

Going After the Grubs Shows Greenkeepers Problems

By B. R. LEACH

CAREFUL, Boys, Careful! If you drop him again he'll never get well.

In view of the very large amount of lead arsenate now being annually applied to the turf of golf courses and lawns for the control of grubs, earthworms and weeds it occurs to me that the readers of GOLFDOM might possibly find it interesting if I recounted some of my experiences in large scale grub-proofing operations involving the treatment of hundreds of acres of fairways, etc., in the vicinity of Philadelphia and New York. Furthermore, in spite of all that has been written on the subject of lead arsenate in its relation to turf, many individuals, and especially those using the chemical for the first time, find themselves in a decided quandary as to their understanding of its action on grubs and turf and what to expect and what not to expect. Under the circumstances it is suggested that a close reading between the lines of this article may assist them in obtaining a more adequate knowledge of the chemical, and its actions and reactions on turf and on the enemies of turf.

The following question is frequently asked in connection with lead arsenate and grubs; when grubs are present in turf and the turf is being injured as a result of the grubs feeding on the roots of the grass and lead arsenate is applied, how long does it take for the arsenate to kill the grubs?

This question cannot be answered in two or three words. Rather it must be considered from the following angle: when grub injury to the grass is apparent to the casual observer as evidenced by the yellowing or browning of the grass and also by the very little resistance it offers when pulled by the hand it is a safe bet that the grubs have been feeding for some time, that the grass roots are pretty well chewed off and that the grubs are at least half grown and husky.

Under these conditions if you apply 250 pounds of lead arsenate per acre at once

on noticing the symptoms of grub feeding and if you are fortunate in having the application of the chemical followed by a nice soaking rain you will see the grass begin to "firm up" within ten days to two weeks. (Even heavy dews help in this respect.) When I say that the grass "firms up" I mean that it does not lift as easily when you tug on it. Nevertheless if you were to dig down in the turf at this stage of the proceedings you would in all probability find plenty of grubs.

This seeming contradiction of the grass firming up while the grubs are still present and *apparently* still waxing strong is something that badly confuses the average user of lead arsenate and causes him to jump to the conclusion that the arsenate is not functioning.

The explanation is simple. In the first place when grubs in sufficient numbers are feeding on the roots of fine turf they chew off the roots more rapidly than the individual grass plants can replace them. Consequently the grass plants cannot absorb sufficient food and water, turn yellow and then brown in color and lose their toe-hold in the soil so that they offer little resistance when you pull on them with the hand. Under these conditions, unless the grubs are checked, the grass dies.

Why Grass Gets a Chance

Now while all this is going on the grubs are right up just below the surface of the soil at a depth no greater than one-half inch. When you apply the lead arsenate to the turf the rains or heavy dews push it down to the soil surface where it is acted upon by the soil moisture thereby producing soluble arsenic. This soluble arsenic works down into the soil (it only has to go one-half inch) the grubs eat it and are thereby rendered sick to such an extent that the amount of root feeding they do is appreciably decreased, in fact almost stopped. Under these circumstances the grass plants throw out new roots, and since these are not chewed off by the sick grubs

the grass takes on a new lease of life even though the grubs are present.

The moral of this tale consists in the fact that a sick grub is virtually as harmless to grass roots as a dead grub as far as injury to turf is concerned. Grubs sickened by arsenate in this way ultimately die although death may be delayed for two weeks. The older and larger the grub the more resistant it is to the arsenic and the longer it lingers on in this sickened condition.

If you wish to ascertain whether the lead arsenate you have applied is acting on the grubs it is suggested that you carry out the following simple procedure: First dig into a piece of turf that has *not* been treated with lead arsenate and unearth a few grubs. These grubs are of course normal, healthy specimens and if you examine them closely you will note that they are tightly curled with the head and tail held close together. On squeezing them gently you will find that their flesh is firm to the touch like a rubber ball. The skin of the grub is bright and lustrous. Now go to the turf treated with lead arsenate and unearth a few grubs. If the lead arsenate has begun to do its work you will find that these grubs are not so tightly curled, that the flesh is flabby when squeezed and that the skin of the grub has a gray, dull, unhealthy appearance. Remember it is always best to examine some normal grubs before examining those in the arsenate turf, otherwise, unless you are fully experienced, you are apt to take too much for granted.

During the past few years I have taken jobs entailing the cleaning up of hundreds of acres of fairways where the grubs were chewing up the grass roots and where you could roll up the sod like a carpet, not for just a few square feet but acres in extent. In fact it always seems to me that the average club never takes the trouble to ascertain where I live until the course is in danger of being washed bodily into the nearest creek.

Last Ditch Battle

The first job of this inch-from-the-precipice sort that I undertook was the Ashbourne club of Philadelphia in the fall of 1927. At this date the fairways were completely shot. Due to the precipitancy of this grub attack plus the end-of-the-year flatness of the club treasury I was beseeched to give them temporary relief at the lowest cost until the grub-fighting budget could be enhanced by an assessment party.

Consequently, being notoriously soft-hearted in my dealings with the rich and taking pity on this club full of millionaires I took a long chance on losing my reputation for reliability and sound mentality to say nothing of the possibility of being lynched by the gentlemen of Ashbourne in the event of my failing to kill the grubs, and recommended a dosage of 125 pounds per acre, just exactly one-half of the quantity which should really have been applied.

