

practice putting green be? How should its use be handled? These and a number of other details ought to be available in a business as big as daily-fee golf is today.

"Standard contract forms for tournaments, group promotion efforts, tournaments, etc., all should be matters of collective interest, and although these details are simply points that come to mind casually, they show how all of us in the business are missing something by not working together."

Revive Association Talk

A mild effort was made to form a national fee course owners' association two years ago during a golf show at Chicago. There was wide-spread interest in the venture, but the absence of some one who could and would volunteer to undertake the large amount of work involved in forming the proposed association choked the enterprise in its crib. Then too, the boys were feeling quite independent and certain of doing better with the lone wolf technique, which is nothing unusual in a new business. Now the signals seem to call for a concerted business development effort and an exchange of information for the common good.

Lately GOLFDOM has been getting and answering requests for much financial, operating and sales promoting information concerning fee courses. Some of the requests have asked if there is a national fee course organization. There isn't one, brothers, but it looks like there should be and GOLFDOM will be pleased to see what the fee course owners have to write on this business of getting together.

GREENS SUBSOIL

Structure and Fertilization for Good, Permanent Turf

By WM. H. TUCKER
Golf Architect and Engineer

IN ORDER TO secure good, permanent golf turf there are certain fundamentals that must be understood just as there are basic fundamentals that must be understood and mastered before one can develop a good golf swing. In agrostology, the art of growing turf, the fundamentals come under 6 groupings: substructure,

drainage, topsoil texture, internal respiration, percolation and sanitation.

The substructure must be healthy, underdrained if necessary, to permit slow percolation and aeration and to conserve moisture. The top 6 inches of the surface should be fine and granular in texture so that the subsoil understructure may carry out its mission of soil sanitation. Fine turf-forming grasses will not adapt themselves to any kind of soil, therefore the soil surface must be adapted to the type of grass desired. If the surface soil is right but the substructure is wrong, it will be only a matter of time until the trouble reflects upon the one responsible for the original construction.

Because timothy, blue grass and clover are successfully grown in the vicinity is no sign that a green can be made upon the natural soil as quickly as one newly seeded on the properly constructed green or of equal quality. These grasses are not desired and if this error is made it will be many years before a fine turf is produced. It is not so much grass that is needed for a fine green but a good turf. Grass will grow almost anywhere, but it takes intelligent construction to produce a desirable turf.

Time a Factor

Therefore the subsoils must work in conjunction with the surface soils to favor and produce the kind of grasses desired. At least one or two months must be allowed for the soils to perform their functions, the grass seeds to develop and to nurse the young plants so that they will mature into a turf of fineness and color with dense, creeping roots. With proper construction and suitable soils only two grasses are necessary in some states; in others three varieties are needed for the ideal putting green.

An ideal green, when established, should receive at intervals a very mild compost dressing and must not be overfed; neither should forcing chemicals be used unless advised by an expert who knows positively what he desires to bring about. An organic dressing composed of humus, sheep manure, sea sand and good light loam, finely screened, will take care of the average good green.

The correct grasses of a putting green turf are not rapid growers and must be given water and sufficient time to develop their creeping roots. If force-fed against time there is a risk of the bents becoming coarse in texture and reverting into

IMPROVES

Hyper-Humus

SOIL

**ITS PERSISTENCE IN SOIL
VALUABLE FOR GREENS**

Added to the well-known features of "Newton Cultivated" Hyper-Humus such as moisture retention, soil warmth and aeration, general improvement, increase of beneficial bacteria, etc., is its persistence in the soil in comparison with common peat, peat moss, spent mushroom soil, well-rotted manure, etc.

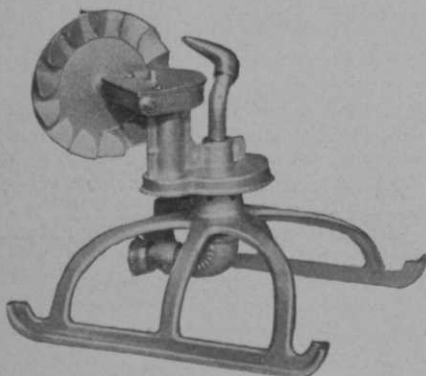
In a comparison test under scientific conditions—the disappearance of Hyper-Humus was only 9.9%—whereas the loss of other materials was from 13.4 to 32.4%—the latter figure being manure.

This means that Hyper-Humus will exert its influence over a more extended period than other organics.

If you haven't yet acquired the "Hyper-Humus Habit", when treating your greens—why not get in touch with us NOW for advice on renewals and renovations for 1932? Your turf deserves Hyper-Humus.

HYPER-HUMUS COMPANY

48 Park Place Newton, New Jersey

**Toro
Rotary Sprinkler**

Highly efficient for putting greens and large lawns, especially with low pressure. Breaks up water completely and assures uniform coverage. Adjustable for circular spread from 20 to 70 feet diameter. High grade construction throughout. Write for Toro catalog.

Toro Manufacturing Co.

3042-3168 Snelling Ave.

Minneapolis, Minn.

agrostis vulgaris, and once these bents are forced into a premature growth due to overfertilization, this fertilization must continue or they rapidly decline. I believe in a mealy organic dressing, very mild, a little at a time but often. This forces the grass to work for their sustenance and encourages them to go down, which they will do if time is allowed them to mature and the soil structure and moisture conditions are correct. In addition, proper substructure combined with correct surface soil texture eliminates the possibilities to a great degree of surface soil troubles, such as surface mildew, black mould, aldehyde, and acidity due to the setting in of sodium or calcium carbonate, the contents or residues of some fertilizer, which in a good free percolating soil structure will leach away.

Poor Construction Is Permanent

On a great many poorly constructed putting greens these surface conditions are liable to prevail in some of these forms. When such conditions exist there is nothing to do but tile, spike open or break up the soil structure to permit air space and to treat continually to prevent the further cohesion of the surface soil.

It must not be construed that, even if the original construction and soil conditions were perfect and the green ideal, it will not be subject to similar soil trouble, for trouble can be brought about very easily by not adhering to the original quality of the surface soil texture, granulation and character. A few topdressings of clayey loam, consistently rolled, especially when wet, will soon close up the porosity of the surface soil. Internal respiration is cut off. This brings on either mildew or an aldehyde surface condition in spots. Lime hydrate or some of the phosphates are often immediately applied, possibly as the corrector; neither will, to any great extent, correct this evil but will premeditate and promote the growth of white Dutch clover, carpet grass, chickweed, pearl-wort and *poa annua*.

**HOT SPRINGS,
ARKANSAS**Radio-Active Baths . . . Relief from
Circulatory Troubles

GOLF . . . GRASS GREENS

Write for Booklet and Special New Rates.

THE ARLINGTON HOTEL