countless ages and has resulted in the formation of our peat deposits which in some areas reaches to a depth of 75 to 100 feet.

The top layers of these peat deposits undergo further decomposition because the air, moisture and heat so necessary in the breaking down process have been present, while the underlying peat seems to stay in practically the same state of decay as in its early formation. The fact that this underlying peat is nearly always in contact with very cold water tells us why further decomposition has not taken place, for without heat above 40 degrees decay is impossible. Ord-

nary refrigeration is evidence of this fact.

Peat, under these conditions, seems to be a material that is resistant to further decay but like scrap leather contains a future available nitrogen content. We must remember, however, that further decomposition, in either case, must so change the character of the material as to make it possible for it to give up this nitrogen content. When this change has taken place "peat" is no longer "peat," it is now "peat humus."

Muck is a peat humus that has been mixed, through the ages past, with washed in soils and consequently is an adulterated substance. Its very name implies a mass of undesirable materials and should be considered as such in construction and maintenance work. These undesirable materials have been supplied with air, moisture and heat, causing a very rapid breaking down and as a result we have a black, gummy mass of very poor physical structure due to the active peat humus being consumed. Therefore, its value as a peat humus material is a doubtful quantity and will only have a nitrogen-producing value in proportion to the peat humus which it now contains.

With a clear idea of what peat, peat humus and muck are we can intelligently consider the uses we might put them to in our construction and maintenance.

Peat, as you know, is used quite extensively by landscape architects, gardeners, florists and to some extent by greenkeepers. The only practical results we may expect to get from the use of peat is as a moisture holding mulch and an aid in the improvement of physical condition. Thoroughly mixed in the soil it will improve the physical condition but only in proportion to its fineness. To what extent the soil texture will be improved depends upon the number of soil particles that it will separate and the results are in direct proportion.



WRIGHT McCALLIP

If we are expecting the immediate availability of the nitrogen content of the peat we are bound to be disappointed for it cannot become available until it has reached that stage of decay where it is possible for the nitrifying bacteria to become active, thus forming nitric acid which combines with lime or other alkaline bases to make a nitrate.

USE OF MUCK A MISTAKE

THE use of muck on our golf courses is clear out of the picture. It's invariably poor physical structure alone is reason enough for us to dismiss it at once as a useable material. However, it is a strange fact that its black color entices us on and leads us to believe it has wonderful possibilities. Its color is just a mask and back of it is nothing but trouble. The structure is gone and when wet, it is a mass impervious to moisture and air so vital to the activities and welfare of our nitrifying bacteria.

Some of you may be planning to use muck. Before you do, take the precaution to have an analysis made, particularly of its physical condition and note especially the speed that water will penetrate into it after it has become wet and dried. If one C.C. (15 drops) of water takes more than 60 seconds to penetrate into a dried plug of soil one inch in diameter it is a sure sign that the physical condition is poor and that its peat humus content is very low.

One sample of muck soil, that looked like it had wonderful possibilities, was examined during the past year and showed a speed of porosity of 1245 seconds, compared to the normal speed of 60 seconds. This gives you some food for thought as it is not an unusual case.

PEAT HUMUS HELPS BACTERIAL ACTION

THE deductions to be gathered from these facts points on an organic material in a stage of decay between peat and muck as the most desirable material for use. Peat humus is such a material and is the building structure in which every important bacteriological activity takes place. It furnishes food and energy and supplies the additional air and moisture so necessary for their interrupted and ceaseless workings.

It follows that with a great amount of peat humus in the soil the greater will be the housing facilities for and a corresponding increase in the number of desirable soil bacteria. It greatly improves soil texture or physical condition; through

IT CAN BE DONE

You can convert impervious clay or loose sand into good moisture retentive putting green soil.

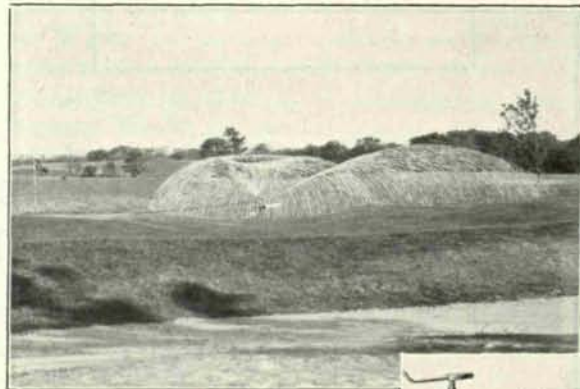
Cleve-Brand Soil Improvement **CHARCOAL** is being successfully and economically used for that very purpose. Try a sample.

THE CLEVELAND CHARCOAL SUPPLY CO.
3905 Jennings Road—Cleveland, Ohio

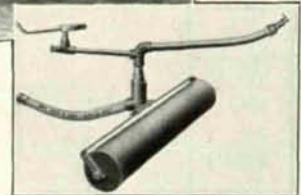
its fineness it provides mellowness; through expansion and contraction, porosity and aeration; through its water-holding power, added moisture. As a dust mulch, it conserves surface evaporation. It acts also as an insulation against sudden temperature changes, making possible a slow transition from heat to cold, or cold to heat.

There is just as much difference between peat and peat humus as there is between pig iron and steel.

Think it over.



**WHY GREENKEEPERS »
the WORLD OVER prefer
the LARK SPRINKLER »**



Greenkeepers in the British Isles, Australia, Canada, and in every State in the Union use and recommend the Lark because—

1. It covers an area up to 150 feet in diameter. (See large picture above).
2. Spreads the water evenly at all pressures.
3. Gives the grass a thorough drenching. "Better than rain."
4. Made entirely of long-lasting bronze mounted on iron roller. (See close-up view of sprinkler.)
5. A scientifically designed sprinkler at low cost.

Price, \$15 in the U. S. (Slightly higher in Canada and abroad.) Send at once for a trial sprinkler. You, too, will be delighted with the Lark!

L.R. NELSON MFG. CO. INC. Peoria, Illinois