



## MAKING FINE FAIRWAYS BY

# Soil Conditioning

### —A BRIEF ON THE CLAY PROBLEM

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Supt. Mill Road Farm Course

WHILE a satisfactory turf can be grown on almost any soil under proper conditions, we often run into certain types that do not respond to the efforts of the greenkeeper as do others.

A good mellow loam is to be prized above all because it will produce and support a desirable sod with the minimum of attention and expense. But we are not all so fortunate as to find ourselves located in regions so blessed and from this happy mixture of sand, silt and clay we observe that soil types swing in two directions.

On the one side of the classification we

run into the so-called lighter types, soils of a more pronounced sandy nature, becoming so coarse in their texture that, given an opportunity they will almost blow away. They are usually poor and have physical characteristics that are not conducive, without proper help, to a good season-through turf.

On the other hand, there are soils with a deficiency of sand in their make up: the heavy, sticky, unyielding clay types, too often the despair of green committees and greenkeepers. These, too, may be brought into subjection with intelligent manage-



*P. and A. photo.*

Set back from the glistening waters of Lake Tippecanoe is the clubhouse of the comparatively new and very successful Lake Tippecanoe (Ind.) Country club. Its members come from a hundred mile radius.

ment and may equal if not surpass all others in the matter of acquiring a healthy, luxurious covering of green.

All kinds of soil will yield to some treatment, and while it may not be an economic proposition to bring poor and barren land into commercial production, still it is safe to say that there are very few areas that cannot be made to grow grass and good grass at that, with all the resources that we have at hand in this day and generation.

The real practical problem of soil management is of course, the fairway. Greens and tees may be built to any desired soil type that may be considered best for the particular situation, but with the fairways—well, we have to take them as we find them.

Too often they are left that way—in golfing parlance "as they lie." While the rules of golf prevent us from improving the position in which we find our ball, there is no prohibition against improving the lie from underneath.

Our heavy soils, though potentially rich in plant food, are frequently poor and stingy in releasing them to the growing plants. Clays are tight, figuratively and literally. An Irishman once said that he could withstand anything but temptation, a thought worth pondering over when wrestling with stubborn earth. With clays generally it is the craving for organic matter—humus—that is responsible for the unyielding attitude and if we act wisely and favor them with this deficiency, the riddle might be solved.

The treatment of any soil begins by understanding its deficiencies and shortcomings. Two farms may lie side by side on apparently the same kind of soil and one man's land yields him bountiful crops while the other is a failure. Why? It must be that one understands his soil better and is farming more intelligently.

Let us bring this lesson home to the golf course and tackle that job of grassing over forty or fifty acres of fairway. First let us ask, what is necessary for the growth of a healthy grass plant? To cut a long answer very short we may say: principally light, air, moisture and food.

The first we have no control over but a moment's thought will convince us that the remaining three factors are tied up very closely with the way we handle the ground in which the plant roots make their home. Let us pursue this matter and consider the relationship that this thought suggests.

Air. All plants need air, not only for stems and leaves, but also for the roots. Will our soil hamper or promote a free circulation of air to the roots? If it does not there is the first problem, most likely one of drainage.

Drainage must be considered from two angles—surface drainage and under drainage. Surface drainage must be complete and adequate.

Under drainage is required at times to draw off all unnecessary water since air and water cannot occupy the same space and water that merely fills the vacant spaces in the soil is not only useless, it is dangerous to the health of the roots. Further we must remember that a clayish soil has a tendency to dry out in large blocks leaving gaping chasms.

This shrinking of the soil will cause an unequal distribution of air and moisture, therefore must be eliminated by supplying sufficient organic matter—humus—to overcome that urge of the particles to bind themselves together like concrete.

How can it be supplied? By generous applications of manure, sand or peat, or plowing under a good green crop. This will ensure satisfactory conditions for the distribution of both air and moisture.

And lastly food for the young seedlings and the growing plants. In this matter the wise person will take no chances but will fertilize anyway, to be repaid a hundred fold for his trouble and expense.

The foregoing paragraphs apply to the treatment of soil to be seeded down to fairway grass but where we find a fairway already established or partially established, a different plan must be adopted.

It is doubtful, if it ever would pay to rip up and reseed though there might be circumstances where the sod is so meager that no sacrifice is involved other than the loss of play.

Besides the absence of grass the objectionable feature of scabby clay fairways is the shrinking and cracking in dry weather. Applications of coarse sand spread lightly will do a lot to correct this as the sand particles will distribute the evaporation of the water from the surface and while cracking may take place, there will be no gaping chasms.

There is nothing like turf to prevent this cracking so a good covering should be encouraged with all possible speed. This will mean topdressing, either with soil or manure or chemicals. It may pay to haul on good top soil, particularly to



P. &amp; A. Photo

The West Point cadets are given group golf instruction by Fred Canonsa. In the next war Canonsa promises to have the boys out of the trenches in one stroke.

make a seed bed to reseed the bare places, but on the whole issue it is expensive where labor is high priced because so little real plant food is added: much better a fall application of manure.

However the general tendency is towards the use of commercial and chemical fertilizers which can be put on easily, quickly and with no inconvenience to the players. The fertilizer used should be high in nitrogen or ammonia content and preferably be organic in nature. In most soils nitrogen is the limiting factor and the lack of it is largely responsible for poor growth on fairways. Given a dose of fertilizer rich in nitrogen and a gentle rain, the poorest of turf will soon grow out of all recognition.

Speaking from practical experience, we have had very good success at Mill Road Farm with activated sludge and sulphate of ammonia. Both are applied at one application from a lime spreader by keeping the hopper well filled at the rate of one pail of sulphate to each bag of sludge. This gets well mixed by the agitator. We apply at the rate of 1,000 lbs. of sludge to 150 lbs. of sulphate per acre, the cost being about \$22. It costs between \$800.00 and \$900.00 to treat 18 fairways with the above materials.

## This Treatment Kept Our Greens in Good Shape

By TOM BOYD  
Fox Hills Golf Club, Stapleton, N. Y.

LAST year was a terrible year around New York for brown-patch. The method I used at my club with very great success

was to top-dress every two weeks with arsenate of lead, 10 lbs. per 1,000 sq. ft. Every two weeks I applied  $\frac{3}{4}$  lb. of Nu-Green in 50 gallons of water to 750 sq. ft. of green surface.

I also found that using 100 lbs. of powdered charcoal per green once a month during the summer season helped to keep our greens in good shape. I think we were about as good as any of the courses around New York and I can only pass on to you what I used on our greens here with success.

Some golf clubs are liable to use too much fertilizer on their putting greens, I believe. I am going to use more charcoal this year, as I find that it keeps the grass healthy and sweet and doesn't force the fibers out of the ground.

## Plan First P. G. A. Senior Meet for September

FIRST annual tournament of the P. G. A. Seniors' association will be held at Westchester-Biltmore, Rye, N. Y., in September, the exact date to be announced later. The organization consists of members of the Professional Golfers' Association of America who have been master pros for 20 years or more in this country.

Membership of the organization now is approximately 75. There is some talk of limiting the membership roster to 100. The organization is headed by Maurice J. McCarthy; vice president is Alex Smith, Peter Clark is treasurer, and Jack Pirie of Woodmere, L. I., is secretary. Communications relative to membership may be addressed to Mr. Pirie.