

that the young 'hoppers when they hatch are unable to reach the surface.

By all odds the best method of destroying these insects is the use of the "hopper dozer," or kerosene pan. This is made of stove-pipe iron by turning up the sides and ends so as to make a long flat pan about four inches in depth. This is then mounted on runners varying in height according to requirements. On the frame back of the machine is stretched a piece of cloth to prevent the insects from jumping over the pan. When ready to begin work this pan is partially filled with water and then some coal oil is added. If the ground is level no cross pieces are necessary, but if the machine is to be used on sloping ground it should be made to prevent the oil and water from running to one end. The height of the runners will necessarily vary from two to eight or ten inches, according to the crop to be protected and the age of the insects to be captured. The "dozer" may be of any length desired up to sixteen or eighteen feet. If small it can be drawn by hand, but when larger a horse or two is preferable. When full the insects can be removed, a little more oil added and the machine again started. In this way a number of bushels of 'hoppers may be destroyed during a single day. The cost is trifling and the remedy very effectual.

In a garden an old hen with chickens will prove quite valuable, while a flock of turkeys will do much good in ridding the premises of the pest.

Slaughter for Tuberculosis

A couple of weeks ago a public slaughter of tuberculous cattle took place at Syracuse, N.Y. The slaughter was conducted by a committee of the State Assembly and the public were invited. The State veterinarian was present and also Prof. Law, of Cornell University, who made an official diagnosis of each carcass.

The herd from which the slaughtered animals were taken was tested on June 14, and out of twenty-seven animals twenty-one reached to the tuberculin test. The herd was brought to Syracuse July 15 and on the afternoon of July 18 another test was made. Two readings were taken that day and four the following and all the animals again reacted showing a rise above normal of from about two to four degrees, or an average temperature of from 103° to $104\frac{1}{2}^{\circ}$. With the exception of one or two the animals were a sickly looking lot and any veterinarian could probably have said from physical examination alone that the animals should have been slaughtered.

When slaughtered the dressed parts of the carcasses were carefully examined and a special report made of each animal. In the application of the test the rise of temperature was very marked at the first reading, and even through the remaining five readings. This might indicate that if tuberculin is to be relied upon at all, tuberculosis was pretty well advanced in these animals. The two animals, which from physical appearances one would judge to be healthy, the post mortem showed to be the most diseased of all.

The following, which is taken from the report of the slaughter as it appeared in a recent issue of *The Country Gentleman*, sums up the conclusions and shows wherein the slaughter failed to establish indisputable proof of the reliability of the tuberculin test:

The deductions to be drawn from this test are (1) that tuberculin can be relied on to diagnose tuberculosis when in an advanced stage; (2) that the animals killed were a menace to the public health, and that the State Tuberculosis Committee were justified in quarantining this herd; (3) that to protect the consumers of this State from unwholesome milk and diseased meat, the work of inspection should be vigorously prosecuted along reasonable lines.

A mistake was made in not purchasing from Mr. Brown the animals in his herd which did not react. They should have been killed with the others, and if four were free of disease, the victory for tuberculin would have been complete. As it is, in a herd so badly affected, there will always be reason to suspect that the animals which did not react were

also diseased, and that tuberculin did not do its work. The fact that the animals killed and found diseased had reacted to tuberculin does not prove its infallibility. The State Board of Health, in past years, killed many herds of cattle that had reacted, and were found diseased on post-mortem. What the State should do is to secure a herd which, on physical examination, is pronounced by a competent veterinarian free of disease; then tuberculin-test them, and kill those that respond to the test, as well as those which do not. If the latter are found diseased, then tuberculin cannot be wholly relied on; if free from disease, its reliability would be established, and contention on this point ceases.

Cement Floors in Hog Houses

In reply to a question in the *National Stockman and Farmer*, asking for information in regard to cement floors in hog houses, Mr. Waldo F. Brown, Butler County, Ohio, says:

"The first thing to do is to throw out the earth, and the excavation should be down to solid earth. On my soil we dig down about ten inches, and fill to within four inches of the top with small stone or gravel, and level it off and tamp down solid. Next fill to within half inch of top with concrete. This is made by mixing gravel and cement, or part gravel, part broken stone, no piece larger than a hulled walnut, and part sand, will give the best concrete, and with these materials you can use twelve barrels to one of cement, five or six of gravel, three of crushed stone, and three of coarse sand, or, if the gravel is sandy, six of it and the same of the stone. I use only gravel, as there is no machine for crushing stone in this locality, and use nine of gravel to one of cement. The material for the concrete must be thoroughly mixed; we measure it in a bucket, and build up a heap of a perch or so, and then beginning at one side we shovel it over four times dry. The mixing cannot be too thorough, as every pebble should be coated with cement so that it will adhere to its neighbor, for the concrete foundation should be one solid rock when it hardens. The fifth time it is shovelled over sprinkle with water so as to thoroughly dampen it, but do not make it dripping wet, and now it is ready to be put down. Stake strongly some two-inch pieces at the edges of where the floor is to be made, and with square and level get them in the right position, and wheel the concrete and spread it two inches at a time, and ram solid. An iron pounder is best, but for a single job you can make a rammer of thick oak plank, three inches thick is best, but two will answer. Saw it eight inches square, and bore a hole in the centre, and put an upright handle to it. The tamping must be well done so as to leave no cavities, and in order to leave just a half inch of the finishing coat, use a straight-edge with a half inch cut out at each end, and then as you lay it from one edge piece to the other you can get an exact half-inch for the liquid stone. Portland cement does not set as quickly as the cheaper grades, and while I advise putting down the concrete as soon as mixed, if some is left to stand over night it will not be spoiled, but can be put down in the morning.

"As soon as the frame is filled with the concrete mix the mortar for the topping. Coarse, sharp sand gives the strongest floor, and I screen the sand out of the gravel from which the concrete is made, using a screen with quarter-inch meshes. Mix in a box two parts of sand to one of cement, temper thoroughly and spread as soon as mixed and fill to the top of the frame. Turn the straight edge over and level off with it to the top of the frame, and see that the corners and edges are filled and smoothed. Lay the floor in sections about three or four feet wide so that you can easily reach across to trowel and smooth it smooth. Now carefully remove the edge piece and set it for the next section, using the floor for the straight edge to work on at the side finished, and as you lay the second strip be careful to make the union perfect between the last strip