STUDY OF THEORY SUGGESTS
Composting Practice
IS DUE FOR MUCH REVISION
By B. R. LEACH

A n adequate supply of suitable top dressing material is one of the most important of modern golf course essentials, but the present day methods of preparing topdressing, employing the compost pile method, is both laborious and expensive while the quality of the product obtained is not always of the best, as I shall proceed to show.

Let us consider for a moment the theory of composting. Composting, in the last analysis, consists in heaping together a mixture of animal manure or vegetable matter and soil, the ingredients in varying proportions with the object of inducing decomposition thereby rendering the mass homogeneous and of such a condition that it will be conducive to the growth of plants. Composting has been practiced for centuries not only by greenkeepers but by florists, nurserymen and gardeners. Greenkeepers still cling to the compost pile but the method is rapidly going out of use among florists and nurserymen, first because the method is unduly laborious and secondly because it has been found that there is a much cheaper and easier method and that the product obtained thereby is much more suitable for the purpose intended.

One would off-handly suppose that the composting method should produce a topdressing mixture just about right for application to the greens when mixed with additional soil, but as a matter of fact this is not so. In the first place, a compost pile rarely possesses the proper moisture content for rapid decomposition, first because the rain runs off it regardless of how it is built, and secondly it dries out much more rapidly because it has a greater surface exposed to the wind. If a compost pile once gets on the dry side it is a herculean task to again work it into a properly moist condition. Furthermore, and decidedly of the greater importance, is the fact that the type of decomposition which goes on in a compost pile is not of a satisfactory nature and the product of this decomposition is not the best material for topdressing greens.

I have traveled around a goodish bit in my time, but come to think of it I have never seen a compost pile in nature. The compost pile is a man made institution, a sort of vain attempt to paint the lily and perfume the rose, and is not so hot. When nature is desirous of decomposing animal or vegetable matter she doesn't heap it up in a pile. Rather she spreads it out in a thin layer on the surface of the soil as for instance the thin carpet of fallen leaves in the forest or the mat of last year's dead grass stalks in a meadow.

In the decomposition of the compost pile or the decomposition of the leaves in the woods the active agents of decomposition are in both cases bacteria, but they are not the same type of bacteria. The bacteria responsible for the decay of leaves in the woods are known as aerobic bacteria, or as the name implies, they act on organic matter only when there is an abundance of oxygen available to them as would be the case in the thin layer of leaves in the woods. A compost pile, on the other hand, will contain aerobic bacteria of those outer portions of the pile where this type of bacteria can obtain adequate supplies of air for their proper functioning, but the proportionally greater internal bulk of the pile will be insufficiently supplied with the aerobic bacteria for the plain and simple reason that there is not sufficient oxygen containing air present therein for the aerobic bacteria to function properly.

Nevertheless decomposition does occur within the internal masses of a compost pile, but it is an entirely different type of decomposition. Under these conditions, with an inadequate supply of air to contend with the aerobic bacteria give way to another type of bacteria known as anaerobic bacteria or in other words bacteria capable of functioning in an atmosphere practically devoid of oxygen.
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 Seed
Grass Seed
of Known Quality
Tested for Purity and Germination
South German Bent Colonial Bent
Rhode Island Bent Bent Stolons
Special Putting Green Bent Formula
Superfine Fairway Formula (With Bent)

Prices on above, or any other turf producing grasses,
such as Fancy Red Top, Kentucky Blue,
Chewing's N. Z. Fescue, etc., on request

COCOOS BENT
Because of the fine
turf producing qual-
ities of this Creeping Bent, it is recognized
as an outstanding Putting Green Grass.
Coccos Bent is botanically known as Agrostis
maritima, but all strains of Agrostis mar-
itima are not Coccos Bent.

We offer the true Coccos Bent, the finest of
the Agrostis maritima grasses, in sealed bags.
Per lb. $2.75; 10 lbs. $25; 100 lbs. $225.

Remember—All our seeds are of the highest
quality, obtained direct from the most reliable
sources of supply and are botanically true to
name. All seeds are new and are cleaned and
reboxed until they are brought up to the high-
est possible state of purity and germination,
and special care being given to the elimination of
weed seeds.

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

Stumpf & Walter Co.
Specialists in Golf Grass Seeds and Equipment
30-32 Barclay St., New York

Now, in an off-hand manner the average
hard-boiled citizen may dismiss all this
hard distinction with a wave of the hand and a
wide yawn, but the thinking greenkeeper
will listen to Daddy while he does a little
more explaining. In the first place, rot-
ted manure or vegetable matter may all
look alike, but believe me there's a dif-
ference from the plant growing angle.

