ventilation of the soil. At intervals it may be well to cover the fair-greens with dark, loamy soil, but in any event an application of the above formula two or three times during the season will keep the fair-greens in good condition, if the foundation has been properly laid.

The soil for the putting-green should be composed of lighter loam and a good deal of sand. The object here is to grow grass exclusively, and hence the fertilizer used should be strictly a grass fertilizer. The formula should be high in ammoniates and low in phosphoric acid and in potash—about 6 per cent to 7 per cent of ammonia, from 3 per cent to 5 per cent of phosphoric acid, and from 1 per cent to 2 per cent of potash.

## The Most Important Thing On a Golf Course

W. A. ALEXANDER

For thirty years I have repressed myself and kept out of print on the subject of golf courses, but the excess waste has at last forced me to write this article. Millions upon millions are being wasted annually on the up-keep of courses and putting-greens because common sense is not used in taking care of them after construction. The putting-green is the billiard-table of your course. It is constructed with a view of being accurate and true for the purpose of gently driving a small sphere into a small hole from a distance of one foot to fifty feet. How foolish to spend \$1,000, \$2,000, or \$3,000 to have a beautiful putting-green and then immediately proceed to allow it to become fit only to walk upon and not play upon! The answer to it all is, Take everything out of your putting-green that should not be there, and take it out all the time, each day and each hour if necessary.

I know there are not a half-dozen golf courses in the Chicago district. and probably not twenty-five in the Metropolitan district (and the same will apply to all districts), that keep their putting-greens clean from grasses and weeds that do not belong there. The putting-green is a delicate fabric; it is intended for delicate play and accurate play. I have in mind at least one golf course that is some nine years old, whose puttinggreens were built scientifically correct at the outset, that are today exactly as they were the first year, and the first year they were as true as a billiard-table, and today they have not a weed of any description or any class that should not be there. It has taken infinite pains to keep them this way, but it has paid one-thousandfold to do so. The work of keeping them clean has been as nothing compared with reconstruction, which would have been necessary had they not been kept clean. The grass roots of these greens are from three and one-half to four inches in depth, and you could cut a slit in the edge of any one of these greens and roll it up, if it were physically possible, as you would a rug on your floor. It required no superlative knowledge; it required no expert advice from anybody to accomplish this; it only required diligence and simply attending to one's own business as you would any other thing of value that you might own.

I am prompted to write thus emphatically upon this subject as this country is building hundreds of golf courses each year, employing ex-

pensive architects and spending from \$50,000 to \$500,000 upon construction of courses. This is a warning that if they are properly constructed, as hundreds of them are, by men who know their business, it is almost a crime to make them and then allow them each year to deteriorate simply from lack of intelligent common sense. Get some member of your club who has the common intelligence to do a good thing and do it well, make him your chairman of the greens, and don't get the idea that the green-keeper whom you employ and pay to do the work will do this work alone. There are a few splendid greenkeepers, but only a few professionals. Someone who knows can direct and watch him each hour to bring about the best results.

We are building putting-greens scientifically—proper drainage, proper surface, proper soils. Let us keep them when once finished. I know a golf club twenty-odd years old that is now being torn up simply because they have had a series of administrations that have failed for one reason or other, all with good intentions, to keep the fairways and greens up to the original standard. \$150,000 at least have been wasted on this course I know plenty of others almost as bad. They will eventually have to be reconstructed.

The delicate foreign grasses that give such wonderful surface and putting textures seem to invite every form of foreign vegetation, fungus, etc., known to man; but it only makes it more necessary to be vigilant. The old golf courses with old grasses, red top, wire grass, and all sorts and kinds of grasses in the fairways, as a rule are harder and tougher and stand more punishment. The average club seems to be satisfied with them; but to know the joy of the good, pure fescue and bent turf is a wonderful feeling if you love the game. *Poa annua* and other invading grasses look well and are satisfactory early in the spring, but as they stiffen and become coarser there is no comparison in the trueness with which the ball will ride into the hole truly and smoothly. In this kind of a green and the one made of the fancy grasses as above stated your watchword should be, Keep the greens clean. A patch of chickweed two inches square will be a foot square in a month, four feet in six months, and cover a quarter of your green in a year.

Poa annua will take your green completely in two years unless taken out—three at the most. Take out your Poa annua and your chickweed in March and April; take each dandelion and each chickweed, etc., etc., out with a knife or a tool for the purpose, the moment it shows its head. Make up your mind you will do one thing well on your course, and that is to keep your putting-greens clean and keep them to their original trueness. Putting-greens properly constructed of the right kind of soil and drainage. and properly cared for, should not require a single seed after original construction. I know a course or two that have never had any seed sown upon the putting-greens since the original sowing. In fact, putting seed on putting-greens is merely a waste of time and money. Bad spots should all be filled with turf by a turf-cutter or hole-cutter, taking the spots out and replacing them with the same cutter, filling them with rich soil, watching closely and keeping them watered each day until they take hold. The outer edge of your putting-green can be used for this purpose where the green is large; and you should have a seed bed, and a large one, to draw upon; and your seed bed should be made of the best soil and taken care of vigilantly and as delicately as you would your putting-greens.

I could write volumes on fairways, green construction, trap construction and the care of them; drainage, fertilizers, soils, etc., etc., but all of them are as naught and unimportant compared with the putting-green.

Keep your putting-greens clean!

## Dear Chauncey Letter I

HAZLEWOOD FLATS, IND., September 6, 1921.

DEAR CHAUNCEY:

I'm much obliged for your letter, but you might as well come off your high horse and drop the air of superiority you have assumed. I'd feel a little more like trying a sample or two of your advice to see how it works if it did not carry with it the strong suggestion of finality. You'd make me feel that by following in your steps I can avoid mistakes and get to perfection by the shortest and easiest way.

If you ever go bust in the hardware business and have to make a living you certainly must become an expert, for with your airs and attitude of mind and your ability to respond with an answer to any question you'd have them all beat. I think you'd be able to run a correspondence school

in greenkeeping and get away with it.

Now, Chauncey, let's understand each other. I enjoy and profit by your letters because I think you've progressed a good deal as an amateur greenkeeper, but you are a long shot from knowing it all; and just so you'll know I've got your number let me remind you of the ton of worm-destroyer you have in your barn that was sold to you as a favor and at twice the cost of other kinds quite as efficient. Have you forgotten the fertilizer you bought because it was "complete"? You thought you had it on the world because you were able to buy a fertilizer that contained all the essential elements—nitrogen, potash, and phosphorus. You learned all right what constitutes a complete fertilizer, but it cost you about \$50 a ton extra to do it, and even at that rate you bought so much that you had it around the place for two years.

In the course of your education you "have fell" for all the experts,

one after another, and in many cases twice in the same place.

Instead of pretending to be old John W. Wiseman himself why don't you come right out and show neophytes like me the scars and sore spots on you that resulted from your contact with experts? I'd feel safer asking you a question about machinery or tools because the loft of your barn looks like a museum; it's packed with junk that you've paid high prices for and found perfectly useless. You have tried everything under the sun, and you ought to know. But don't forget that I understand that you were at the head of the sucker list yourself just a few years ago. Your advice will be more likely to be taken if you'll make it a little more interesting by showing in each case how you got your experience. A reformed drunkard was always more appealing as a prohibition advocate than some presiding elder who thought grenadine as sinful as absinthe.

Don't pose, Chauncey, and don't pretend or even let people believe that so far as experts are concerned you have been or are unsullied—a