

Worms on the Green

In the preceding article I tried to point out the dangers of over-rolling, in this I mean to deal with the question of worms in the soil and the desirability of getting rid of them. It is an undoubted fact that worms multiply much more quickly in soil that is firm, or packed, than in soil that is of a loose character. To the observant greenkeeper this is very evident, and on courses of a heavy clayey soil he will soon find that they will have become an absolute nuisance on the putting greens, and measures will have to be taken to combat their burrowing operations, as otherwise if allowed to multiply and deposit their casts all over the surface, in a very short time he will find himself in trouble with his grass.

As I have said he may try to sweep the casts off but this at the best is in the end a hopeless battle and sooner or later the greenkeeper will awaken to the fact that the worms have beaten him. In the case of young turf, those circumstances will, of course, do harm much more quickly than in the case where old turf has been worked up to a putting surface, but in either case the greenkeeper will be faced with the problem of fighting his enemy, the worm, sooner or later.

I make bold to say that I, myself, I think, was the first greenkeeper to tackle this great problem. Away back in 1895 I held the position as greenkeeper to the

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Edinburgh Burgess Golfing Society at Barnton near Edinburgh, Scotland. I had worked the putting greens up from the old turf, and good greens I had too, but as time went on the worms seemed to multiply to an extraordinary extent until, especially in spring and fall, it became an utter impossibility to keep the surface in anything like decent putting condition. To begin with I tried sharp sea sand, this helped a little, but only for a short time, as very soon things got as bad as ever and perhaps a degree worse. I was almost at my wits' end, but was by no means beat in the battle, so looked about for another weapon to circumvent my enemy. At last I hit on something that was really of some good. I got on the right side of one of the members, who was a wholesale druggist and I persuaded him to give me a quantity of corrosive sublimate (a very deadly poison). After several experiments in out of the way corners I at last hit on the proper quantities to use per gallon of water. I, however, went about the work of exterminating the pests very cautiously and that fall I treated three greens.

I certainly removed the worms and the greens played splendidly all winter, being clean and firm with a splendid putting surface. The poison did not seem to have injured the grass in the slightest, but when spring came I surely got a rude awakening. The greens I had treated did not answer to the spring growth but went gradually back and I found myself in a worse dilemma than before. After a great struggle I eventu-

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ally pulled them round again but I then and there made up my mind I had finished for all time with corrosive sublimate as a worm eradicator on a wholesale basis.

Afterwards I made tests with it to find out exactly how it acted on the grass plants. I made a very careful study of its action and found that although it did not at first appear to injure the turf it eventually did so, and the character of the soil was a great factor in determining how long or short a time would elapse before the turf would begin to show signs of deterioration. On heavy soil I found its effects to act more quickly than on soil of a lighter character, but in both cases the results eventually were one and the same. I came to the conclusion, that I was off the right track and looked about for some other solution of the problem.

I had read that worms were very sensitive to their skins so I thought that if I could work in something from the surface that would, shall I say scratch them a bit, they might be inclined to curtail their operations to below ground. This also after a trial turned out a failure. I then tried lime water with no better results and was almost in despair. I had by then shifted my greenkeeping operations to the Mid Surrey Golf Club near London, where I very soon found myself face to face with my old enemy.

I had heard of some powder that seemed to fit in in my fight with my enemy but had not been experi-

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mented upon just long enough to ascertain how it should be used. I obtained a small quantity of this powder and after many experiments found out just exactly how to use it to the best advantage. Again, however, I went warily so as to make no mistakes. After allowing a reasonable length of time to expire so as to ascertain what effect the powder would have on the turf I found to begin with, that I had effectually got rid of the worms and at the same time the powder contained the properties of an excellent fertilizer.

As is well known it is possible to play golf all the year round on the courses situated around London, the climate admits of this. At that time, however, it was the custom to lay up the summer putting greens and play temporary, or winter greens, when the bad weather set in. This had been the annual custom at Mid Surrey. Well, after I had thoroughly convinced myself that I was at last on the right course, I set about to exterminate the common enemy on every putting green on both courses (the ladies have an eighteen-hole course separate from the men's). I well remember one of the best known golfers, one who has held both amateur and professional championships coming up to me when I was busy on the work of general extermination and offering to make a bet that in six months' time I would not have a putting green on the two courses worth playing on. It is to his credit that at a later period he was amongst the first to congratulate me on the successful war I had carried

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into the enemy's country and later when he himself had been put in the position of secretary of another well-known course, I had the honor to be called in by him to treat the putting greens there in the same way.

Therefore, I may perhaps be pardoned when I claim that I may have the honor of being perhaps the first greenkeeper to successfully tackle the problem of the worm. Apart from the party I have just mentioned, I was attacked in the press at the time as well. As everyone knows Darwin was a great authority on the worm. I have read his writings on the subject with very great interest. In olden times it was maintained, and perhaps in certain quarters the opinion still holds good that the worm is most assuredly nature's drainer. This is what I was told when I went after his extermination. I had it pointed out to me that if I killed him out I was stopping up all natural drainage and that in a very short time the soil would become sour and waterlogged.

I had made my experiments, however, and my answer to those critics was absolutely the opposite. In place of a black smudgy, sticky surface of turf I presented to the members a fine, clean, dry and firm carpet on which it was possible to play all the year round without the slightest chance of doing harm to the grass plants. At Mid Surrey the members were so pleased with the results that I eventually killed the worms out of several of the fairways with the very best results. Therefore, I say that where worms be-

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come a nuisance on putting greens, get rid of them, it is absolutely impossible to keep a true putting surface with them in the ground. Let me not be understood to say that when the worms have once been got rid of that the greenkeeper can afford to sit back and take things easy. Far from it. As I have already said drainage is most essential and has to be carefully looked after.

Worms give no drainage in my opinion because if this were the case when their burrows got filled up with water they would very soon get drowned out. Try a bit of soil where worms are numerous and observe just how dry their burrows are all lined with leaves, etc., which they have gathered from the surface. Place a worm in water and see how long he will survive. We will take it for granted that the greenkeeper has succeeded in exterminating the worms from his greens. He may have been in the habit of giving them a yearly top dressing of sharp sand and he may be inclined to think that with the extermination of the worms the surface has become so fine that this dressing should be discontinued, if so he is mistaken as he should see to it that the surface is kept open so that air may reach the roots of the grass and drainage obtained at the same time.

The greenkeeper should, however, see that this dressing is not overdone. In the foregoing I have tried to point out the advantages to be obtained from the eradication of the worm and what I have written

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I have gained from practical experience and in conclusion I emphatically say, get rid of the pests once and for all if the proper sort of putting surface is desired, as with them in the ground this is an impossibility.

Let me just add that on one green, the sixteenth, at Mid Surrey, I gathered up three and one half wheelbarrow loads. The green measured thirty-five yards square. Tees and fairways should be treated in the same way, but where it is not possible perhaps from financial reasons the approaches should certainly be done as it is out of the question to play an accurate approach shot where the ground is infested with worms as in dry weather, the ball may be diverted in any direction, should it pitch on one of the small hillocks, and in wet weather it might stick in the mud deposited on the surface. In my opinion, the approach to a green is just as important a part of the greenkeeper's duties to see that it is kept in condition as the putting green itself.