CONTROL OF RODENTS.

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The control of rats and mice is one that at times looms large, not only in dwelling houses but in storage barns and in the field, where by their depredations on agricultural crops serious losses often occur.

A considerable amount of study has therefore been devoted in many parts to their habits, &c., in order to evolve economic methods of control.

In dwelling houses and cellars, objection is mostly taken to poisoning as it often leads to the animals dying in inaccessible situations, as in the roof or under flooring, &c., resulting in much discomfort from objectionable smells.

Trapping does not lead to these troubles and is therefore more generally resorted to when rats and mice infest these situations. The guillotine trap operating a trip wire on a spring is the commonest, but the old wire cage with a trap door and removable end is not limited to a single catch and is a very suitable type for use in cellars and barns in particular.

In trapping in such localities it has been a long recognized fact that feeding the rats or mice for a few days in and around unset wire traps will draw numbers to that locality, and when the traps are set, the resultant catch leads to a much larger clean up of the pest than would otherwise be the case. Meal, chopped meat or other food can be led through the traps while open, thus accustoming the rodents to run through the cages.

In handling traps (or baits) care must be taken not to touch the wire, or baits, with the naked hands, as rats are very readily frightened by the smell left by human fingers.

In barns and sheds the rolling-drum barrel trap is very effective when properly constructed. The barrel is stood on end and has the top removed: a large round tin or other form of cylinder is suspended on a medium spindle across the open mouth of the barrel and smeared with fat, while the barrel is half filled with water. A piece of board is laid from the floor to the tip of the barrel and the rats going after the fat roll off the revolving drum into the barrel and are drowned.

For the protection of wheat and grain stacks in the open, excellent protection can be had by erecting a fence of galvanized iron buried to about 6 inches in the ground, with all posts inside the fence.

At intervals along this fence pits can be dug and either left open or old tanks fitted into them: the rodents working round the fence fall into the holes and very large numbers can thus be trapped and destroyed. In 1916-1917 when this method was adopted in the wheat areas of New South Wales for the protection of stacks at railway depots, even *tons* of mice per day were thus destroyed.

Fumigation has proved very effective in destroying rats in the field and where their burrows are met with under concrete floors.

Hydrocyanic (Prussic) acid is generally used: Calcium Cyanide is a chemical that evolves the poison gas relatively slowly and therefore has a decided advantage over the older methods in giving a safety margin to the operators: in practice the dust is blown into the burrows and the openings sealed.

For general field use poison baits of various kinds have proved very efficacious, and many proprietary preparations have been put on the market: formulæ for "home made" baits have been recommended in many of the publications of the U.S.A. Department of Agriculture and others.

Baits should be prepared and set out at such time as they will be fresh when the rodents come out in the early evening. Very often they will follow definite trails or tracks, and baits laid on these runways have the best chance of being eaten.

It is preferable to set the baits under covers, not only to protect them from domestic animals but also to imitate a natural shelter site for the rats and mice. An ordinary open drain pipe or galvanized iron down-piping can be used, or a piece of galvanized iron or a piece of old kerosene tin cut and bent into a curve and fastened to a piece of board, will also act as shelters, inside which the poison bait is placed and then set out.

The following formulæ are recognized as standard poison preparations for home use: there are, of course, many proprietary preparations, many of which at least contain one or other of the active ingredients mentioned below:—

A. Strychnine.

Mix ½ oz. of powdered strychnine and ½ oz. of baking soda together and dust over freshly-cut cubes (about ½ in. dia.) of potatoes. This mixture is sufficient for about 2 quarts of potato cubes.

B. The Starch-coated grain bait.

Mix 1 tablespoon of laundry starch in ¼ cup of cold water: when this is an even smooth mixture, stir it into ¾ pint of boiling water to make a clear thin paste. Mix together 1 oz. of powdered strychnine and 1 oz. of baking soda and stir into the starch paste to form a smooth creamy mass free from lumps. Stir in ¼ pint of heavy syrup and 1 tablespoonful of glycerine.

Apply this mixture to 12 lbs. of wheat or crushed whole-oats and mix thoroughly to ensure that each grain is coated.

Strychnine, is, of course, a virulent poison and the greatest care must be taken in handling it. It is highly poisonous to all animals and humans. The reason for mixing baking soda with the poison in the baits is that the action of the poison is considerably hastened.

Barium Carbonate.—This chemical is only mildly poisonous and is therefore slow in action: it is odorless, tasteless and inexpensive.

This chemical is used with cereals or meal. The powder is thoroughly worked into the cereal or ground meal, either with the hands or with a spoon, in the proportions of 1 part of Barium Carbonate to 4 parts of the food. The mixture should be moistened to the consistency of a soft mush, as in this state it is far more readily eaten by rats and mice. One teaspoonful of the mixture is sufficient for one bait.

It can also be sifted over freshly sliced fruit or vegetables, and should afterwards be well rubbed into them. The ration of one part of powder to four parts of food should be maintained as far as practicable.

Red Squill.

Squill is a bulbous plant grown in the Mediterranean, there being two varieties, white and red, the latter having definite toxic properties against rodents, but comparatively harmless to humans, dogs, cats and other domestic animals.

As the percentage of toxic principles varies considerably, care should be taken to buy only standardized preparations of the powder, when the quantities recommended by the manufacturers will act as a guide to the quantities required.

In all cases of preparation of baits it is most important not to touch them with the hands more than is absolutely essential. Likewise it is also essential to wash the hands carefully after handling the baits.