Lo and behold! The grub-feeding was checked and the turf came back with a bang in the spring as a result of an ample application of milorganite and manure. I visited the club in July and the fairways were really looking good considering the hoe-harrowing they had undergone the previous fall. There were plenty of Japanese beetles flying around and going down into the sod to lay eggs for another crop of grubs. In August I again visited Ashbourne and spent the day making diggings here and there all over the fairways looking for grubs.

After walking about 26 miles and digging in 342 places without finding a single lousy grub I finally came, late in the afternoon, to the far side of the 17th fairway. By this time I was entirely fed up on golf courses, fairways, turf and grubs and would cheerfully have given a five dollar bill for a bottle of real beer and a Swiss cheese sandwich. Making a perfunctory jab into the turf with my trusty toadstaber, a square foot of turf came away in my hand, exposing sixteen steely-eyed grubs to the gaze of the cruel world.

I believe that I swooned dead away. At any rate when I came to with beads of cold sweat on my clammy brow, my head reclined on a patch of chickweed whose shy and retiring flowers were caressing my pallid lips.

Can't Miss Any Bets

Striking across the course like a scared gazelle I finally found the greenkeeper at work in the tool shed.

"Tony," says I, "do you know that the far side of 17 is lousy with grubs?"

"Oh, yeah?" says he in a very perfunctory manner. "What do you care?"

"Oh, yeah? Hell!" says me in a very irate manner. "What kind of an answer do you call that?"

Realizing that I was on the verge of an apopleptic seizure Tony thereupon explained that the far side of 17 was outside

the line of play and had consequently received no lead arsenate.

The next root-hog-or-die job of grub killing I undertook was with the Cedarbrook club of Philadelphia in the fall of 1928. They were in the same boat as Ashbourne the year previously. Grubs all over the place and the turf so loose that every time a stock-broker made an iron shot he hooked up a divot big enough for a door mat.

I have it on good authority that no member of Cedarbrook is worth less than \$500,000 (due allowance being made for the recent stock market crash). And yet they gave me the same old song and dance with regard to going easy on the cost of cleaning up the grubs. Again, against my better judgment we applied 125 pounds of lead arsenate per acre with a liberal shot of milorganite and within two weeks the grass was firming up, that is what grass there was left.

Early next spring we examined the turf, which was coming back strong. There were plenty of grubs still present in the sod but these were in a subnormal condition due to the arsenic they had eaten and were doing little feeding on the roots. Considering the dosage of lead arsenate applied I personally was very well satisfied with conditions.

In the meantime, however, the club had worked up a grub-killing budget and had ample funds on hand. Consequently another application of 125 pounds of lead arsenate plus 500 pounds of milorganite was made late in April. In other words the club had had one bad dose of grubs and were determined to have no more.

I again visited the course in August and the fairways were really good and virtually free from grubs. However, the rough, which had not been grubproofed, was undermined with grubs and I understand that this portion of the course was grubproofed that fall.

In closing this article it is enough to say that anyone carrying on large scale operations of this sort with golf clubs learns a great many valuable things if he keeps his eyes and ears open.

In the preliminary stage of taking on jobs I perforce do considerable wining and dining with the green committee, give them a bit of bull and patiently listen to ten times as much in return. But when all this preliminary diplomacy was done with and out of the way the greenkeeper and myself went town to the tool shed, sat on a couple of upturned boxes and got down to

business. From that point on things began to move.

The manner in which Lew Evans, greenkeeper at Cedarbrook and Tony Sante, greenkeeper at Ashbourne, can arrange, plan, organize and go through with such a job as treating 80 or 100 acres of fairways in a few days' time, without a ripple stirring the smooth current of routine course management is truly amazing. Believe me the administrative ability of the average greenkeeper is vastly under-rated. Whenever I do a job with a club I invariably have three or four green-committeemen fluttering around like a bunch of hens that have just been dipped in a rain barrel and getting in everybody's way while the greenkeeper goes ahead and saws wood.

Firm for 250-lb. Dosage

Another point I have learned consists in standing firm for the 250-pound dosage of lead arsenate per acre. No more listening to the cries of poverty and depleted treasury as an excuse for cutting the dosage. The 125 pound dosage has done and will do lusty service but is just a little too near the ragged edge to suit me. Some day some pugnacious club member is going to find the sick grubs in turf treated with the 125 pounds dose and yours truly will be in a sweet mess. There's only one kind of a grub to show such a guy and that's a dead grub. He can't give you much of an argument then but I have something else to do besides try to convince a 200 pound bond salesman that the grub he is holding in his hand is so sick it cannot eat. He's apt to jump to the erroneous conclusion that I'm spoofing him and poke me one in the nose.

Clapper Kid Is Genius at Birth

SAMUEL MARSTON CLAPPER, writing from Bay State hospital Jan. 28, 4:30 A. M., advises the golf mob via GOLFDOM that he has been born to Mr. and Mrs. Orville Clapper of Newton, Mass., Orville being the New England Toro man as the greenkeepers and chairmen in that part of the country well know.

The letter is written in youngster's handwriting so it must be Samuel Marston's sure enough. The kid not only is a wonder at being able to write so soon but because he has started at such an early date to keep convention hours.