Let us first consider the nature of rot-
ted organic matter obtained as the result
of the action of aerobic bacteria; that is,
the type which works in an atmosphere
well supplied with oxygen. Under these
conditions decomposition goes on until all
the heat of decomposition is given off. In
other words, the organic matter unites
with the oxygen of the air and the ulti-
mate product is a grade of humus virtu-
ally free from animal heat and of imme-
diate use to plants.

The humus obtained as a result of the
decomposition of organic matter by
anaerobic bacteria in the virtual absence
of oxygen is, on the other hand, of an en-
tirely different nature. Under these
conditions decomposition never goes to
that state of completion desirable for
humus intended for greens. The organic
matter is only partially decomposed, and
at this state of the decomposition it may
contain undesirable toxins; that is, com-
pounds of a poisonous or semi-poisonous
nature. When compost of this sort is ap-
plied to greens the oxygen of the air
unites with these toxic products and neu-
tralizes them, but in the meantime they
are not enhancing the turf to any extent
and may prove detrimental for the time
being.

Of interest in this connection are the
perennial arguments waxing pro and con
as regards the merits and demerits of the
various types of bog peat which has been
erroneously labeled humus. The word
humus applied to peat is erroneous. It
isn't humus in any sense of the word. It
is simply peat and nothing but peat. Peat
is a sterling example of the product result-
ing from the action of anaerobic bacteria
working in an atmosphere lacking in oxy-
gen. Freshly removed from the bog it is
often so loaded with toxin that when ap-
plied to a green it will frequently cause
serious damage. It is therefore customary
to expose this material to the air for a
considerable period of time before applying
it to turf. During this exposure to the air
the oxygen works on these toxic compounds
and neutralizes them, thereby rendering
them harmless.
Such properly weathered peat may be applied to a green with impunity as far as the possibility of injury to the turf is concerned, but on the other hand it will result in no benefit to the grass or to the soil because the organic matter present in peat is in a sort of semi-petrified condition and resists stoutly the decomposing action of the oxygen, bacteria, water, etc., of the ordinary soil type and especially an acid soil.

Weathered peat may be very aptly compared to a half-baked potato. The reaction of a traveling salesman who cuts into a 40 cent baked potato on a dining car only to find it raw in the center is exactly the same as the reaction of turf to peat. Both are only half-cooked and before the peat is of any value to turf the cooking must be completed.

For many years the owners of peat bogs have frothed at the mouth because the technical highbrows of the golf course maintenance racket have steadfastly refused to countenance the application of bog peat to turf.

Technical men have taken this stand simply because bog peat, as stated above, is only half baked, in the sense of the comparison with the potato and until such time as bog peat can be treated in such a way that the resulting product is of immediate value as a soil conditioner for turf the owners of peat bogs are out of luck. I believe the era of bog peat transformation or modification into organic matter suitable for soil is much nearer at hand than is commonly supposed. The ever diminishing supply of animal manure and the crying need for organic matter by nearly all soils will bring about the ultimate exploitation of bog peat in due season. In the meantime it offers little from the standpoint of efficient turf maintenance.

Laborious and expensive though the compost pile method of producing topdressing material may be it is nevertheless not exactly a safe bet to assume that any fertilizer mixture will take the place of the product of the compost pile as a topdressing material for greens. Nor do the various brands of commercial so-called "humus" offer a satisfactory solution of the problem. Nevertheless there does exist a simple, easy, inexpensive and practical system of manufacturing adequate amounts of topdressing material. Furthermore this method is not in the experimental stage.
because it has been used extensively by florists and nurserymen for several years.

The method in brief consists in taking a small piece of land, enriching it for one or at most two growing seasons by means of cover crops, fertilizer and if possible manure until the soil is rich as cream and in perfect physical condition. At the end of this period you can skim off three inches of the surface soil, run it through a screen and it is ready for the greens. In a future article I will discuss the “soiling” method of producing topdressing in detail and furnish pertinent reasons as to why it will ultimately render the compost pile as extinct as the Australian Dodo.

GREENKEEPING PROBLEMS in LEACH’S MAIL BAG

Sir:

Have you any Information regarding the use of Double Duty Tobacco Fertilizers on putting greens.


Answer.

Sir:

Have had no experience with “double duty tobacco fertilizers” as such but would advise that tobacco dust and refuse in general can be applied to turf with impunity. Usually, however, it is rather expensive as a fertilizer when compared with other sources of nitrogen such as ammonium sulfate, etc.

B. R. Leach.

Sir:

I am enclosing one pair of beetles which I hope very much are what we call in this section June Bugs, and not the Japanese Beetle.

For the first time our golf course has quantities of these beetles on the greens and fairways. I suppose the best method of treatment is spraying with arsenate of lead, but I am rather uncertain as to the best time to spray.

H. L. (Illinois).

Answer.

Sir:

The beetles forwarded under separate cover are your native May beetles. Arsen-