

off the surface rather than into it. Lower areas are bound to accumulate an excess from high points with risk of scald and certainly of undue concentration. Excess water must be given in dry periods to assure any permeation and, even then, little moisture will sink keep enough to form a future supply for root use by capillary attraction. Root growth will invariably be shallow as hard soil makes penetration difficult and free access of air almost impossible. Friendly bacterial functions will likewise suffer. Roots will naturally stay close to surface where air and water are more readily available. Sturdy natural growth is thereby hindered and excess water and chemicals are required to keep appearance. Added susceptibility to disease naturally follows.

If topsoil is too friable difficulties will again be met. Here water will pass too quickly and too completely through surface and off green via the tiles. Not enough will remain in suspension. Fertilizers will wash right through before complete transformation and absorption takes place. A greater degree of watering again will be required at the cost of water and labor. The danger of overwatering is not as great as on the heavy-soil green, but the expense is there. Too much water is often worse than too little, particularly in hot weather.

What Soil Best?

It is therefore obvious that a proper soil medium must be provided not only for adequate drainage but for proper grass growth. The perfect soil is sand-loam with ample humus content. A sand-loam is a soil which will be solid and at the same time permeable; open enough to permit ready water and air absorption, compact enough to hold a portion of the water underneath and yet not show or hold foot-marks and other evidences of hard play.

A rough test can easily be made by picking up a handful of damp (not wet) soil and compressing firmly in the palm. Open and tap the hand gently. If the earth cracks and crumbles the consistency is approximately correct. If it remains in shape there is too much clay. If it falls too readily out of shape there is an excess of sand. There is still the question of humus content. Humus is required to promote bacterial growth and to function and aid in water holding and in keeping an open soil structure for root breathing.

If the topsoil comes from cultivated farm land which has been kept well fertilized with organic matter or from a properly made soil nursery, there is probably sufficient humus in it for initial use on a new green. For topdressing an addition is usually required to replenish supply on old green surface. Samples of soil from each green should be analyzed at regular intervals and tested for structure as well as for chemical composition. Each green will vary and topdressing proportions can be altered to best suit individual requirements.

To change soil structure on existing greens is at best a tedious job but one possible of accomplishment over a considerable period of time. It is always much quicker and often much cheaper to rebuild an entire green rather than attempt to change its structure through the only other method, continued topdressing. If the sod is fairly good it can be lifted, topsoil removed and mixed to proper consistency, sub-base corrected and tilted if necessary, in a surprisingly short time and at relatively small cost. I know of cases where such work has been done and play resumed in less than two weeks.

If correction is to be made from surface application only, a comprehensive plan must be worked out and followed over a period of several years. Frequent deep spikings and more frequent and more friable topdressings will hasten correction. Great care is required lest layers of different soil types be produced. Expert advice is required to assume final success.

ONE OF THE serious problems with which some of the metropolitan district clubs had to contend during 1932 was that of the so-called "tramp" golfer. This is the fellow who refuses to become interested in a club membership under any circumstances, but who will play around at private clubs, introducing himself as a guest of a member. Frequently the member is embarrassed by requests from the tramp golfer to be allowed guest privileges for even though the tramp golfer is willing to pay his own green-fees, he often plays the same course more days than many of the club's members.

Many clubs were compelled to post notices reminding their members of rigid enforcement of the usual rule that no guest could be extended privileges more than four times a year.