

Control of Crawfish

We are indebted to Mr. C. K. Anderson, President of the Ridgemoor Country Club, Norwood Park, Illinois, for the following account of the successful control of crawfish by means of wire cloth buried underneath the turf, so as to prevent the crawfish from coming up from beneath and destroying the greens. Mr. Anderson informs us that the material used was 3 by 3 mesh No. 16-gauge wire cloth galvanized after weaving. It was employed by Mr. J. E. Millikin on a golf course at Orange, Texas. In a letter to Mr. Anderson, Mr. Millikin writes as follows: "This wire cloth will be placed 16 to 18 inches under the top of our greens and below the grass roots, and will extend under the bunkers bordering the greens, laid down the entire width or breadth of the green, lapped 2 inches and wired about every three feet to hold in place. Numerous other ideas have been tried to eliminate the crawfish, such as cinders, gravel, and iron chips, but the hardware cloth is about the only thing that the writer knows of which has proved successful. The crawfish, which builds his mounds so nicely after a heavy rain, is commonly known as a 'thunder crawfish.' Some are striped on the back, others red, and they vary in length from 1 to 1¾ inches. They create a large opening beneath the surface of the ground from 6 to 8 inches in diameter, varying in size from a quart measure to as large as the ordinary straw hat. These holes retain water except in extremely dry weather; and when it rains the crawfish enlarge their water lake, creating the mounds above the surface of the ground, and which no doubt you have often seen decorating the fairways and the greens of most southern golf courses. Our selection of the size of wire to use was based on what we thought would prove the least expensive in the long run and which would consistently answer our purpose."

In connection with this it is thought desirable to call attention also to other methods of exterminating crawfish. As the pest lives only in very wet soil, the logical remedy is good soil drainage, which has been found to be effective. Carbon disulfid is also very effective. This is best applied directly into the burrows by means of a long-nozzled oil can or kerosene can with a short nozzle. The hole in the nozzle in either case should be partially closed so as to allow the liquid to drop out slowly. Five or six drops of the liquid should be allowed to enter the burrow and the hole to the burrow immediately closed by stepping on it with the heel. It must be remembered that carbon disulfid is extremely inflammable and it should be used with as great care as is gasoline. It has also been reported that the crawfish may be destroyed by dropping a piece of calcium carbide down into the tunnel. The carbide unites with the water at the bottom of the hole, making a gas, which kills the animal. A couple of tablespoonfuls of gasoline dropped into each hole, and the hole immediately covered again with earth, is also said to be efficacious.

Applying ammonium sulfate.—The question is frequently asked as to what is the best way to apply ammonium sulfate. We have a method we are using that is both efficient and economical. Mix ten pounds of sulfate in a fifty-gallon barrel of water alongside the hydrant of your green. Make a T-shaped piece of pipe, connecting the straight line to the hydrant on one

side and the sprinkler at the other, using the down stroke of the T as a syphon with a short piece of hose to the barrel. We plug up the opening in the pipe to the barrel so that it is only about one-fourth the size of the hydrant opening. In this way we get ten pounds of sulfate on half a green, diluted in about 250 gallons of water. Move your sprinkler to the other half of your green, mix another ten pounds of ammonium sulfate in your barrel of water, and repeat the process. In this manner your green gets the fertilizer while being sprinkled without any extra work.—*H. P. Kidd, Wheatley Hills Golf Club, East Williston, Long Island, New York.*

Injecting Carbon Disulfid into Ant Holes.—Ants have bothered us very seriously on a number of our greens. I have tried almost every device to inject carbon disulfid into their holes but have not as yet found a satisfactory implement that is proof against spilling the poison and will not clog up while injecting the liquid. I finally fixed up a simple little device which works pretty well for us and may be of interest to readers of THE BULLETIN. I got a small rubber syringe which can be bought at any drug store for about 25 cents, not a pump syringe but a ball syringe. We first used this just as we bought it, but found that with the spout of the syringe as it was there was considerable danger of spilling poison on the grass around the hole and not getting the liquid directly into the hole. We found by taking an ordinary parlor match and sharpening one end to a point, running the blunt end into the spout of the syringe, which it just about fits, that we could inject the poison fairly rapidly without any danger of spilling, as the liquid runs down the match, which can be stuck into the ant hole. We inject possibly five or six drops into each ant hole, and cover as quickly as possible with moist soil. We tried oil cans with various-sized holes, but in every case found they clogged easily and a great deal of time was wasted in cleaning the outlet. An oil can with an outlet sufficiently large to avoid clogging spilled too much poison on the grass. Our arrangement is crude and we are not satisfied with it and would appreciate description of any device used elsewhere which is thought to be effective. Although this is the most satisfactory method we have found for treating ant tunnels with carbon disulfid, it does not by any means completely solve the ant problem, as where the ant nests are numerous the treating of each nest requires an enormous amount of time. When we treat one part of a green where the ant holes are numerous the next day there are just as many in some other part of the green. Carbon disulfid kills a good many of the ants but a great many escape coming up the hole as the liquid is dropped in, before the fumes have affected them.—*Thornton Conover, Tredyffrin Country Club, Paoli, Pa.*

(The Editors fully agree with Mr. Conover that the carbon disulfid method does not solve the ant problem and that the treating of each nest, which is necessary, requires an enormous amount of time. An entirely satisfactory means of ridding greens of ants is yet to be worked out. A suggestion might be added, however, and that is that some experimenters report that covering the hills and surrounding area with wet burlap sacks immediately after the application is made, is helpful in retaining the fumes in the tunnels for a longer period.)